

Specialist Consultancy Services for Environmental Impact Study at Woodlands North

Final Report

Housing & Development Board (HDB)

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List of Acronyms

Acronym	Definition
AECOM	AECOM Singapore Pte Ltd
AGB	Aboveground Biomass
ALARP	As low as reasonably practicable
APHA	American Public Health Association
ASEAN MWQC	ASEAN Marine Water Quality Criteria
Bgs	Below ground surface
BMPs	Best Management Practices
BOD_5	Biological Oxygen Demand
BT	Bukit Timah Granite
BTNR	Bukit Timah Nature Reserve
CCNR	Central Catchment Nature Reserve
Chl-a	Chlorophyll-a
COD	Chemical Oxygen Demand
COPPC	SS 593: Code of Practice for Pollution Control, 2013
CT	Contractor
DBH	Diameter at Breast Height
DO	Dissolved Oxygen
EBS	Environmental Baseline Study
EC	Electrical Conductivity
ECM	Earth Control Measures
ECO	Environmental Control Officer
EHS	Environmental, Health and Safety
EIS	Environmental Impact Study
EJS	East Johor Strait
EMMP	Environmental Monitoring and Management Plan
ERP	Emergency Response Plan
ERT	Emergency Response Team
Fe	Iron
GIS	Geographic Information System
Ha	Hectares
HASP	Health and Safety Plan
HDB	Housing and Development Board
IDF	Intensity-Duration-Frequency
IUCN	International Union for Conservation of Nature
LNAPL	Light Non-Aqueous Phase Liquid
LTA	Land Transport Authority of Singapore
MLS	Marchwood Laboratory Services Pte Ltd
MPA	Maritime Port Authority of Singapore
MSL	Mean Sea Level
NAS	National Archives of Singapore
NBSAP	National Biodiversity Strategy and Action Plan
NEA	National Environment Agency of Singapore
NMDS	Nonmetric Dimensional Scaling Ordination
NParks	National Parks Board of Singapore
PRO	Public Relation Officer
PUB	Public Utilities Board of Singapore
QECP	Qualified Erosion Control Professional
SCO	Superintending Officer
SIDS	Silty Imagery Detection System
SRDB	Singapore Red Data Book

List of Acronyms

Acronym	Definition
sRMS	Scaled Root Mean Square
RAF	Royal Air Force
Redox	reduction-oxidation potential
RL	Reduced Level
RMN	Royal Malaysian Navy
ROH	HDB's Remaking Our Heartland Programme
RTO	Resident Technical Officer
RTS	Rapid Transit System
SHE	Safety, Health and Environment
SIDS	Silty Imagery Detection System
SO	Supervising Officer
SOP	Standard Operating Procedure
SULE	Safe Useful Life Expectancy
SWL	Stabilized Groundwater Level
SWMM	Stormwater Management Model
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
TP	Total Phosphorous
TPZ	Tree Protection Zone
TSS	Total Suspended Solids
URA	Urban Redevelopment Authority of Singapore
VES	Visual Encounter Surveys
WSQ	Workforce Skills Qualifications

1 Executive Summary

Objective of Study

An indicative area in Woodlands North, which has been safeguarded for part residential and road use in the Master Plan since 2003 (hereafter referred to as the "projects"), is within close proximity to Admiralty Park. Hence, the Housing and Development Board (HDB) has appointed AECOM Singapore Pte Ltd (AECOM) to carry out an Environmental Impact Study (EIS) to assess the potential impact of the projects and recommend mitigating measures.

Project Description

Close to half of the area safeguarded for residential use is occupied by the former Admiralty West Prison (AWP) and an interim road network that would be removed once Woodlands North Coast Road is completed. The rest of the area is largely composed of secondary vegetation[1].

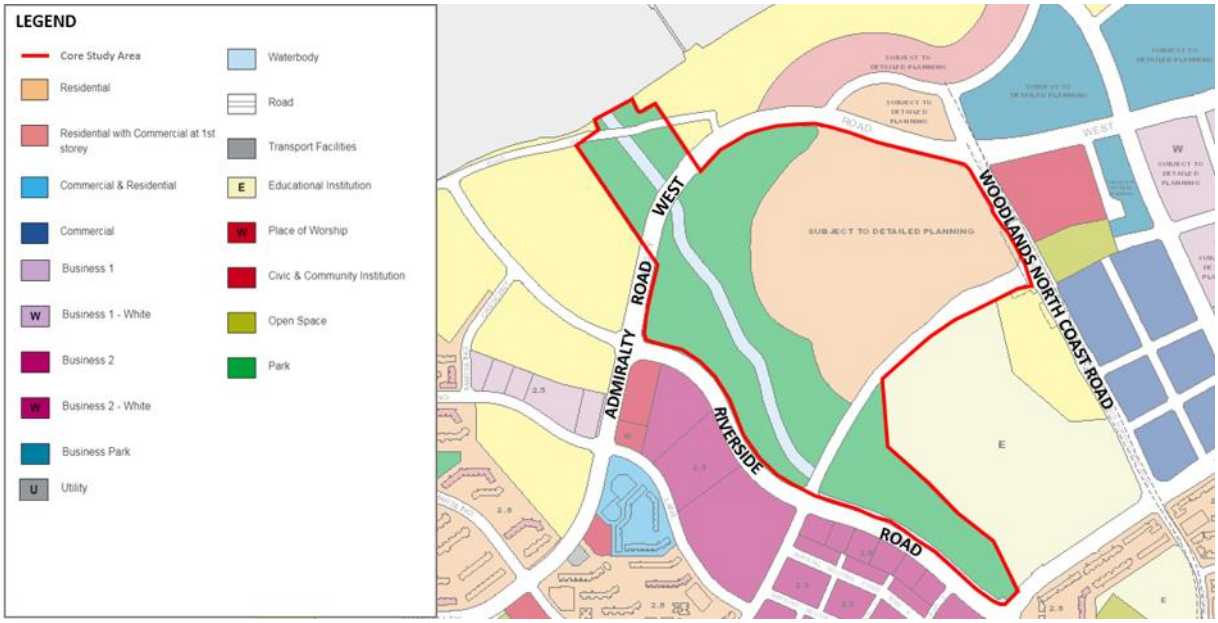


Figure 1: Planned Land Use for the Core Study Area as per URA Master Plan 2019

The proposed residential use is likely to introduce more traffic into the area, in addition to future developments in Woodlands North. Hence, to support the longer term development potential of the wider area, a road network connecting Riverside Road and the future Woodlands North Coast Road would be needed. These works are likely to entail site clearance and earthworks to achieve PUB's minimum platform levels, alongside sewer, drain, road and building construction. Full details are provided in Section 3 of the report.

[1] Secondary vegetation refers to vegetation that succeeds on the site where clearance or removal has been made by nature or mankind (Corlett, 1994)

Environmental Baseline Findings

Baseline studies were carried out between Mar 2018 to Jan 2019 and a summary of the baseline findings is provided below. The base plans shown throughout the report reflect the site condition during the subject study period. More information can be obtained from Sections 7, 8 and 9 of the report.

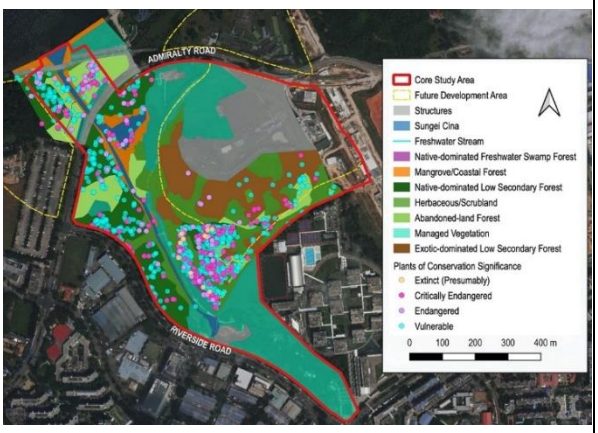


Figure 2: Vegetation Distribution and Distribution of Flora Species of Conservation Significance in the Core Study Area

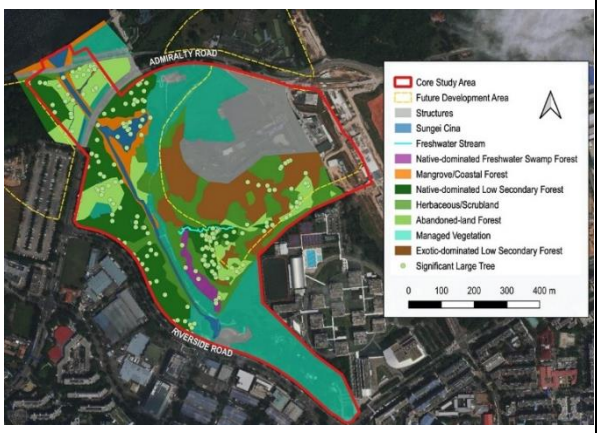


Figure 3: Distribution of Large Trees in the Core Study Area

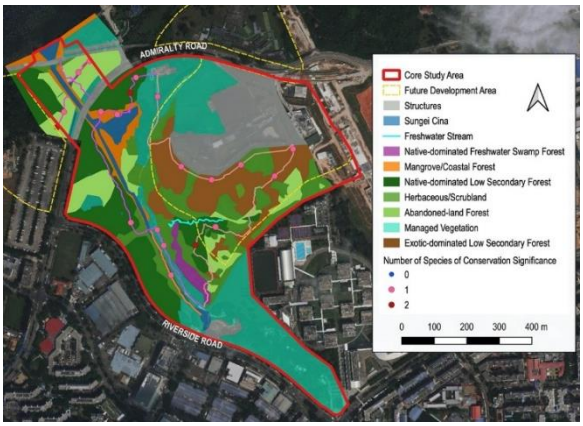


Figure 4: Distribution of Fauna Species of Conservation Significance in the Core Study Area

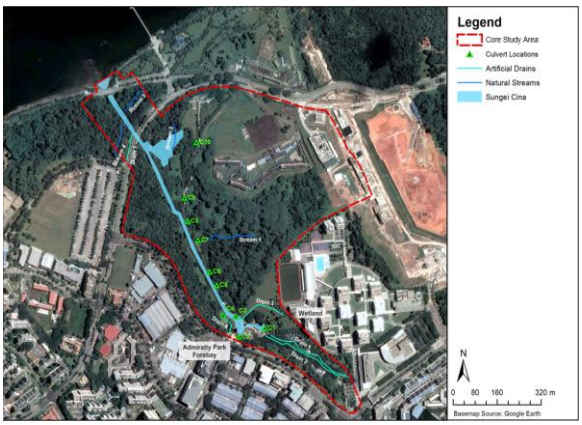


Figure 5: Existing Waterbodies and Culverts in the Core Study Area

- **Vegetation distribution** (see Figure 2) - Almost half of the core study area is composed of urban structures and managed vegetation (45.3%), followed by native dominated low secondary forest (19%), herbaceous/scrubland vegetation (15.6%), exotic-dominated secondary forest (13.2%), abandoned land forest (11.3%), mangrove/coastal forest (4.3%), native-dominated freshwater swamp forest (1.5%) and waterbodies. The mangrove/coastal forest located within Admiralty Park

and the native-dominated freshwater swamp forest found near/at the southwestern corner of the proposed residential use are assessed to be of high ecological value[2].

- **Biodiversity, Flora** (see Figure 2 and Figure 3) – Of the 475 vascular plant species (e.g. ferns and flowering plants) documented, 162 species are of conservation significance[3] to varying degrees[4], Many were planted in the past. These species are mainly concentrated near/at the southwestern corner of the proposed residential use. A total of 197 significant large trees and palms, comprising 44 species were documented. Close to 75% of them are found within Admiralty Park. The remaining 25% (53 trees of 13 species) are found in the southern part of the proposed residential use, most of which are commonly cultivated species.

- **Biodiversity, Fauna** (see Figure 4) – A total of 246 fauna species were recorded. 14 are of conservation significance to varying degrees[5]. They are made up of one odonate, two butterflies, two reptiles and nine bird species. Though the highest fauna richness was recorded in northern Admiralty Park, with 37 species, there is no clear hotspot for fauna of conservation significant species.

- **Stream Mapping** (see Figure 5) – There are 4 natural streams, 5 concrete drains, 10 culverts and Sungei Cina identified. All streams have continuous low-flow when no rain occurs on site or at surrounding areas. No flow condition was observed for certain drains during dry weather. During wet weather, high flow rate and increased water levels were observed at certain drains and along Sungei Cina. Most of the natural streams and drains flow to Sungei Cina through existing concrete culverts located at their downstream. water flow of Sungei Cina is influenced by tides.

- **Water Quality** – Water samples were collected along the upstream, midstream and downstream of Sungei Cina to observe its in-situ and ex-situ water quality conditions. Most water quality parameters met NEA Trade Effluent Discharge limits. The concentration of ex-situ parameters did not vary significantly across the assessed locations. Comparison against relevant guidelines indicated that the water quality had a relatively high nutrient content, which suggest that water quality in Sungei Cina might effect aquatic life in Sungei Cina, in line with dissolved oxygen (DO) level findings from in-situ results.

- **Groundwater -** Based on the existing groundwater levels, the inferred groundwater flow direction is in the west-southwest towards Sungei Cina. Groundwater in areas near the Straits of Johor are expected to flow towards the sea. Saline groundwater discharge could be due to marine deposits in the soil and/or exchange with the Johor Straits.

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[2] The ecological value of habitat types is evaluated based on 5 broad categories, the “Quality”, “Resilience” and “Use” of habitat and how far the habitat supports the “Resilience” of species of “Conservation Value” (refer to Table 27).

[3] The global conservation status of flora and fauna follow the International Union for Conservation of Nature (Red List) while the local conservation status of fauna mainly follows the Singapore Red Data Book, with reference to updated local checklists were available. Refer to Table 13 for the definition of various global and local conservation statuses for species. For vascular plant species, only their local conservation status is considered as it is deemed more relevant in a local and development context.

[4] See Appendix B for the plants of conservation significance

[5] See Appendix F for more information on the list of fauna species of conservation significance

Proposed Core Conservation Area (CCA)

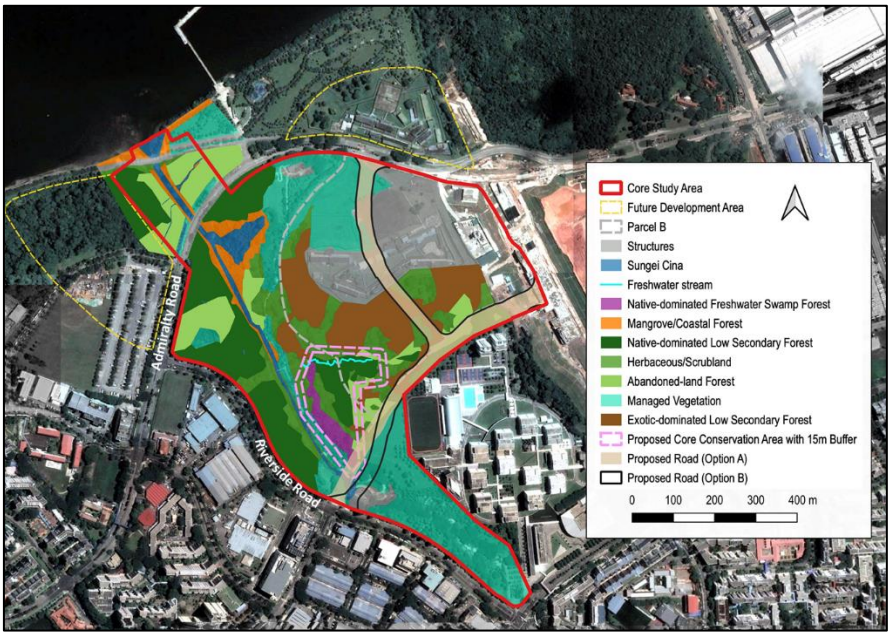


Figure 6: Proposed Core Conservation Area (dashed pink)

Based on the baseline findings, a 4.39 ha area (inclusive of 15 m buffer), as shown in Figure 6, is recommended to be retained based on the following considerations. More details are provided in Section 7.

- **Presence of rare and native vegetation types**, i.e. native-dominated freshwater swamp forest and native-dominated low secondary forest. The latter acts as a buffer to the former and is an early-successional secondary forest[6] that has the potential to transit into a more mature forest
- **Freshwater stream feeds the native-dominated freshwater swamp forest**
- **High concentration of flora species of conservation significance and significant large trees**
- The 15m buffer protects the retained habitats from disturbances

Environmental Impact Assessment

Sections 7, 8, and 9 discuss the methodologies used for impact identification, prediction and assessment on environmental parameters including biodiversity, hydrology, water quality and groundwater, throughout the course of the projects.

Recommended Mitigation Measures & Environmental Monitoring and Management Plan (EMMP)

Table 1 summarises the key mitigation measures that have been developed for adoption, to minimise the adverse impacts throughout the course of the projects. More details are in Sections 7, 8 and 9.

[6] Forest that developed on land cleared before the 1950s, dominated by native plant species

Table 1: Recommended Key Mitigation Measures

Environmental Parameter	Recommended Key Mitigation Measures and Best Management Practices	
	During Pre-Construction Phase	**During Construction & Operational Phase**
Flora and Fauna	• Retain habitats as much as possible, especially the CCA with a 15-m buffer. • Enhance landscape connectivity. • Implement bird-friendly building design. • Raise awareness on human-wildlife conflicts. • Minimise unnecessary works by revising contractors' method statements. • Establish Tree Protection Zones; Transplant/harvest species of conservation significance • Execute tree-felling works outside of bird breeding and nesting season, if possible.	• Provide soil erosion control measures; Ensure slope stabilisation and grading works will not impact the CCA. • Execute fauna response and rescue protocol when fauna is found on site. • Raise awareness on biodiversity and minimise human-wildlife conflicts by conducting toolbox briefings to workers. • Conduct regular inspections on contractors' compliance to reduce fauna mortality and negative impacts to surrounding habitats. • Reduce insecticide use.
Hydrology and Water Quality	**For proposed residential development** • Conduct detailed hydrological and erosion control study on stormwater to be diverted from future development to CCA. • Design for stormwater peak flow to be lower/or equal to existing peak flow of current condition. • Divert stormwater run-off from existing drain and future development to freshwater stream. • Create green areas to buffer against the edge effects of the future development. **For proposed road development** • Avoid the CCA as much as possible. • Avoid introducing road structures such as columns or supporting structures directly on the man-made freshwater pond and Sungei Cina as much as possible.	• Dry out the man-made freshwater pond at Admiralty Park forebay and install silt curtains before road construction; Divert flow to Sungei Cina while ensuring no erosion along its banks. • Implement settling pond to limit discharge of suspended solids into waterbodies; Monitor and treat effluent before released into waterbodies. • Undertake precautionary management controls measures (e.g. regular inspections, housekeeping). • Install portable toilets and collect sanitary effluents weekly for disposal. • Develop protocols for proper handling, transfer and storage of chemical substances to prevent chemical spillage; Conduct periodical leak detection tests. • Periodically dispose stored solid and toxic waste by licensed waste management contractors.
Groundwater	• Install piezometers to monitor changes in groundwater level. • Monitor salinity near the eastern and western margins of the Sungei Cina mangrove. • Schedule developments in phases to minimise volume of dewatering at any one time. Use recharge wells as necessary during excavation works to limit groundwater drawdown and baseflow reduction on Sungei Cina.	

With the implementation of the mitigation measures, the resultant impact significance is assessed to be minor for most of the environmental parameters, as shown in Table 2.

Table 2: Summary of Impact Evaluation and Residual Impact Significance for all Environmental Parameters

Environmental Parameter	Sensitive Receptors	Unmitigated Impact Significance	Mitigated Impact Significance
Flora and Fauna	**Proposed CCA** Due to residential development Due to road development - Option A[7] - Option B[8]	Major *(including CCA)* Major Minor	**Minor** ***(excluding CCA)*** **Major** **Minor**
	Sungei Cina Mangroves (within Admiralty Park)	Minor	**Minor**
Hydrology and Water Quality	**Proposed CCA** Due to residential development Due to road development - Option A - Option B	Minor – Major	**Minor**
	Sungei Cina	Negligible - Major	**Negligible - Minor**
	Sungei Cina Mangroves (within Admiralty Park)	Negligible - Minor	**Negligible - Minor**
	Aquatic life	Negligible - Major	**Negligible - Minor**
Groundwater	**Proposed CCA**	Major	**Minor**
	Sungei Cina	Minor	**Minor**
	Sungei Cina Mangroves (within Admiralty Park)	Negligible - Minor	**Negligible - Minor**

EMMP has also been developed to be implemented during the construction phase of the projects to ensure that residual impacts are minimised, the effectiveness of mitigation measures are justified and contingency plans are prepared/implemented, as needed. The EMMP is described in Section 10 of the report.

[7] See Figure 6 for more details

[8] See Figure 6 for more details

2 Introduction

The Housing and Development Board (HDB) appointed AECOM Singapore Pte Ltd (AECOM) on the 20th February 2018 to carry out an Environmental Impact Study (EIS) within an indicative area proposed for a future residential development (hereafter referred to as the "projects") located in Woodlands Neighbourhood 9 area.

2.1 Purpose and Objectives of the EIS of Work

The purpose of this EIS, as described in Section 1.3 of HDB's tender document for Specialist Consultancy Services for Environmental Impact Study at Woodlands North, is to assess the nature and extent of environmental impacts arising from the construction of the projects and related activities that take place concurrently. The EIS is to be conducted in the least environmentally intrusive manner and the information obtained will contribute to the decision making on:

- The overall acceptability of any adverse environmental consequences that are likely to arise as a result of the projects;
- The conditions and requirements for the construction of the projects to mitigate adverse environmental consequences whenever practicable; and
- The acceptability of residual impacts after the proposed mitigation measures are implemented.

The objectives of this EIS, as described in Section 1.4 of HDB's tender document for Specialist Consultancy Services for Environmental Impact Study at Woodlands North, are as follows:

- To identify and describe the elements of the community and environment likely to be affected by the projects and/or likely to cause adverse impacts to the projects, including both the natural and man-made environment and the associated environmental constraints to and by the projects;
- To identify and determine the baseline conditions of biodiversity and to formulate a biodiversity inventory and distribution map to identify the core biodiversity areas;
- To determine the baseline surface and groundwater hydrological conditions, and based on model testing results to project the potential hydrological impact caused by the proposed projects;
- To identify all potential receptors within the core study area, include the project site and in the vicinity of the project site, mangroves and other biodiversity receptors within Sungei Cina and the East Johor Strait.
- To assess the potential impacts caused by both construction, and operation periods of the proposed housing development based on the detailed development plan, propose proper mitigation measures and recommend an Environmental Monitoring and Management Plan (EMMP).

- To propose effective mitigation measures to minimise adverse impacts (e.g. pollution, environmental disturbance and nuisance) during construction of the projects; and
- To propose an Environmental Monitoring and Management Plan (EMMP) to guide the proposed projects including to identify, predict and evaluate the residual environmental impacts (i.e. after practicable mitigation) and the cumulative effects expected to arise during construction of the projects in relation to the sensitive receivers and potential affected uses; to identify, assess and specify methods, measures and standards, to be included during construction of the projects which are necessary to mitigate the residual environmental impacts and cumulative effects and reduce them to minimal levels.

2.2 Scope of Work

As detailed in Section 3.2 of HDB's tender document for Specialist Consultancy Services for Environmental Impact Study at Woodlands North, the services under this contract shall include, but are not limited to the following:

- Field survey, data collection and baseline study including topography survey, soil investigation, hydrological and water quality survey;
- Formulation of biodiversity inventory and distribution maps;
- Environmental Impact Study;
- Mitigation measures and EMMP; and
- EIS Report.

The projects' development is currently at the feasibility study stage; thus, limited information regarding development plan, design elements, construction methodology, and project components was available at the time of writing. Therefore, assumptions, if any, are described in individual assessment in Sections 7, 8 and 9. Should the construction and operational activities differ from our assumptions or build contractor make alterations to these assumptions/approaches, the contractor shall undertake a revised impact assessment addressing these changes.

2.3 Report Structure

In meeting the objectives of the EIS, the structure of the report is as follows:

- **Section 3** – Description of the projects provides the location of the core study area, a general overview of the projects, construction and operational activities, chemicals, materials and waste expected from the projects, as well as undergoing construction activities in the vicinity of the core study area.
- **Section 4** – Environmental Legislation, Policies, Plans, Standards and Criteria provides the legislative requirements relevant to the projects.
- **Section 5** – Description of the Environment provides a general description of the historical and current land use, topography and geology of the core study area.
- **Section 6** – Assessment Methodology provides the overview of the methodology used for the assessment.

- **Section 7** – Flora and Fauna Impact Assessment presents the methodology, baseline environment, design recommendations and evaluation of impacts to habitat, flora and fauna within the core study area, along with recommendations for mitigation measures and environmental monitoring and management program.

- **Section 8** – Hydrological and Water Quality Impact Assessment presents the methodology, baseline environment, identification of sensitive receptors, potential impacts, minimum controls and evaluation of impacts to the hydrology and water quality within the overall study area, along with recommendations for mitigation measures and monitoring and management program.

- **Section 9** – Groundwater Impact Assessment presents the methodology, baseline environment, evaluation of impacts to groundwater within the core study area, along with recommendations for best practices and environmental monitoring and management program.

- **Section 10** – Environmental Monitoring and Management Program (EMMP) details the organisation framework and roles and responsibilities of each stakeholder involved in the EMMP.

- **Section 11** – Conclusions and Recommendations provides a conclusive summary of the EIS's outcomes.

2.4 Study Limitations, Assumptions and Constraints

The findings in the report are subject to certain conditions and assumptions. The conditions and assumptions are noted in the report and any party reviewing the findings of the report must carefully review and consider such conditions and assumptions.

This report and all data and notes were gathered and/or prepared by AECOM and its sub-consultants in accordance with the agreed approach and methodology to be adopted, as well as the generally accepted engineering and scientific practice in effect at the time of AECOM's assessment of the overall study area.

Besides, there are inherent limitations associated with data acquisition in flora surveys due to the variability of vegetation communities across a site and changes to the detectability and presence of species with time. Therefore, it may be possible that some flora species occurring within the core study area, or perhaps not visibly present during the survey period, were not recorded. However, the surveys were comprehensive as survey routes were strategically planned to cover ecologically and geographically representative samples of the core study area, and all plant species sighted were identified and recorded to the best of the team members' abilities. Project team members who carried out the survey and identified the species post-survey have prior experience in conducting such flora assessments in Singapore.

Regarding fauna surveys, they consisted of targeted surveys of odonates (dragonflies and damselflies), butterflies, herpetofauna (amphibians and reptiles), birds, mammals, fishes, decapod crustaceans and molluscs, as thorough and consistent as possible. However, surveys will not detect all species for which the site may be important as fauna are highly mobile, frequently cryptic and vary in presence and abundance within and between seasons. Species returned by the literature review are therefore

considered to be potentially present in the site and were considered in the impact assessment. Professionals who carried out the fauna surveys are experienced field biologists and familiar with the local fauna.

Due to the above, the statements, conclusions and opinions contained in this report are approximations of the existing environmental conditions within the overall study area, based on available literature, expert observations and opinion at the time of reporting. In addition, the passage of time may result in changes in technology, economic conditions, sites variations, habitat conditions or regulatory provisions which would render the report inaccurate. Reliance on the report after the date of issuance as an accurate representation of current site conditions shall be at the user's sole risk. Neither AECOM nor any of their officers, agents or employees shall have any responsibility or liability whatsoever for negligence or failure to exercise reasonable skill and care in connection with such data and information utilised by AECOM in performing the Services.

All maps are to be used solely for the purpose of this EIS , and not for any other purpose. All maps are not to scale and are for illustrative purposes only.

3 Description of the Projects

3.1 Study Area

The overall study area for this EIS is approximately 72.8 ha. As shown in Figure 7, the overall study area includes a core study area demarcated in red and 2 other study areas (Parcels A and C) that are analysed for a different scope of impact assessment.

The core study area is assessed for both its biodiversity and hydrological impact while Parcels A and C are studied for their hydrological impact on Sungei Cina as stormwater from these parcels will be diverted to Sungei Cina.

The core study area comprises part of Woodlands Waterfront Park, Admiralty Park, the vacated former Admiralty West Prison, a temporary pumping station, a road network serving the Woodlands North Station and a 15-ha vegetated slope. Admiralty Park is one of the 24 nature areas that are subjected to administrative safeguards under the Parks and Waterbodies Plan (Special and Detailed Controls Plan). Parcel B (about 23.1ha), which is the proposed future residential area, is contained within the core study area. The north-eastern part of the Admiralty Park currently serves as ecological buffers for the Sungei Cina Mangroves by reducing disturbances from the surrounding.

Parcel A (around 10.1 ha) is located at the west of the downstream of Sungei Cina and is encompassed by an existing vegetated forest and some heavy vehicle parking lots.

Parcel C (about 6.6 ha) is situated to the south of Woodlands Waterfront Park and partially occupied by vacated former Khalsa Crescent Prison.

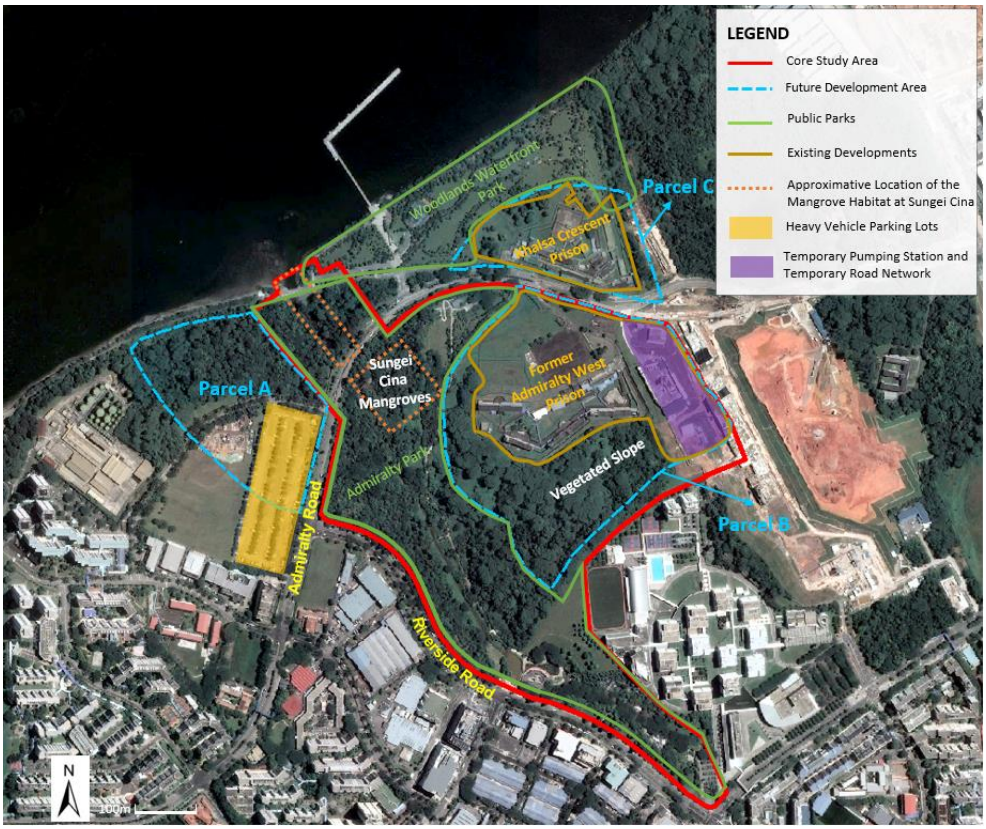


Figure 7: Overall Study Area for the EIS

3.2 Projects' Overview

The core study area has been zoned part 'Park', "Waterbody" and 'Residential' (subject to Detailed Planning) in the Urban Redevelopment Authority (URA)'s gazetted Master Plans since 2003. In the latest Master Plan 2019, as shown in Figure 8, the planning intention for the core study area has remained unchanged.

The area zoned as "Residential (subject to detailed planning)" is slated for development as part of the expanded Woodlands Regional Centre, which was announced under HDB's Remaking Our Heartlands programme in 2017, where Woodlands is poised to transform into a "Star Destination of the North". The expanded Woodlands Regional Centre will include Woodlands Central and Woodlands North Coast. The Woodlands North Coast residential development will offer a "Housing-in–the-Woods" experience by leveraging on the area's natural hilly terrain for views of Admiralty Park and the Straits of Johor.

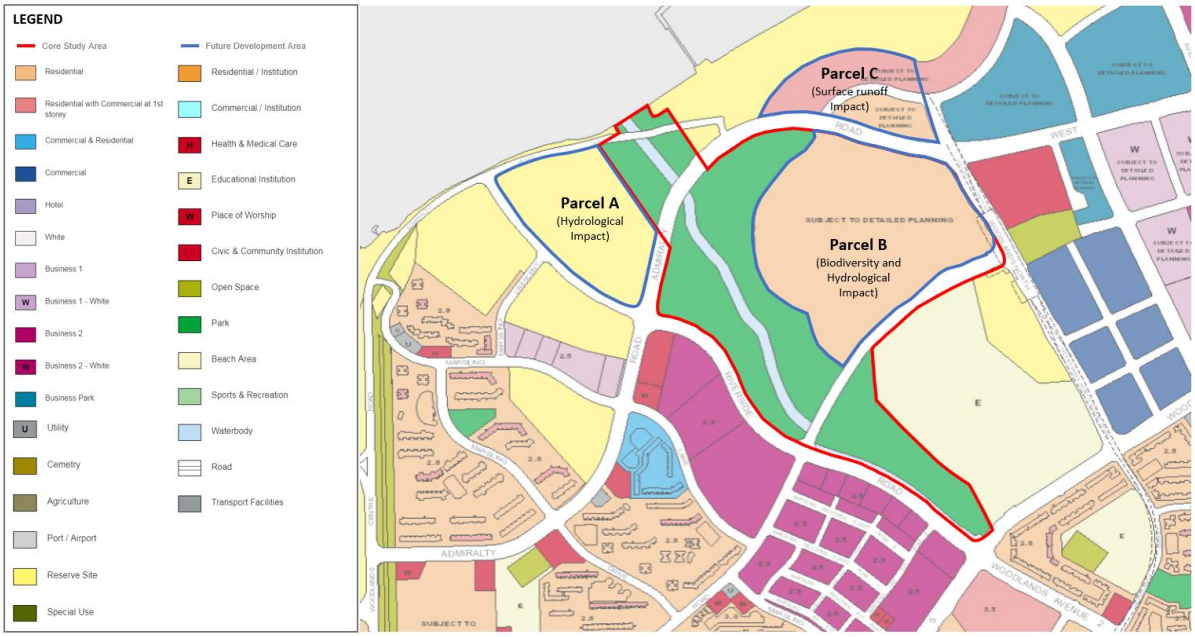


Figure 8: Planned Land Use for the Overall Study Area as per URA Master Plan 2019

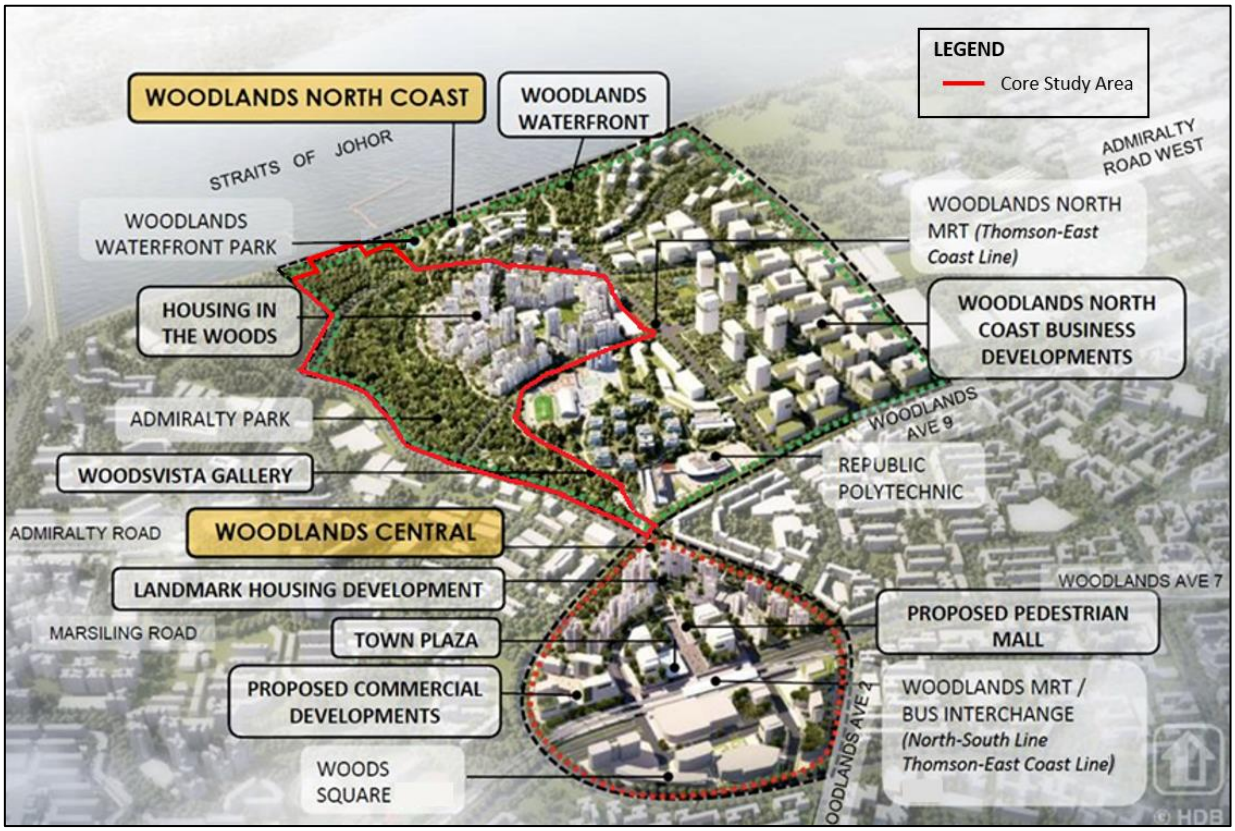


Figure 9: Artist's Impression of the Core Study Area in the Context of the Developments for Woodlands under HDB's Remaking Our Heartlands programme of Woodlands [MP-2]

3.3 Projects' Design

At the time of writing, very little information is available regarding the projects' design. For the purposes of impact assessment, it was assumed that:

- Within the core study area, the 23.1 ha of land adjacent to Admiralty Park bordered in blue in Figure 10 will be regraded and developed.
- Existing vegetation within Admiralty Park will be retained.
- New roads will be introduced within the core study area

The existing and provisional grading plan are shown in Figure 10 and Figure 11, respectively.

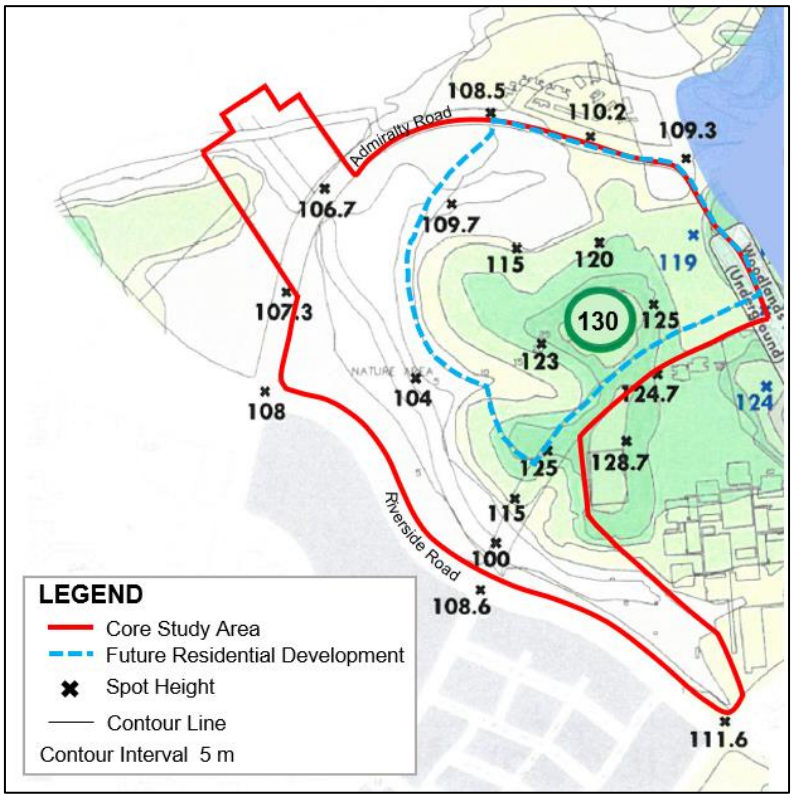


Figure 10: Existing Platform Levels within the Core Study Area

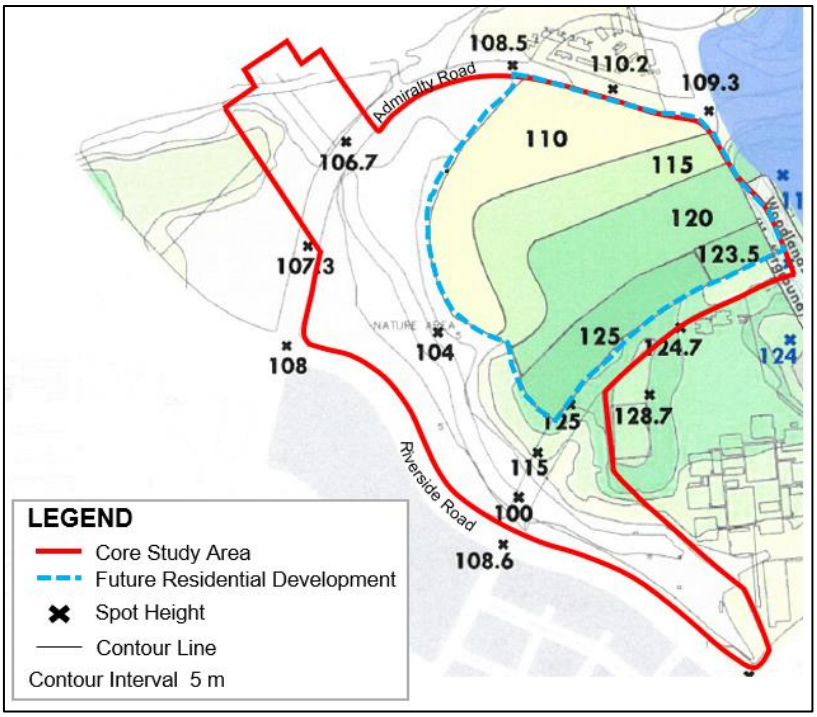


Figure 11: Proposed Platform Levels within the Core Study Area

As the parcel is bounded by Admiralty Road West to the north and the future Woodlands North Coast road to the east, which are expected to be major busy roads that preclude local access, a centralised north-south connection is required to serve the area. The road will be designed to allow for adequate parcel widths while allow residents to access their homes without requiring extensive internal driveways. A road is also proposed to connect the future North Coast Road to Riverside Road to provide an alternative discharge for contingency purposes and better traffic circulation by mitigating against potential vehicular conflicts along Admiralty Road west and internal roads of the “Housing in the Woods” area. Two road alignment options (Option A and Option B) are explored for the proposed road to connect the future Woodlands North Coast Road to Riverside Road and are shown in dark blue shaded area in Figure 12 and Figure 13 respectively.

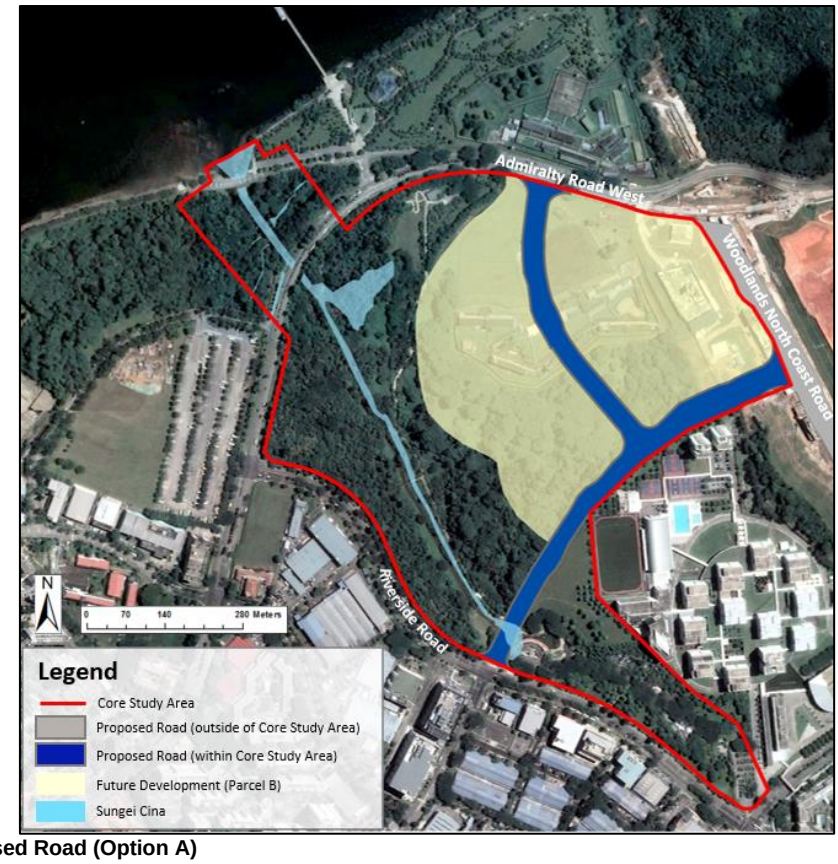


Figure 12: Proposed Road (Option A)

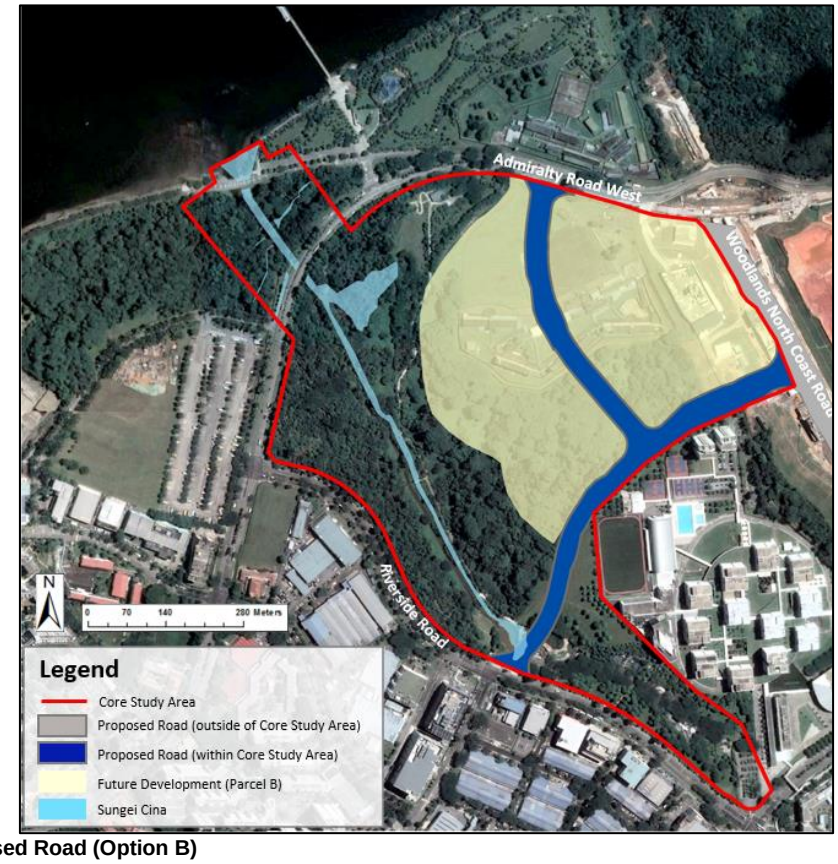


Figure 13: Proposed Road (Option B)

3.3.1 Construction Details of the Projects

3.3.1.1 Construction Activities

At this stage of report writing, limited information is available regarding the construction activities involved during the development of the proposed projects. They will entail civil engineering works, such as site clearance (removal of existing trees and vegetation), earthworks (cutting/filling within site) to achieve the desirable platform levels required from the drainage and sewerage perspective, construction of roads, drainage works, sewerage works, as well as building works such as foundation, superstructure construction, utilities/services laying, etc.

These construction works may potentially impact the flora, fauna, groundwater, hydrology and water ecosystems found within the area.

3.3.1.2 Chemicals and Material

Chemicals required during the construction stage typically include diesel, paint, lubricants, hydraulic oil, solvents and raw material such as cement and aggregates for concrete works.

3.3.1.3 Waste

Waste can be defined as unwanted material produced directly and indirectly as a result of construction works. In general, the wastes expected to be generated from the construction activities can be categorised as hazardous wastes (e.g. toxic industrial wastes, organic wastes), non-hazardous wastes (e.g. general waste, inorganic waste) and recyclable wastes (e.g. excavated soil). Typically, hazardous waste produced from construction activities can include oil, grease, sludge, solvents, empty containers of insecticide, paint, solvents, contaminated soil and groundwater, etc. Non-hazardous waste can include paper, cardboards, etc. Recyclable waste generated from the construction works will comprise of excavated spoil materials.

Liquid effluents generated from these activities will generally include extracted groundwater, sanitary discharges and storm water run-off.

3.3.2 Current Construction Activities Around the Core Study Area

On the eastern side of the core study area (refer to Figure 14), there is on-going building construction by JTC and construction for the Rapid Transit System (RTS) Link by LTA, which will link Singapore to Johor Bahru and the project is estimated to complete by 2026. These developments may cause further disturbance in the form of noise, dust, light and high human activity.

The Woodlands North MRT station was recently completed and opened in Jan 2020. The Admiralty West Prison is undergoing partial demolition works and will complete by Feb 2022.

Given that the future residential developments assessed in this EIS is only at the feasibility stage, its construction will not overlap with the current construction activities taking place in the vicinity of the core study area.

3.4 Operational Phase of the Projects

The operational of phase of the projects will mainly consist of human activities. An increase in human activities will cause disturbance in terms of noise and waste in the vicinity of the developments. In

addition, as natural landscape will be replaced by impervious surfaces, there would be reduced infiltration of water into the ground and increased run-off during storm events.

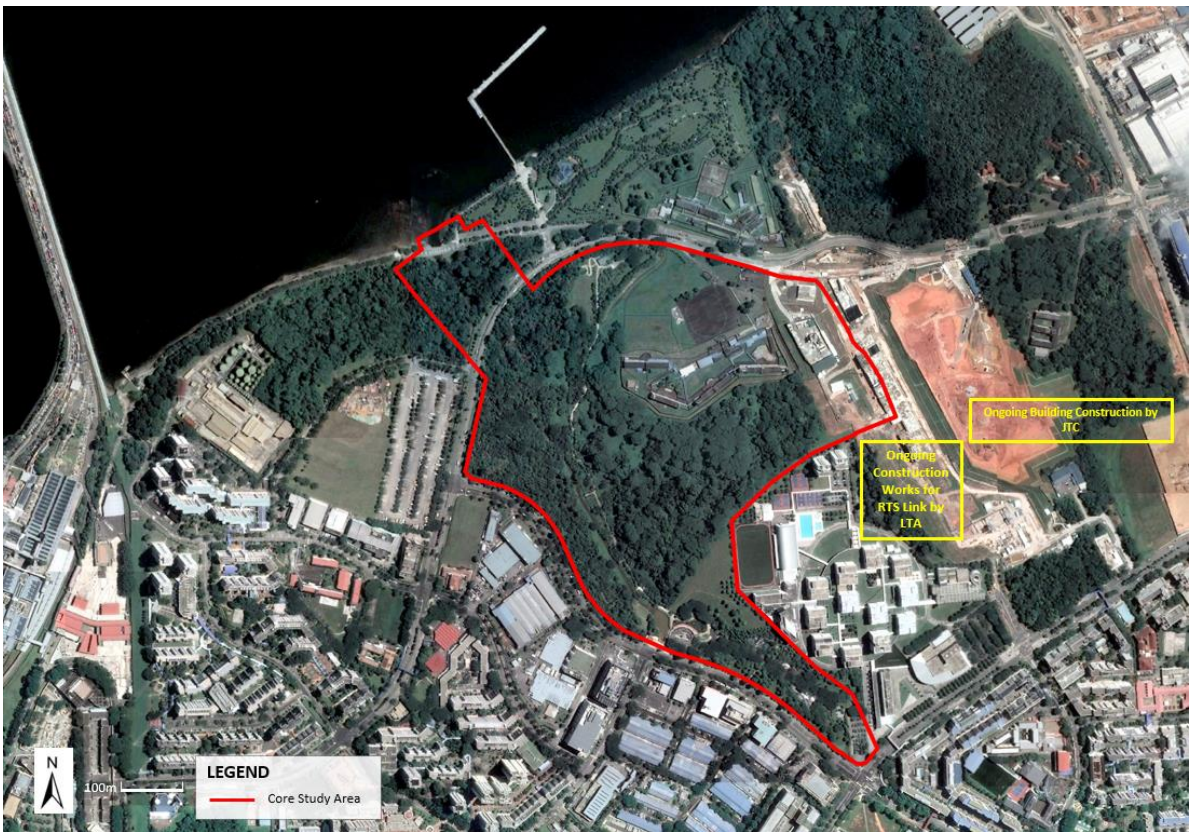


Figure 14: Ongoing Construction activities around the Core Study Area

4 Environmental Legislation, Policies, Plans, Standards and Criteria

A review of environmental legislations, plans, standards and criteria to the construction and operational phases of the projects was carried out and the applicable legislations are listed in Table 3. Additional review was done to identify appropriate international guidelines and best practices as well. The following sections that analyse the environmental impact of the projects seek to achieve compliance with the legislative references listed in Table 3.

Table 3: Applicable Legislation

Environmental Parameter	Applicable Legislation	Key Points
Biodiversity	National Biodiversity Strategy and Action Plan (NBSAP), 2019	This document provides a framework to guide biodiversity conservation efforts in Singapore. It intends to establish both policy frameworks and specific measures to ensure better planning and co-ordination in the sustainable use, management and conservation of biodiversity. A holistic approach has been adopted where the input of various public sector agencies and nature groups have been taken into consideration in the preparation of the document.
	Wildlife Act, Chapter 351, 2000	An Act for the protection, preservation and management of wildlife for the purposes of maintaining a healthy ecosystem and safeguarding public safety and health, and for related matters.
	Parks and Trees Act, 2006	• An Act to provide for the planting, maintenance and conservation of trees and plants within national parks, nature reserves, tree conservation areas, heritage road green buffers and other specified areas, and for matters connected therewith. • No tree with a girth exceeding one meter (when measured 1 m from the ground) should be cut or damaged without the prior approval of the relevant authorities. • No tree or plant will be cut or damaged if located within the heritage road green buffer.
	The Singapore Red Data Book (SRDB)	• Lists the endangered plants and animals in Singapore • Published by Singapore's Nature Society • Provides the scientific name, common name, status, description, habitat, distribution, threats, scientific interest and potential value, as well as conservation measures for each plant and animal listed.

Environmental Parameter	Applicable Legislation	Key Points
	The International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threated Species	• Provides taxonomic, conservation status and distribution information on plants, fungi and animals that have been globally evaluated.
Hydrology and Water	Singapore Sewerage and Drainage Act, 2001	Regulates the protection, maintenance and provision of stormwater drainage system.
	Singapore Standard 593: 2013 – Code of Practice for Pollution Control (COPPC)	• Provides guidelines for the appropriate discharge of any effluent into public sewer or watercourse. • Provides guidelines for the appropriate storage and accidental release of oils & chemicals.
	Singapore Environmental Protection and Management (Trade Effluent) Regulations, 2008	• Regulates the discharge of trade effluent to public watercourse. • Any discharge into a watercourse has to comply with the regulatory standards established in these regulations.
	Singapore Sewerage and Drainage (Trade Effluent) Regulations, 2007	Regulates trade effluent discharge into public sewerage system.
	Singapore Sewerage and Drainage (Surface Water Drainage) Regulations, 2007	Regulates measures to be implemented to protect the stormwater drainage system.
	PUB Code of Practice on Surface water Drainage, 2013	Provides guidelines for measures to be implemented to protect the stormwater drainage system and manage Surface water drainage (e.g. development and implementation of an Earth Control Measures (ECM) plan).
	PUB Circular on Preventing Muddy Water from the Construction Site, October 2015	All new construction sites with site area of 0.2ha and above, sites with problematic ECM, and sites within sensitive areas are required to implement CCTV including a Silty Imagery Detection System (SIDS) at the public drain to monitor the surface run-off discharges from the sites.
	Prevention of Pollution of the Sea Act 1090 (revised 2008).	An act to put into effect the International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978, and to other international agreements in relation to the prevention, reduction and control of pollution of the sea and pollution from ships, and generally for the prevention reduction and control of pollution to the sea (MARPOL).
	NEA Allowable Limits for Trade Effluent Discharge to Watercourse or Controlled Watercourse	Provides allowable limits for trade effluent discharge to watercourse or controlled watercourse in Singapore.

Environmental Parameter	Applicable Legislation	Key Points
	Sewerage and Drainage Act 1999 (revised 2001).	An Act to provide for and regulate the construction, maintenance, improvement, operation and use of sewerage and land drainage systems, and to regulate the discharge of sewage and trade effluent.
	ASEAN Marine Water Quality Management Guidelines and Monitoring Manual (2008)	Provides marine water quality criteria for the protection of the coastal and marine environment and human health within ASEAN.
Soil and Groundwater	Environmental Protection and Management Act, 2013	Regulates the discharge of trade effluent, oil chemical, sewage or other pollution onto land.
	SS 593:2013 Code of Practice for Pollution Control (COPPC)	• Provides guidelines for the control of land pollution and remediation of contaminated sites. • Provides guidelines for the appropriate storage and accidental release of oils & chemicals. • Provides the necessary guidance for conducting Environmental Baseline Study (EBS) for assessing contamination of a site and the respective standards to be followed.
	Environmental Protection and Management (Trade Effluent) Regulations, 2008	Regulates the discharge of trade effluent into any watercourse or onto land.
	The Sewerage and Drainage Act, 2001	Regulates the construction, maintenance, improvement, operation and use of sewerage and land drainage systems.
	Sewerage and Drainage (surface water Drainage) Regulations, 2007	• Regulates measures to be implemented to protect the storm water drainage system and avoid flooding. • Regulates the provision and maintenance of ECM in accordance with the Code of Practice on Surface Water Drainage.
Waste	Environmental Public Health Act	Regulates the storage, handling and disposal of wastes.
	Environmental Public Health (Toxic Industrial Waste) Regulations, 2000	Regulates the storage, collection and disposal of toxic industrial waste.
	Environmental Public Health (General Waste Collection) Regulations, 2000	Regulates general waste (incinerable and non-incinerable waste) disposal.
	Hazardous Waste (Control of Export, Import and Transit) Act 1997	Regulates the export, import and transit of hazardous and other wastes.
	Hazardous Waste (Control of Export, Import & Transit) Regulations 1998	Provides the application and granting of import, export, transit, Basel or special permits for hazardous wastes.

Environmental Parameter	Applicable Legislation	Key Points
	Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal	Singapore signed the Basel Convention in 1995. Its requirements were transposed into Singaporean law through the Hazardous Waste Act. The Convention obligates parties to provide for the environmentally sound management of hazardous and other wastes, e.g. restrictions on the import, export and trans-boundary movement of hazardous wastes. Appropriate measures must be taken to ensure that the generation of such wastes, as well as the consequences of waste pollution on human health and the environmental is minimal. Adequate disposal facilities must be available.
	Circulars on import and export of waste	• Several circulars have been rolled out prohibiting certain import / export of waste • One of the circulars prohibits import/ export of metal/plastic scrap containing toxic or heavy metals (PCD/BASEL/05-0021)
Chemical Substances	The Environmental Protection and Management (Hazardous Substances) Regulations, 2008	Regulates the transport, use and storage of hazardous substances.
	Fire Safety Act, 2013	Makes provisions for fire safety and for matters connected therewith.
	Fire Safety (Petroleum and Flammable Materials) Regulations, 2008	Regulates the transport, use and storage of flammable material to prevent occurrence of accidents.
	Code of Practice for the Storage of Flammable Liquids (SS 532:2007)	Provides guidelines for the transport, use and storage of flammable material to prevent occurrence of accidents.

5 Description of the Environment

5.1 Historical Land Use

The Admiralty area was most known for its use as a naval base by the British since the early 1900s. The eastern part of the site currently occupied by the vacated Admiralty West Prison was originally a Royal Air Force (RAF) radio station under the British colonial government in the 1910s to 1920s and later became the base for the Royal Malayan Navy (RMN). One of the earliest topographical map for the overall study area dates back to 1924, showing that the area was hilly and possessed streams that were connected to the sea which periodically inundated the area thus maintaining a brackish swamp (refer to Figure 15). Thereafter, between 1928 and 1938, extensive reclamation works took place along the shoreline to construct the Naval Base (Lim, 2012). The Naval Base had been established with setting up of Malayan Naval Forces (MNF) in 1949. Between 1945 and 1966, the core study area remained to be partly covered by mangrove and sundry tree cultivation (refer to Figure 16). In the 1950 and 1960s, the environs of the overall study area were occupied by Kampung Sungei Cina until it was acquired by the government in 1973 for clearance (Singapore Memory Project, 2014). By 1983, areas to the west of Sungei Cina were developed as part of the Woodlands New Town (refer to Figure 17). In 1994, the RMN headquarters relocated to a base built in Lumut, Malaysia and the site was returned to State in 1997.

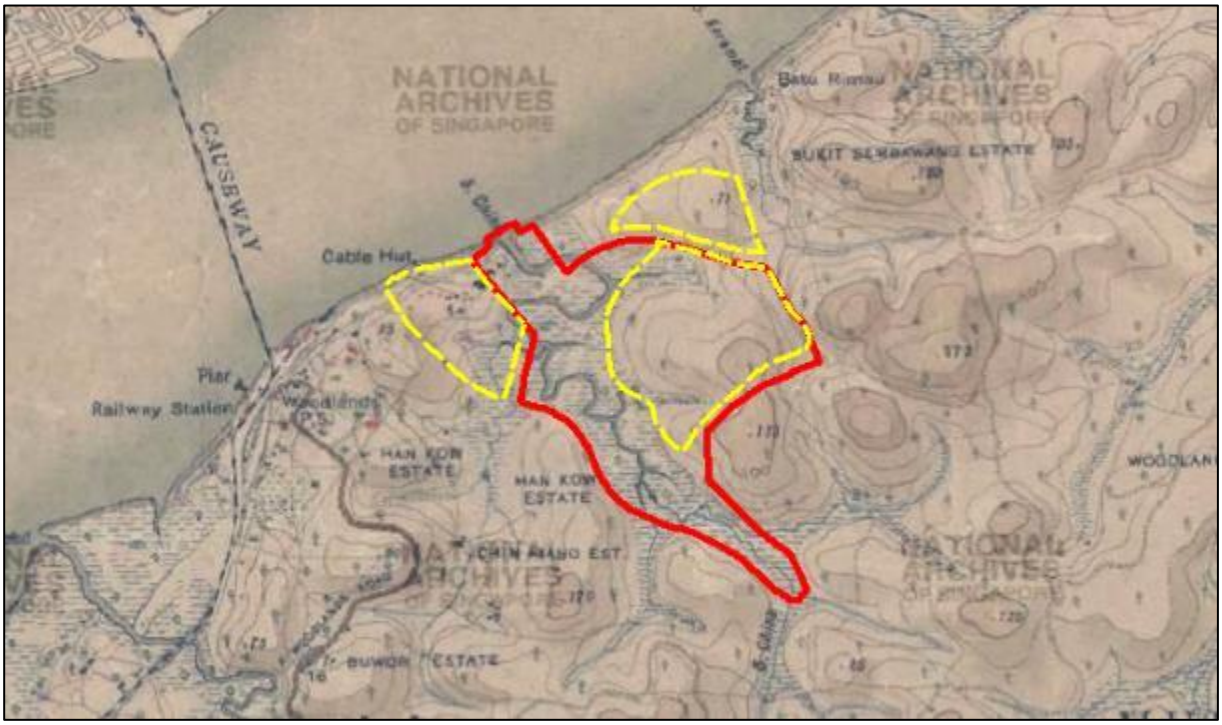


Figure 15: Topographical Map in 1924 showing the Overall Study Area [MP-3]

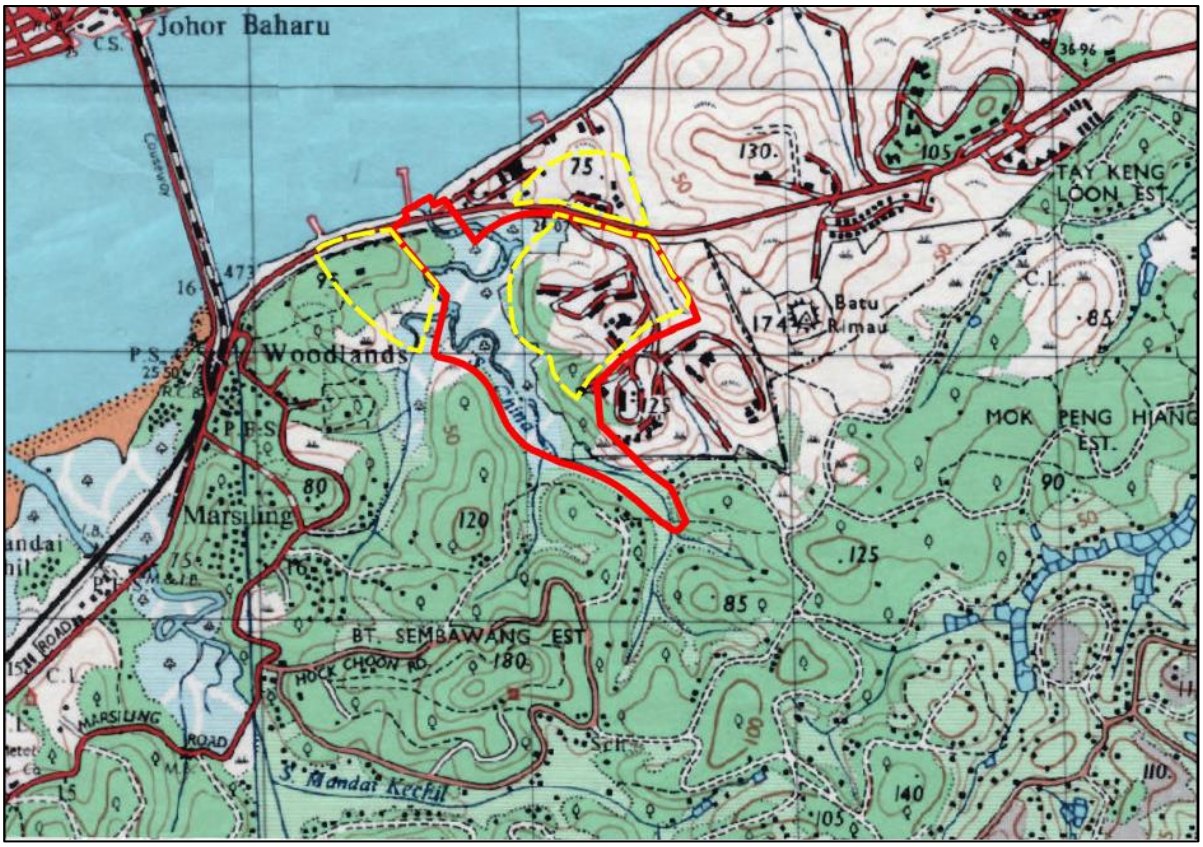


Figure 16: Historical Map from 1966 Showing Mangrove and Rubber Plantation within the Overall Study Area [MP-4]

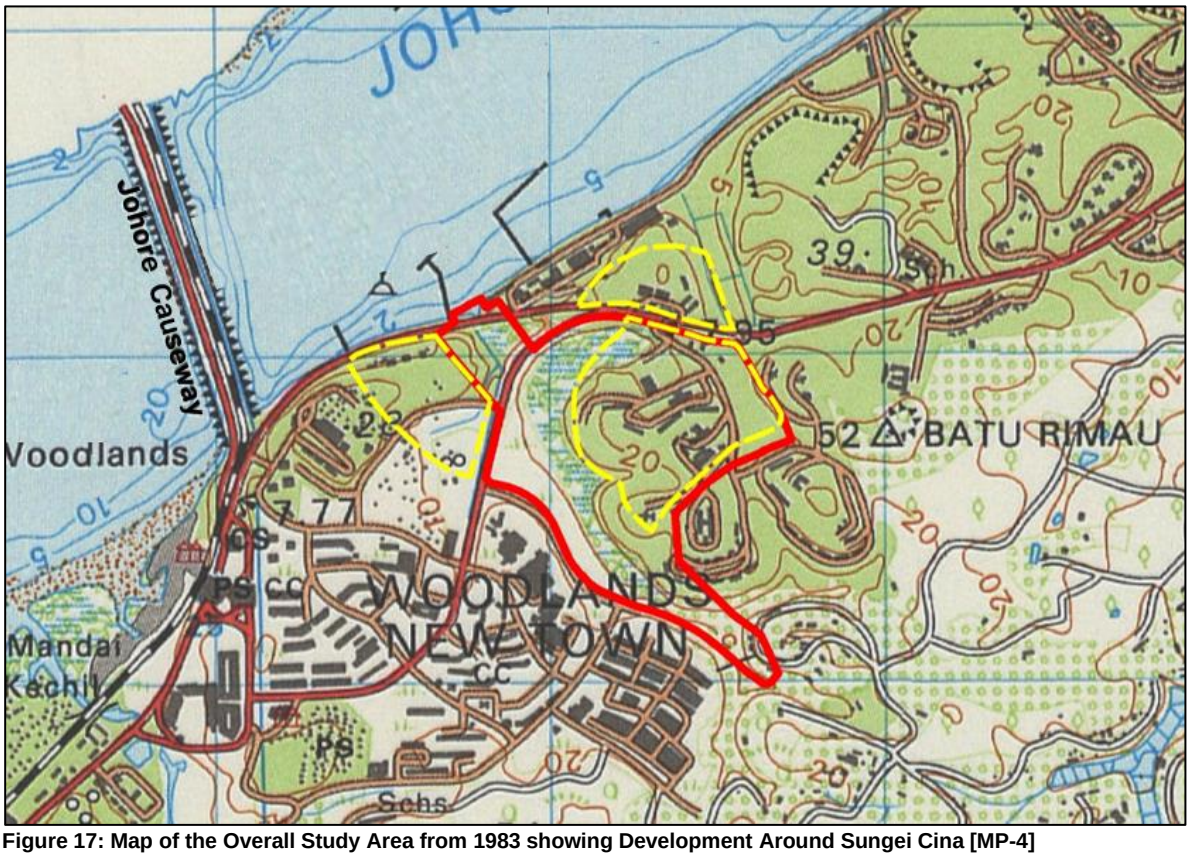


Figure 17: Map of the Overall Study Area from 1983 showing Development Around Sungei Cina [MP-4]

5.2 Current Land Use

The current land use within the core study area is identified in Figure 7 and presented in Section 3.1. It consists of the Admiralty Park in the western part, a vegetated slope and the vacated Admiralty West Prison in the eastern part, which is undergoing partial demolition. The 7-hectare (ha) urban garden in the southern part of the Admiralty Park was opened in October 2007 as one of the two complementary portions of the Park, which was soon followed by the opening of the 20 ha Nature Park in 2008. As a consequence of deforestation, the core study area contains one of the few remaining forest fragments along the northern coast of Singapore (refer to Figure 18). Part of the fragments are expected to be cleared or further fragmented by future developments (e.g., the adjacent RTS). Nevertheless, these small, fragmented forest areas remain critical for the long-term persistence of native biodiversity by serving as important corridors for ecological and biological exchanges between larger natural areas (Turner & Corlett, 1996; Pardini *et al*., 2005; McShea *et al*., 2009; Edwards *et al*., 2010).

Cumulatively, the core study area receives fairly high levels of disturbance from park visitors, surrounding urban infrastructure (roads, prison, industrial buildings etc.), and from current developments of the industrial park and RTS to the east. On 9th May 2018, vegetation clearance (<1 ha) by the Land Transport Authority (LTA) for the RTS Link was observed in the east of the core study area (refer to Figure 19). This may have influenced the fauna baseline study results in terms of fauna movement and behaviour. As the works are expected to continue, further disturbance in the form of noise, dust, light, and high human activity is expected.



Figure 18: Lack of Connectivity between the Core Study Area and Surrounding Green Spaces such as the Western and Central Catchments

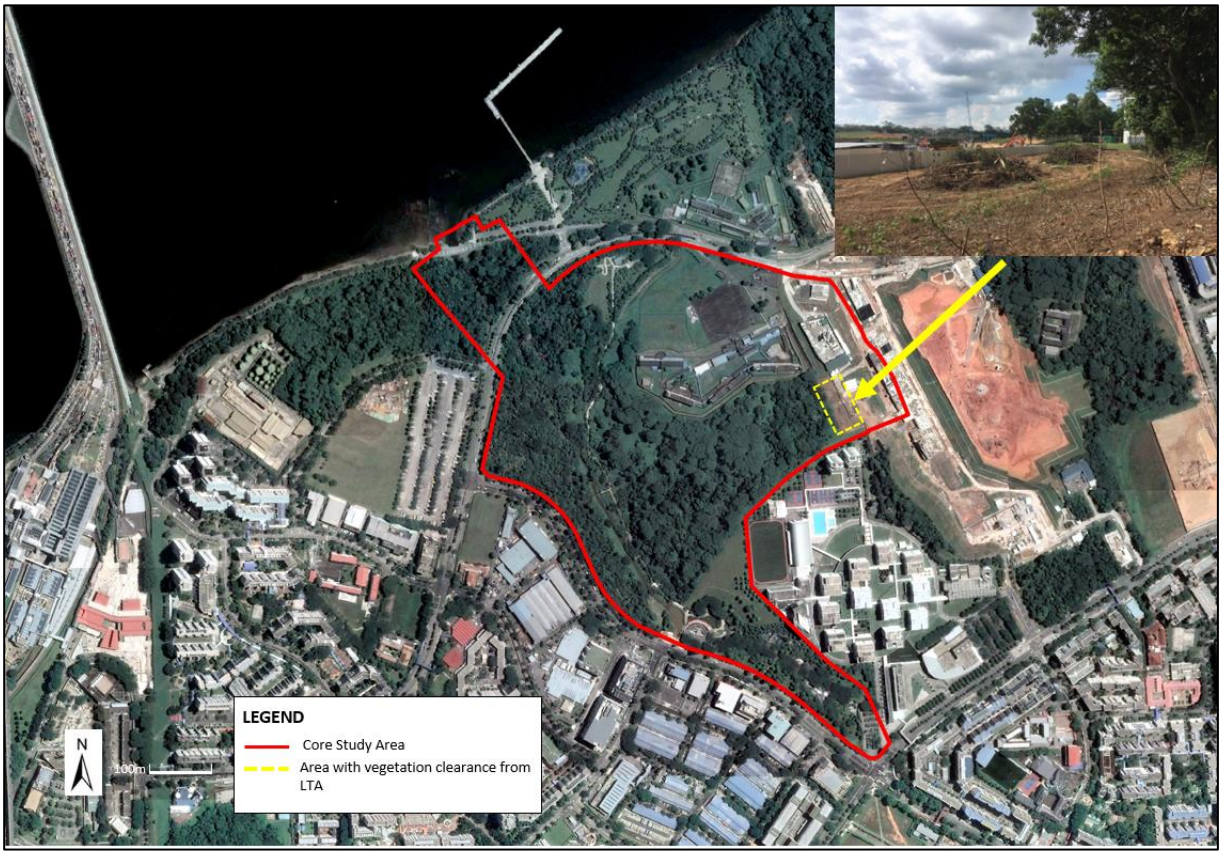


Figure 19: Vegetation Clearance within the Core Study Area due to Construction of Rail Infrastructure

5.3 Topography of the Core Study Area

AECOM engaged a surveyor to determine the topography of the core study area. The different elevations of the area are shown in Figure 20. The core study area has a hilly terrain with moderate rising slopes towards the east. In the west, where Admiralty Park lies, it is distinguished by flatter terrain. The low-lying areas within the core study area include the freshwater swamp forest near the east of Sungei Cina upstream and the mangroves patches at north of Sungei Cina, as well as the Sungei Cina that flows in the southeast-northwest direction through Admiralty Park.

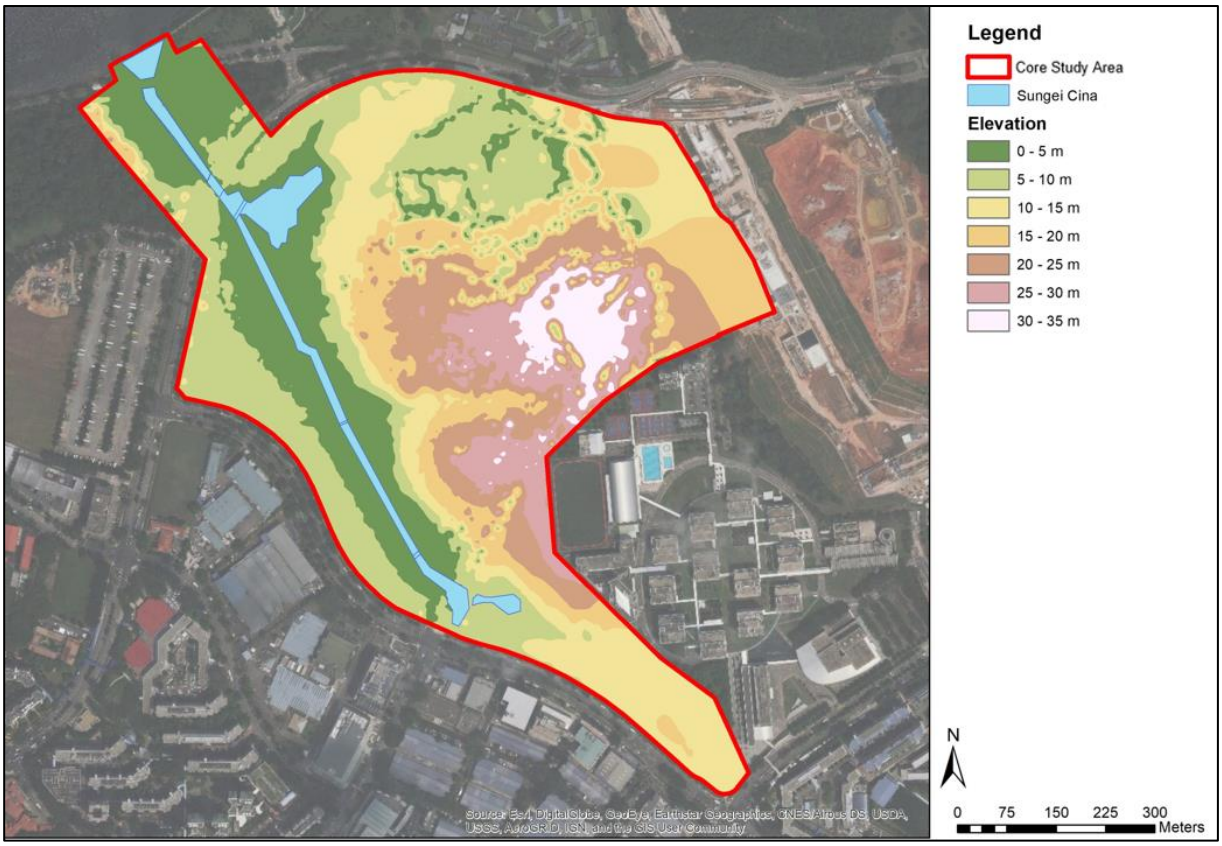


Figure 20: Topography of the Core Study Area

5.4 Geology of the Core Study Area

The core study area is primarily underlain by Bukit Timah Granite, which predominantly comprises granite, but also granodiorite, adamellite, diorite and several hybrid rocks. Unconsolidated alluvial deposits of the Kallang Formation have formed along the creeks that transect the granite bedrock. At Woodlands, the Kallang Formation consists of the Transitional Member (Kt) in the lower part of the river and the Alluvial Member (Ka) in the upper reaches of Sungei Cina.

The Transitional Member is unconsolidated black to blue-grey estuarine mud, muddy sand or sand, usually found with high organic content and peat layers. The Alluvial Member is generally unconsolidated, however lightly consolidated beds may be found and it consists of variable terrestrial sediment ranging from pebble beds through sand, muddy sand, and clay to peat. The Singapore geology map as shown in Figure 21 suggests the alluvium flanks the Sungei Cina and is approximately 100 metres wide.

A soil investigation was conducted to collect site-specific information on the geology of the site. Reference to the four bore logs (refer to Figure 118 in Section 9.2.1) constructed in the catchment indicates that the geology consists of clay overlying clayey sand (Rengam series, *A. Rahman 1993*) Based on conducted baseline study (refer to Section 9.2.1), MW1, MW2 and MW3 are located in close proximity to the Sungei Cina, whereas MW4 is located higher in the catchment, approximately 450 metres east of Sungei Cina. Interpretation of the geology in MW4 in the eastern part of the catchment as alluvium indicates the unconsolidated sediments are more widely spread than indicated on the Singapore geology map (refer to Figure 21). Each borehole was drilled to ten metres depth terminating in clayey sand indicating that the unconsolidated sand (Kranji series, marine sediments, *A. Rahman*

1993) across the catchment is in excess of ten metres deep. The depth of the sand is unknown, however *Pitt (1984)* indicates in a cross section that the thickness of the Kallang Formation is approximately 12 to 15 metres thick. Location of these boreholes are presented in Section 9.2.

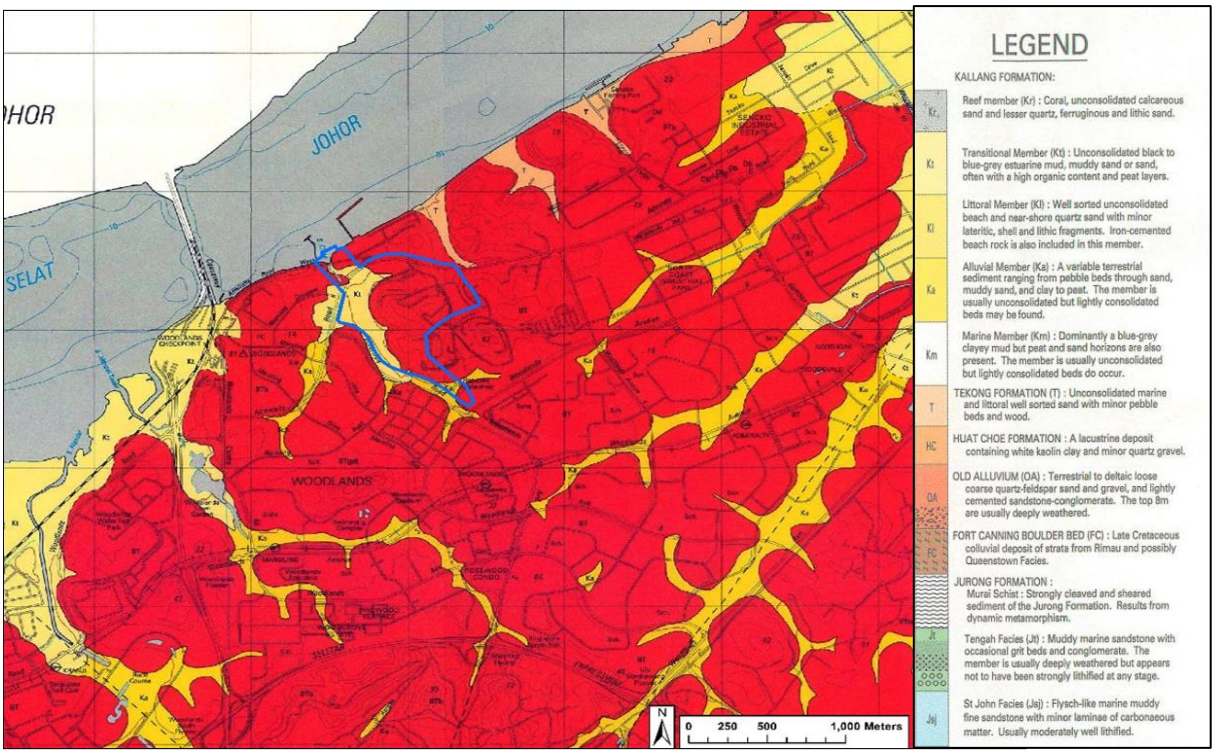


Figure 21: Geological Map of the Core Study Area

The aquatic environments within the core study area consist of estuarine and mangrove habitats, and to a smaller extent, freshwater streams and swamps (refer to Figure 22). Three distinct aquatic habitats were identified. Firstly, the tributaries within the forested area of Woodlands Waterfront Park in the north receive saltwater inundation from the mangrove at higher tides, thus forming an estuarine environment. Along Sungei Cina, a small patch (0.8-ha) of mangrove forest exists (Yang et al., 2011). This is significant because mangroves are a rare habitat in Singapore accounting for only 0.5% of Singapore's total land area (Ng & Sivasothi, 2001). Secondly, further south, a freshwater stream lies within the forested area of the future residential development area. Thirdly, there is a small patch of native-dominated freshwater swamp that occupies the Admiralty Park and is likely remnants of the freshwater swamp in the past. This habitat is rare and only covers <1% of Singapore's total land area (Yee et al., 2016).

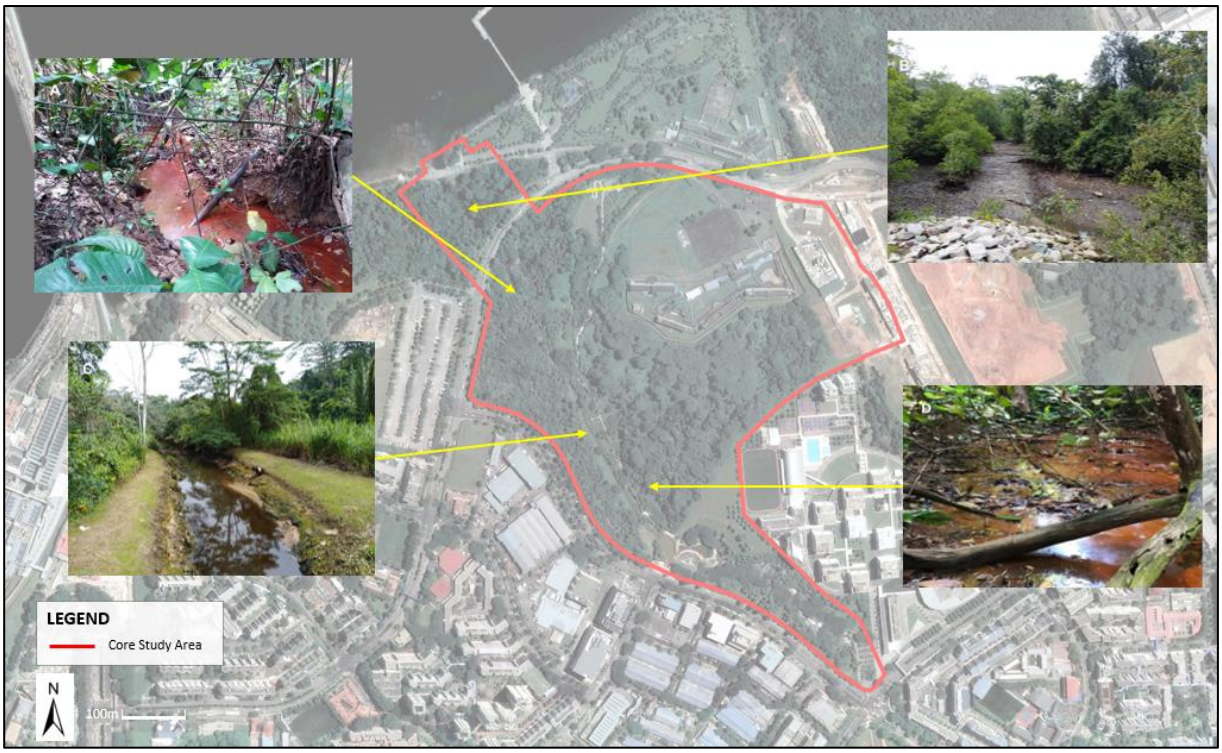


Figure 22: Aquatic Environment of the Core Study Area: Freshwater streams (A), Mangroves and Mudflats (B), Sungei Cina (C) and Swampy Areas (D)

6 EIS Approach and Methodology

This section outlines the approach and methodology followed for this EIS.

6.1 Approach

The general approach to the EIS is as follows:

- Scoping of Project, completed through an Inception Report, including:
  - Projects Overview (Section 2.0 of the Inception Report);
  - Scoping Phase (Section 3.0 of the Inception Report) including the identification and categorisation of sensitive receptors (Section 3.3 of the Inception Report) and identification of potential environmental impacts (Section 3.4 of the Inception Report);
  - Understanding the Baseline Environment (Section 4.0 of the Inception Report);
  - Proposed Impact Assessment and Evaluation Methodology (Section 5.0 of the Inception Report); and
  - Study and Deliverable Submission Schedule (Section 6.0 of the Inception Report).

- Environmental Impact Study, detailed in this report, including:
  - Data collection and analysis (Section 6.3);
  - Prediction of impacts (Section 6.4.1);
  - Impact evaluation (Section 6.4.2);
  - Recommendations of Mitigation Measures (Section 6.5); and
  - Environmental Monitoring and Management Plan (Section 6.5).

6.2 Scoping of Projects

The scoping of the projects was documented in the Inception Report submitted to HDB on the 19 March 2018.

6.2.1 Study Area

The core study area corresponds to the area that will be used for the EIS and where environmental impacts may occur due to the construction and operational footprint of the projects. The study area for this EIS is provided in Figure 7 and presented in Section 3.1.

6.2.2 Identification of Sensitivity Receptors

Sensitive receptors are those ecosystems or land uses within the study area which may potentially be impacted by the projects' construction and operational activities. Sensitive receptors are identified with reference to the location of the projects and the core study area. Based on experience of EIA and EIS projects in Singapore, environmental sensitive receptors are sub-categorised into three categories: Priority 1, Priority 2, and Priority 3 (from the most sensitive to the lowest) as shown in Table 4.

Table 4: Receptor Sensitivity Classification

Environmental Parameters	RECEPTOR SENSITIVITY		
	Priority 1 (Most Sensitive)	**Priority 2 (Sensitive)**	**Priority 3 (Least Sensitive)**
Flora and Fauna	Flora, fauna species and habitats of high ecological value [1] (i.e. conservation significant flora, fauna species and habitats; trees of conservation significance and NParks-designated heritage trees)	Flora, fauna species and habitats of moderate ecological value [1] (i.e. native species of flora, fauna and habitats)	Flora, fauna species and habitats of low ecological value [1] (i.e. exotic or cryptogenic flora, fauna and habitats; managed vegetation; and abandoned plantations)
Hydrology and Water Quality	Surface waterbodies protected and used for drinking supply, or that supports ecosystems of biodiversity conservation significance Marine waterbodies protected or used for fish farming or drinking water supply or that supports ecosystems of biodiversity conservation significance	Surface waterbodies used for industrial water supply or for recreational purposes, but are not used for drinking water purposes and do not support ecosystems of biodiversity conservation significance Marine waterbodies used for industrial water supply or for recreational purposes, or marine waterbodies with relatively high biodiversity value, but not protected and are not supporting any ecosystems of biodiversity conservation significance	Surface waterbodies not used for any purposes and are not protected Marine waterbodies not used for any purposes and are not protected
Groundwater	Sensitive groundwater (i.e. used for irrigation or drinking water, or supports ecosystems of biodiversity conservation significance)	Groundwater which may be extracted for industrial purposes but not used for irrigation or drinking water Groundwater partially supporting ecosystems of biodiversity conservation significance	Not sensitive groundwater (i.e. not extracted for any purposes or does not support any ecosystems of biodiversity conservation significance

[1] Refer to Section 7.4.1 and
for the 13 characteristics that influence the ecological value of an ecological feature. The characteristics are categorised based on the receiver of an impact (i.e., habitat or species).

6.3 Data Collection and Analysis

Collection of pre-construction environmental baseline status of the core study area was conducted both from primary sources and secondary sources.

6.3.1 Sample Collection and Survey Locations

The sample collection and survey locations were selected for baseline data collection based on their proximity to the projects and sensitive receptors. These locations were confirmed during a site reconnaissance survey.

Site visits were undertaken as follows:

Table 5: Site Visits for Data Collection

Environmental Parameter	Site Visits
Biodiversity	Site reconnaissance survey: 26 March; 2 & 6 April 2018 Fauna & flora baseline surveys: 26, 27, 28 March 2018 2–5, 9–11, 16, 17, 19, 25 & 26 April 2018 2–4, 7–11, 17, 19, 21–26 & 31 May 2018 2, 14, 16, 18, 22 & 29 June 2018 1, 4–6, 9, 10, 12, 24 & 26 July 2018 14 August 2018 8, 12, 15 & 17 October 2018 18 December 2018 Nocturnal fauna & flora baseline surveys: 30 April; 3 & 24 May; 16 June; 5 July; 13 & 17 October 2018
Hydrology and Water Quality	Site reconnaissance survey: 7 & 14 March 2018 Sampling dates: 26 & 30 April; 9 & 16 May; 1,13 & 27 June; 4, 12 & 21 September 2018
Soil and Groundwater	Site reconnaissance survey: 7 March 2018 Sampling/investigation dates: 15 to 19 May; 14 June; 31 August and 3 September 2018; 15 January 2019
Topography Survey	From 16 May to 30 June 2018

Further information on sample collection and survey locations and parameters is provided in the flora and fauna (Section 7), hydrology and water quality (Section 8) and groundwater (Section 9) sections.

6.3.2 Secondary Data Collection

Additional secondary data was collected from sources including, but not limited to, the following:

- Publicly available maps showing the historical and existing land use (e.g. National Archives of Singapore, OneMap, Street directory, Google Earth, etc.);
- Understanding of future land use by reviewing URA Master Plan 2014 and 2019;
- Aerial photographs;
- Satellite images;
- Geological maps;
- Weather Data (Rainfall); and
- Published and unpublished literature.

Further information on secondary data collection is provided in the flora and fauna (Section 7), hydrology and water quality (Section 8) and groundwater (Section 9) sections.

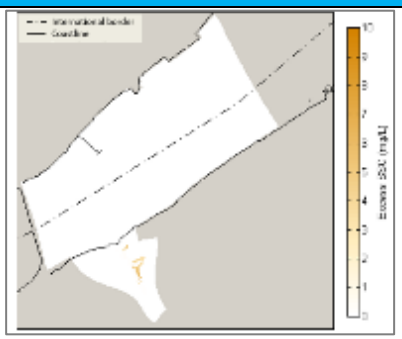
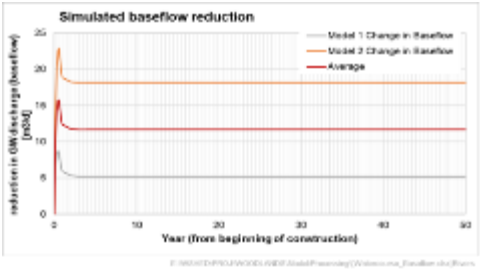
6.4 Assessment Criteria

6.4.1 Prediction of Impacts

Key potential environmental impacts arising from the projects' construction and operational activities were assessed. The methodology for the prediction of impacts is as given in Table 6.

Table 6: Methodology for Prediction of Construction and Operational Impacts

Environmental Parameter	Prediction Method for Impact Assessment	Units and Output Type
Flora and Fauna	**Qualitative** assessment to evaluate the impacts of construction and operational activities on flora and fauna within the core study area. Including floral communities, fauna species, and habitats. Identification of high conservation value areas in the core study area based on both flora and fauna survey results. Establishment of key sensitive receptors in terms of ecology & biodiversity	Technical evaluation in **Section 7** of this report
Water Quality	**Qualitative and Quantitative** assessment of impacts on the water quality of impacted waterbodies. Water quality parameters of the collected samples were compared with relevant water screening criteria.	Technical evaluation in **Section 8** of this report.
Hydrology	SWMM modelling used to simulate the hydrological conditions of the catchment within the overall study area. Delft3D modelling used to simulate the flow of water from the river to the sea to see if	Technical evaluation in **Section 8** of this report.

Environmental Parameter	Prediction Method for Impact Assessment	Units and Output Type
	there is significant impact of sediment plume on the river water and the sea.	
Groundwater	A 1-D rainfall-recharge model to estimate recharge to the local groundwater system was developed. This required daily rainfall and evaporation data, as well as an estimate of rooting depth, and available water level data and permeability tests from the soil investigation study. A 1-layer groundwater flow model, in MODFLOW, simulated groundwater conditions on the site and its surrounding area. Results from the models were used to predict the effects of the projects' construction and operational activities, in terms of the change in recharge rates due to deforestation as well as the effects of slab construction and on-going operations.	Technical evaluation in **Section 9** of this report. 

6.4.2 Impact Evaluation

Impacts are evaluated based on their significance, which is a measure of the weight that should be given to each impact in decision making and if it warrants impact management. It was assessed using the following two factors in the Impact Significance Assessment Matrix (refer to Table 10) as detailed below and in the following sections:

- **Impact Consequence**: The consequence of an impact is a function of a range of considerations including impact spread, impact duration, impact intensity and nature, legal and guideline compliance (Section 6.4.2.1);
- **Likelihood of Occurrence**: The likelihood of the impact occurring during the project construction and operational periods, which takes into account the probability of the event happening as well as duration of the event (Section 6.4.2.2).

6.4.2.1 Impact Consequence

In evaluating the consequence of environmental impacts, the following aspects were taken into consideration:

Receptor Sensitivity: categorises receptors according to their susceptibility to adverse impacts from the projects' construction and operational phases (refer to Table 4, as well as Section 7.4.1 and Table 27 for the 12 characteristics that influence the ecological value of an ecological feature).

- **Impact Intensity:** defines the magnitude of the impact and the status of the impact in relation to regulations (e.g. discharge limits), standards (e.g. environmental quality criteria) and guidelines. The criteria presented in Table 7 will be used to categorise the impact intensity.

Table 7: Intensity Criteria to Assess the Environmental Impact Consequence

Environmental Parameters	Impact Intensity			
	Negligible Intensity	Low Intensity	Medium Intensity	High Intensity
Flora and Fauna	N.A.	Potential impacts last a short duration, are reversible and of a small magnitude for an area with low ecological value.	Potential impacts last for a moderate duration, are reversible with significant input and compensatory measures, and of a moderate magnitude for an area with moderate ecological value.	Potential impacts last for a long time, are non-reversible, and of a significant magnitude for an area with high ecological value.
Hydrology	Very minor change to existing hydrology and flow.	Small scale localised changes to existing hydrology or flow.	Medium scale changes to existing hydrology or peak flow.	Major changes to existing hydrology or peak flow.
Water Quality	No contamination; or likely to be well within regulatory limits.	Small scale localised contamination likely to be within regulatory limits.	Medium scale contamination likely to just exceed regulatory limits.	Large scale contamination highly likely to exceed regulatory limits.
Groundwater	None of the construction and operational activities identified will cause groundwater impacts on site.	Small scale localised groundwater impacts which is not likely to extend beyond the projects site and possible to remediate.	Medium scale groundwater impacts which is likely to extend beyond the projects site but possible to remediate within a reasonable period timeframe.	Large scale groundwater impacts which is likely to extend beyond the projects site and may require large scale remediation.

A consequence category is then derived based on receptor sensitivity and impact intensity, as shown in Table 8.

Table 8: Impact Consequence Matrix

Receptor Sensitivity / Impact Intensity	Priority 3 (least sensitive)	Priority 2	Priority 1 (most sensitive)
Negligible	Imperceptible	Imperceptible	Low
Low	Imperceptible	Low	Low
Medium	Low	Medium	Medium
High	Low	High	High

6.4.2.2 Likelihood of Occurrence

Likelihood is estimated on the basis of experience and/or evidence that such an outcome has previously occurred. Impacts resulting from routine/planned events (normal operations) are classified under high likelihood. The likelihood of the identified impacts occurring has been ascribed using the following qualitative scale of probability categories (in increasing order of likelihood) as shown in Table 9.

Table 9: Criteria for Likelihood of Occurrence of an Impact

Likelihood Criteria	Definition
Unlikely	Not expected to occur during construction or operational activities
Low	Will rarely occur during construction or operational activities
Medium	Will occasionally occur during construction or operational activities
High	Will occur on a regular basis during construction or operational activities

6.4.2.3 Significance of Impact

The significance of each impact is determined by assessing the impact consequence against the likelihood of the impact occurring using the Impact Significance Assessment Matrix as shown in Table 10 and summarised in Figure 23.

Table 10: Risk-based Matrix Determining Impact Significance

Consequence / Likelihood	Imperceptible	Low	Medium	High
Unlikely	Negligible	Negligible	Minor	Minor
Low	Negligible	Minor	Minor	Moderate
Medium	Minor	Minor	Moderate	Major
High	Minor	Moderate	Major	Major

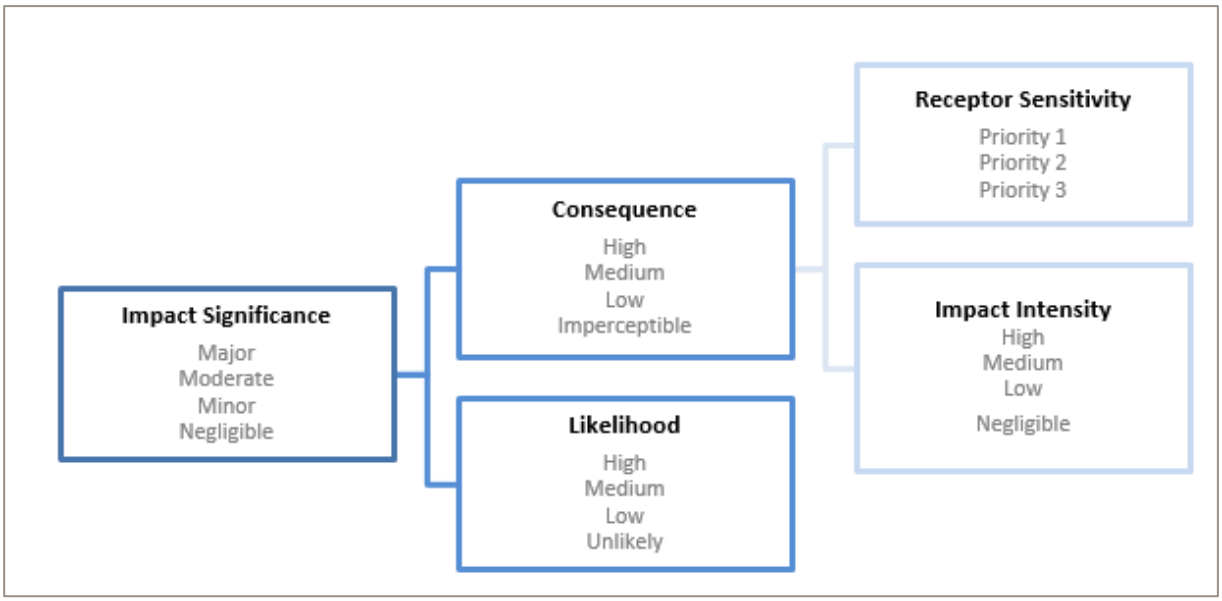


Figure 23: Flow Chart Summarising the Factors Influencing the Impact Significance Assessment of a Project

Positive impacts were not assessed for significance. Impacts assessed as negligible or minor require no additional management or mitigation measures (on the basis that the magnitude of the impact is sufficiently small, or that the receptor was of low sensitivity and/or that adequate minimum controls were already included in the project design). Negligible and minor impacts are therefore deemed to be “Insignificant”. Major impacts are deemed to be “Significant” and moderate impact as “Relatively Significant”. Impacts evaluated as moderate or major require the adoption of management or mitigation measures (refer to Section 6.5).

6.5 Mitigation, Monitoring and Management

Where construction or operational impacts are considered as being significant (moderate to major impacts), project-specific mitigation measures, in consultation with HDB, have been proposed. Mitigation measures have been proposed in accordance with the following principles:

- **Elimination** - Where changes to the project design, construction methodology, operational activities can be made to eliminate an identified impact.
- **Substitution** - Where changes to the project design, construction methodology, operational activities cannot be made to eliminate identified impacts, compensatory measures can be adopted to mitigate identified impacts.
- **Engineering controls** - Where changes to the project design, construction methodology, operational activities cannot be made to eliminate or minimise identified impacts , engineering controls can be adopted to mitigate identified impacts.
- **Administrative controls** - Where applicable, enhanced mitigation can be achieved by applying administrative controls on top of engineering controls. An “acceptable level” is the reduction of a major impact to an insignificant impact or to a level that is as low as reasonably practicable (ALARP). It will not always be practical to reduce major and moderate impacts to minor ones in consideration of the cost-ineffectiveness of such an approach (due to the diminishing return of a reduction of impact versus cost). Residual impact assessment shall be conducted for those parameters where impact from the activity is identified to be significant and additional mitigation measures are recommended. Positive impacts were not assessed for significance. Assessment of residual impact shall follow similar risk approach as outlined above.

An Environmental Monitoring and Management Program (EMMP) has been prepared in this EIS for the elements which are being impacted by the projects’ activity during the construction phase, specifying the monitoring requirements and outlining the project organisation. The basis of EMMP is provided in each respective section (Section 7.8 for flora and fauna, Section 8.8 for hydrology and water quality and Section 9.6 for groundwater).

7 Flora and Fauna Impact Assessment

7.1 Introduction

This section presents an inventory of the flora and fauna species inhabiting the core study area and their patterns of distribution. This baseline data was used to carry out the impact assessment, determine the significance of impacts and propose measures to mitigate any significant adverse impacts to biodiversity.

7.2 Baseline Assessment Methodology

The methodology included flora and fauna baseline surveys comprising a desktop assessment and field assessment for both flora and fauna. The desktop assessment consisted of researching the site's history, creating a list of fauna species of probable occurrence, and identifying flora and fauna species of conservation significance. The field assessment included conducting field surveys for flora and targeted fauna groups.

The aims of the flora and fauna baseline surveys were to:

- Conduct a desktop assessment to obtain publicly available historical references and biodiversity records from the core study area and surrounding areas;
- Identify, describe and map vegetation types present within the core study area, particularly those that are of conservation significance;
- Compile a biodiversity inventory and generate spatial distribution maps on vegetation, habitats and species of conservation significance for the core study area;
- Survey, document and map targeted terrestrial and aquatic flora and fauna, including vascular plants (ferns to flowering plants), odonates (dragonflies and damselflies), butterflies, herpetofauna (amphibians and reptiles), birds, mammals, fishes, decapod crustaceans, and molluscs.
- Indicate species of conservation significance based on the relevant authorities' recommendations such as the IUCN Red List, Singapore Red Data Book (2008) and published literature; and
- Verify tree species and the locations of large and significant trees of high retention value.

7.2.1 Personnel

The assessment and field work were conducted by the following personnel:

- Ms. Boo Chih Min (B.Sc. Hons.), Uvaria Tide
- Mr. Derek Yap (B.Sc. Hons.), Camphora Pte Ltd
- Mr. Sim Eng Koon (B.Sc.), Camphora Pte Ltd
- Mr. Jeb Yeo (B.Sc.), Camphora Pte Ltd
- Mr. Richard Boo Chee Siong, Camphora Pte Ltd
- Dr. Alex Figueroa (Ph.D.), Camphora Pte Ltd
- Ms. Joys Tan (B.Sc. Hons.), Camphora Pte Ltd
- Ms. Bronwyn Tan (MLA), Camphora Pte Ltd
- Ms. Chloe Tan (B.Sc. Hons.), Camphora Pte Ltd
- Ms. Sheryl Seet (B.Sc. Hons.), Camphora Pte Ltd
- Ms. Joan Lee (B.Sc. Hons.), Camphora Pte Ltd
- Ms. Mun Mei Cheng (B.Sc. Hons.), EkoTree LLP
- Mr. Tang Hung Bun
- Mr. Gan Cheong-Weei

- Mr. Lim Kim Seng

7.2.2 Desktop Assessment

The desktop assessment involved literature review of historical and present-day information on the core study area. This allowed for the generation of a preliminary vegetation map, and a list of fauna species that may potentially exist in the core study area (*species of probable occurrence*). This list of *species of probable occurrence* took into account faunal species previously documented within and around a 2 km radius of the core study area and suspected to occur based on habitats present and species distributions within Singapore. It was completed by reviewing online databases, existing literature, technical reports, and consulting specialists. In addition, species of conservation significance were highlighted. The vegetation map and list of *species of probable occurrence* were subsequently verified and updated through field assessment.

The main references of information were:

- Online databases:
    A. Digital Nature Archive of Singapore (Lee Kong Chian Natural History Museum; http://lkcnhm.nus.edu.sg/dna/)
    B. Flora and Fauna Web and Plants of Southeast Asia (http://www.asianplant.net
    C. Information on land use history was primarily retrieved from old maps archived in The National Archives of Singapore (NAS) online collection (http://www.nas.gov.sg/archivesonline/) and the Historical Map portals in OneMap (http://hm.onemap.sg/ and https://ohm.onemap.sg/#/index/main).
    D. National Parks Board's Flora and Fauna Web (https://florafaunaweb.nparks.gov.sg)
- Published and Unpublished Literature:
    - Baker N & Lim KKP (2012) Wild Animals of Singapore: A Photographic Guide to Mammals, Reptiles, Amphibians and Freshwater Fishes. Draco Pub and Distribution, Singapore.
    - Boo CM (1996) A Study of Secondary Forest in Singapore. Unpublished Honours thesis, Department of Botany, National University of Singapore.
    - Chong KY, Tan HTW & Corlett RT (2009) A Checklist of the Total Vascular Plant Flora of Singapore Native, Naturalised and Cultivated Species. Raffles Museum of Biodiversity Research, National University of Singapore.
    - Davison GWH, Ng PKL & Ho HC (2008) *The Singapore Red Data Book: Threatened Plants and Animals of Singapore*. 2nd edition. Nature Society (Singapore), Singapore.
    - Ho JK, Ramchunder SJ, Memory A, Theng M, Li T, Clews E, Cai Y, Tan HH, & Yeo DC (2016) A Guide to the Freshwater Fauna of Nee Soon Swamp Forest. Lee Kong Chian Natural History Museum & Tropical Marine Science Institute, National University of Singapore.
    - Keng H (2003) Orders and Families of Malayan Seed Plants. Singapore University Press, National University of Singapore.
    - Khew SK (2015) A Field Guide to the Butterflies of Singapore (2nd edition). Ink Communications Pte Ltd, Singapore.
    - Kottelat, M. (2013). The fishes of the inland waters of southeast Asia: a catalogue and core bibliography of the fishes known to occur in freshwaters, mangroves and estuaries. Raffles Bulletin of Zoology.
    - NParks Biodiversity Centre (2006) Biodiversity assessment of Sungei Cina (Woodlands) Mangrove. Unpublished paper, Natural Areas Survey Team, Biodiversity Centre, National Parks Board.

- Neo L, Yee ATK, Chong KY, Kee CY & Tan, HTW (2013) The Vascular Plant Flora of Admiralty Forest, Singapore. Nature in Singapore 6, 61–72.
- Ng PK, Corlett RT & Tan HT (2011) Singapore Biodiversity: An Encyclopaedia of the Natural Environment and Sustainable Development. Singapore: Raffles Museum of Biodiversity Research.
- Tang HB, Wang LK, Hämäinen M (2010) A Photographic Guide to the Dragonflies of Singapore. Raffles Museum of Biodiversity Research, Singapore.
- Yong DL, Lim KC & Lee TK (2016) A Naturalist's Guide to the Birds of Singapore (2nd edition). John Beaufoy Publishing, United States.

7.2.3 Nomenclature and Taxonomy

Nomenclature and taxonomy in this report follows the respective references listed in Table 11.

Table 11: References Examined for Taxonomy and Nomenclature of Flora and the Various Fauna Groups

Group	Reference
Flora	• Boo CM (1996) A study of secondary forest in Singapore. Unpublished Honours thesis, Department of Botany, National University of Singapore, Singapore. • Chong KY, Tan HTW & Corlett RT (2009) A checklist of the total vascular plant flora of Singapore. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore. • Davison GWH, Ng PKL & Ho HD (2008) The Singapore red data book (2nd Edition). Nature Society (Singapore), Singapore. • Keng H (1990) The concise flora of Singapore. Singapore University Press, National University of Singapore, Singapore. • Keng H (2003) Orders and families of Malayan seed plants. Singapore University Press, National University of Singapore, Singapore. • The Plant List: A working list of all plant species. http://www.theplantlist.org
Odonates	Tang HB, Wang LK & Hamalainen M (2010) A photographic guide to the dragonflies of Singapore. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore.
Butterflies	Khew SK (2015) A field guide to the butterflies of Singapore (2nd edition). Ink Communications Pte. Ltd., Singapore.
Fishes	Kottelat M (2013) The fishes of the inland waters of Southeast Asia: A catalogue and core bibliography of the fishes known to occur in freshwaters, mangroves and estuaries. The Raffles Bulletin of Zoology, 27: 1–665.
Crustaceans	Tan CGS and Ng PKL (1994) An annotated checklist of mangrove brachuran crabs from Malaysia and Singapore. Hydrobiologia, 285, pp. 75-84.
Molluscs	WoRMS Editorial Board (2018). World Register of Marine Species. http://www.marinespecies.org at VLIZ.
Amphibians & Reptiles	Baker N & Lim KKP (2012) Wild animals of Singapore: A photographic guide to mammals, reptiles, amphibians and freshwater fishes (2nd edition). Draco Pub and Distribution, Singapore.
Birds	Gill F & Donsker D (2017) IOC World Bird List (v 7.2).
Mammals	Baker N & Lim KKP (2012) Wild animals of Singapore: A photographic guide to mammals, reptiles, amphibians and freshwater fishes (2nd edition). Draco Pub and Distribution, Singapore.

7.2.4 Native Status

The native status for flora and fauna were categorized as native, non-native or cryptogenic (refer to Table 12). In addition, non-native flora species were further classified into casual, naturalised and invasive species, and specific for plants, cultivated. Non-native fauna species that are considered invasive were also mentioned.

Table 12: List and Definitions of Native Status Terms

Native Status	Definition
Native	Naturally-occurring species maintaining self-sustaining populations
Non-native	Species existing outside of its natural range
Invasive	Non-native species that bears negative impacts in new environment
Cryptogenic	Species with unknown origin
Non-native Species Categories for Flora (adapted from Chong et al., 2009)	
Casual	Non-native species that do not maintain self-sustaining populations
Naturalised	Non-native species that maintain self-sustaining populations
Cultivated	Species not naturally found in the wild that is produced and maintained by horticultural techniques

7.2.5 Species of Conservation Significance

The assessment of conservation significance of species is important for highlighting the need and priorities for their conservation. Species of conservation significance are often rare, elusive, and/or seasonal in activity, resulting in low detectability. Therefore, it is important to account for species of conservation significance that may occur at the core study area in the impact assessment because they likely will go undetected during the surveys. Both global and local conservation statuses were considered to provide a more holistic picture of the conservation value of the core study area.

The global conservation status for flora and fauna follow the International Union for Conservation of Nature, & Natural Resources Red list (IUCN; IUCN, 2012). The local conservation status for fauna follows mainly the Singapore Red Data Book (SRDB; Davison et al., 2008) (refer to Table 13) with reference to updated local checklists where available (e.g. Odonata checklist by Ngiam & Choong, 2016). Similarly, for flora, the local conservation status follows a local checklist (Chong et al., 2012). These local checklists are used as they provide updated statuses from the Singapore Red Data Book. Only threatened species with status of “vulnerable” or higher were included as species of conservation significance (i.e., near-threatened species were excluded). For the vascular plant species, it was assessed using only the local status (Chong et al., 2009) as it is deemed more relevant in a local and development context.

Table 13: List of Global and Local Conservation Statuses for Species as Conservation Significance

Conservation Status	Definition
Global – ICUN Red List	
Vulnerable (VU)	Species facing a high risk of extinction in the wild.
Endangered (EN)	Species facing a very high risk of extinction in the wild.
Critically Endangered (CR)	Species facing an extremely high risk of extinction in the wild.
Extinct in the Wild (NW)	Species that only survives through cultivation, captivity or as a naturalized population(s) outside its natural range.
Extinct (EX)	Globally extinct, including in captivity or through cultivation.
Local – Singapore Red Data Book	
Vulnerable (VU)	Species with <1,000 mature individuals and >250 total individuals.
Endangered (EN)	Species with <250 mature individuals.
Critically Endangered (CR)	Species with <50 mature individuals or <250 total individuals.
Presumed Nationally Extinct (NE)	Flora and fauna not recorded within the last 30 and 50 years, respectively.
Globally Extinct (EX)	Globally extinct, including in captivity or through cultivation.

7.2.6 Flora Field Assessment

The flora field assessment was conducted using both exploratory transects and plot sampling. Exploratory transects offer a means of covering a larger area to document a greater diversity of species; whereas, plot sampling allows for assessing the regeneration trajectory of the forest. A differential GPS handheld data collector (dGPS; Trimble Geo 7X) was used to trace and verify the extent of the different vegetation types within the core study area, supplemented with photos. Based on the field assessment, an inventory list of all vascular plant species within the core study area was generated. A specific site visit was conducted for vegetation mapping within the Admiralty West Prison area.

Where species identification was difficult or could not be concluded on site, plant materials were collected where necessary for verification with the Singapore Herbarium. In cases where there were plenty of the same species of conservation status at a particular area, the range of distribution of the species were noted.

7.2.6.1 Exploratory Transects

Exploratory transects were conducted by systematically walking the core study area to cover the entire site (refer to Figure 24). During the survey, opportunistic sightings and locations of plant species of conservation significance were recorded. In addition, individuals (or representative individuals within clusters) of plant species of conservation significance were mapped.

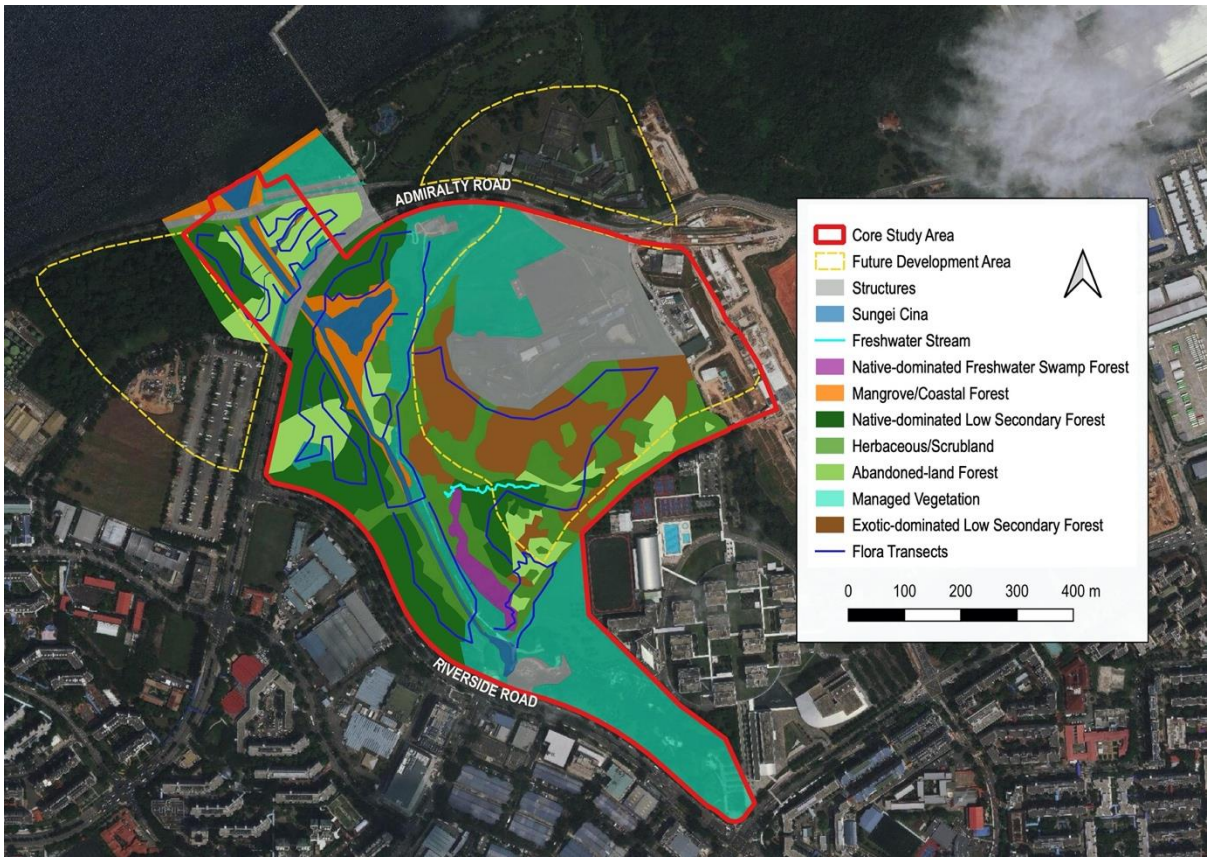


Figure 24: Systematic Exploratory Transects for Record of Opportunistic Sightings of Plants

7.2.6.2 Plot Sampling

Plot sampling was conducted to record floristic presence, characterise forest type and capture recruitment of tree species within the core study area. It involved identifying every plant present within each plot and counting all trees with girth ≥ 5 cm, measured at 1.0 m above ground level. A total of 12 20 x 20 m sampling plots were identified; they are situated at least 60 m apart and at least 30 m from the forest edge (refer to Figure 25). The size of the sampling plots (20 m by 20 m) follows that in Chua et al., 2013 to provide standardised comparison for regeneration analysis. A total of 12 plots were selected to cover all forest types within the core study area. The plot locations were distributed across the site and adjusted on site to capture different habitat types or areas deemed of higher value. No sampling plot was placed within the native-dominated freshwater swamp forest due to the steep terrain.

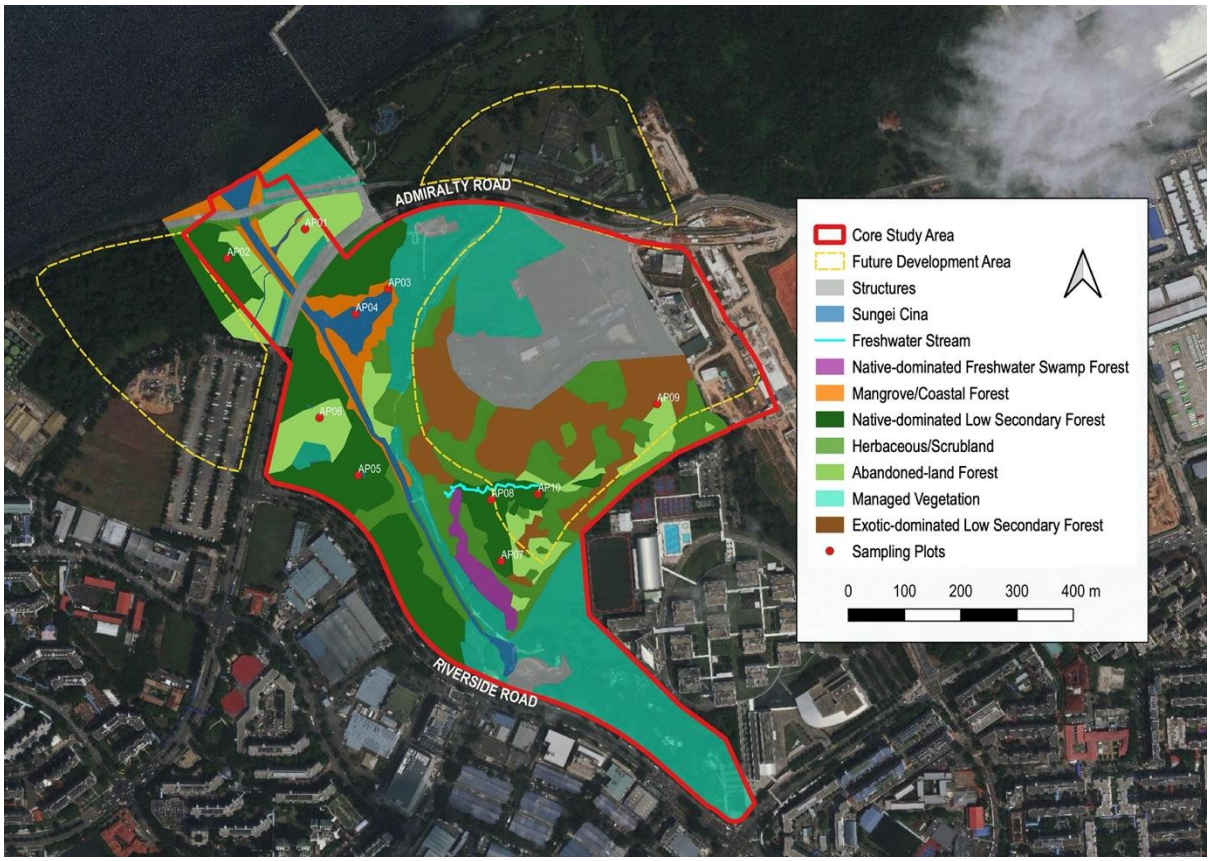


Figure 25: Locations of the Flora Sampling Plots

7.2.6.3 Tree Mapping and Arboriculture Assessment

Large trees and palms serve as the cornerstone of forest ecosystems. Large, old trees evince late successional forest and achieve a number of ecological functions, such as influencing microclimatic and hydrological regimes, storing large volumes of carbon, as well as, creating numerous environmental niches for a large suite of flora and fauna (Willson, 1974; Parker, 1995; Laurance & Bierregaard, 1997). In addition, native tree species have the potential to accelerate biodiversity recovery and enhance natural regeneration, creating a self-sustaining forest ecosystem (Tucker & Murphy, 1997).

Within the core study area, the land occupied by Admiralty Park will be maintained as an urban park in the future. On the other hand, the area designated as the residential development site will be developed in the coming years. Therefore, a more detailed assessment was recommended for the latter, which entails both tree assessment and tree tagging. For the future residential development site, all large trees and palms with girth ≥ 1.0 m and all trees of conservation significance with girth ≥ 0.3 m were tagged using laminated cards and nails and assessed using the Safe Useful Life Expectancy (SULE) method. For the area outside the future residential development site, all large trees and palms with girth ≥ 1.5 m and all trees of conservation significance with girth ≥ 0.3 m were mapped and assessed using the SULE method but were not tagged. The SULE method measures the tree's health and structure by determining the tree's age and observing for signs of damage, decay and asymmetry in canopy structure that may compromise longevity and stability (Barrell, 1993). For the mapping and assessment of each tree, the following parameters were recorded – species, biodata (girth and height), location, photos, and significant ecological function (if any). Tree mapping and arboriculture assessment were not conducted for the Admiralty West Prison.

7.2.6.4 Vegetation Types in Singapore

A map of the core study area's vegetation types was created by mapping the vegetation type boundaries collected with the dGPS onto satellite images from Google Maps v.9.61.1 (Google Inc., 2017). The vegetation types in Singapore are divided into four categories (refer to Table 14):

- Primary vegetation: vegetation that has never been cleared or removed and has been occupying the site continuously for thousands of years;
- Secondary vegetation: vegetation that succeeds on the site where clearance or removal has been made by nature or mankind (Corlett, 1994);
- Coastal vegetation: vegetation found growing at the edge of the sea; and
- Managed vegetation: comprises roadside plantings, public parks, gardens, golf courses and farms.

Table 14: Classification of Vegetation Types Encountered in Singapore (largely based on Yee et al, 2016)

	Classification of vegetation types	Description	Vegetation type[1]	Dominant species
Primary Forest			Primary lowland dipterocarp forest	*Shorea macroptera, Shorea leprosula, Shorea ovalis, Shorea parvifolia, Dipterocarpus grandifolius*
			Primary hill dipterocarp forest	*Shorea curtisii, Dipterocarpus caudatus* ssp. *penangianus*
			Primary freshwater swamp forest	Plants with adaptation like stilt roots, prop roots or breathing roots. E.g., *Palaquium xanthochymum, Xylopia fusca, Salacca conferta*
Secondary Forest (Inland) – at different successional stages	**Native-dominated secondary forests** (Developed on land cleared before the 1950s. Dominated by native plant species)	Developed from the early successional forest and contains higher plant species richness. *Alstonia*, *Calophyllum*, *Campnosperma*, *Elaeocarpus*, *Garcinia*, *Litsea*, *Rhodamnia,* and *Syzygium* are common genera found in the canopy layer. *Anisophyllea disticha* and *Agrostistachys borneensis* are common treelets found in the understorey.	Native-dominated tall secondary forest	*Adinandra dumosa, Rhodamnia cinerea, Calophyllum* species, *Garcinia parvifolia, Cyathocalyx* species, *Xylopia* species, *Litsea* species, *Lindera lucida, Timonius wallichianus, Porterandia anisophyllea, Archidendron clypearia, Macaranga* species, *Elaeocarpus* species
		Dominated by native pioneer tree genera such as *Adinandra*, *Macaranga*, *Mallotus*, and *Trema*.	Native-dominated short secondary forest (native low secondary forest)	*Adinandra dumosa, Eriachne pallescens, Gahnia tristis, Dicranopteris linearis, Lycopodiella cernua, Dillenia suffruticosa, Cyrtophyllum*

	Classification of vegetation types	Description	Vegetation type[1]	Dominant species
				fragrans, Morella esculenta, Ploairium alternifolium, Rhodamnia cinerea, Rhodomyrtus tomentosa, Nepenthes spp*., Macaranga heynei, Vitex pinnata, Melastoma malabathricum, Syzygium lineatum, Arthrophyllum diversifolium, Syzygium zeylanicum, Ficus grossularioides*
	Waste-woodlands (Developed on land cleared after the 1960s)	Dominated by exotic plant species with high propagule pressure in surrounding landscape (e.g., *Acacia auriculiformis*, *Falcataria moluccana*, *Leucaena leucocephala*).	Exotic-dominated secondary forest	*Acacia auriculiformis, Falcataria molucana, Spathodea campanulata*
	Abandoned-land forests (Developed from abandoned plantations or kampung with mature trees largely left intact. Dominated by exotic plant species.)	Abandoned plantation: Developed from abandoned plantation, usually dominated by rubber (*Hevea brasiliensis*). Abandoned kampung or orchard: Developed from abandoned kampung or orchard, usually dominated by fruit trees (e.g., *Durio zibethinus*, *Nephelium lappaceum*) or ornamental plants (e.g., *Spathodea campanulata*, *Aglaonema commutatum*, *Dieffenbachia seguine*, *Heliconia* spp.).	Woodlands of abandoned plantation/ kampong	Remnant of planted fruit trees such as *Nephelium lappaceum, Lansium domesticum, Artocarpus* species*, Durio zebethinus, Musa* species etc; Crops such as *Hevea brasiliensis, Theobroma cacao* and *Elaeis guineensis*.
			Scrubland vegetation	*Dillenia suffruticosa, Melastoma malabathricum, Trema* spp*., Lantana camara etc.* (sometimes with scattered trees, e.g., *Falcataria molucana, Acacia auriculiformis, Leucanena leucocephala)*
			Herbaceous vegetation	*Imperata cylindrica, Panicum maximum, Urochloa mutica,* etc. (sometimes with scattered trees, e.g., *Falcataria*

	Classification of vegetation types	Description	Vegetation type[1]	Dominant species
				molucana, Acacia auriculiformis, Leucanena leucocephala, Mimosa pigra)
Coastal vegetation			Mangrove forest	Mangrove and mangrove associates
			Back mangrove forest	*Bruguiera* species*, Ceriops* species*, Xylocarpus* species*, Heritiera littorale*
			Sandy beach vegetation	*Ipomoea pes-caprae, Barringtonia asiatica, Casuarina equisetifolia, Cerbera odollam, Terminalia catappa, Taliparitiliaceum, Scaevola taccada, Peltophorum pterocarpum*
Managed vegetation			Managed vegetation (parks, gardens, roadside, etc.)	Exotic species and commercially available native species.

[1] (Camphora PL classification)

Note: All the categories are old growth (i.e., primary forests), or vegetation with spontaneous regrowth, except for the category “managed vegetation”.

7.2.6.5 Data Analyses

7.2.6.5.1 Species Richness and Survey Adequacy

To estimate the adequacy of the plot sampling in capturing the total number of species, a species accumulation curve was constructed using the function *specaccum* in the *vegan* package v.2.4-4 (Oksanen et al., 2013) in R v.3.4.3 (R Development Core Team, 2016). The species accumulation curve displays the rate of new species discoveries with increasing number of plots (Colwell et al., 2004). To estimate species richness from the plot data, the *specpool* function of *vegan* was used. This package returns the extrapolated incidence-based estimates and standard errors based on four popular non-parametric estimators – Chao, first-order Jackknife (Jack1), second-order Jackknife (Jack2) and Bootstrap (Boot). The standard error of Jack2 is not evaluated in *specpool* (Oksanen, 2018). These estimators derive the minimum species richness based on the frequencies of species in the assemblage. Chao suggests that there are no additional species when all species have been represented by at least two individuals. Jackknife is based on the idea that as many species were missed as the number of species observed only once (Oksanen, 2018). Bootstrap suggests that repeated sampling from the same data results in the same number of species missed originally (Oksanen, 2018). The estimators are calculated using the following formulae:

Chao *S_P = S_O + a1^2/(2*a2)*
Jack1 *S_P = S_O + a1*(N-1)/N*
Jack2 *S_P = S_O + a1*(2*n-3)/n – a2*(n-2)^2/n/(n-1)*
Boot S_P = S_O + Sum (1-p_i)^N

Where, *S_P* is the extrapolated richness, *S_O* is the observed species richness, *a1* and *a2* are the number of species occurring only in one or two sampling occasions, *p_i* is the frequency of species *I*, and *N* is the number of sampling occasions.

7.2.6.5.2 Forest Character Using NMDS

To determine if species composition of the core study area differs greatly from primary and mature secondary forests in the Central Catchment Nature Reserve (CCNR), nonmetric dimensional scaling ordination (NMDS) with Bray-Curtis dissimilarity index (Clarke, 1993) was performed in R v.3.4.3 (R Development Core Team, 2016). Data for CCNR was taken from Chua et al. (2013b) and consists of three primary forest plots, three tall native secondary forest plots and three short native secondary forest plots. Plot size from the extract dataset was slightly bigger than the core study area (442 m^2 vs. 400 m^2). To ensure data compatibility, only trees larger than 1.6 cm dbh from the CCNR dataset was used in the analysis.

7.2.6.5.3 Forest Regeneration

Regeneration analysis was conducted to provide an overview of the successional trajectory and recruitment status of the forest based on data collected from the 12 sampling plots. Regenerating status of forest in the core study area was assessed by graphing stem count vs. size classes using the top ten ranking tree species by stem abundance in the sampling plots and ranking their size class distribution using dbh. Presence of a reverse J-curve for a species indicates that it has a large number of small-sized individuals and is recruiting into the community.

7.2.6.5.4 Aboveground biomass

Atmospheric carbon sequestered and stored in trees are referred to as biomass. In forests, the five carbon pools are namely the aboveground biomass, belowground biomass (or root biomass), woody debris, litter, and soil organic matter (Eggleston et al., 2006). Aboveground biomass constitutes the major portion of the carbon pool; therefore, any changes in forest land-use will have a significant impact on its overall carbon stocks.

Estimating the amount of aboveground biomass accumulated in a forest allows stakeholders to assess the productivity of the forest, the potential amount of carbon that can be released into the atmosphere when the forest is cleared, and the derived economic value of ecosystem services provided by the forest.

Dataset used for aboveground biomass (AGB) estimation is derived from the inventory of large significant trees with dbh ≥ 30 cm. AGB of each tree was calculated using Chave et al.'s (2005) allometric equation for moist tropical forest:

$$AGB = \rho \times \exp(-1.499 + 2.148 \ln(dbh) + 0.207 (\ln(dbh))^2 – 0.0281 (\ln(dbh))^3);$$

where ρ is the wood density of the species being measured in gcm^{-1}; dbh is measured in cm, and; AGB is measured in kg dry mass. Species-specific wood density values were obtained from the worldwide global wood density database (Zanne et al., 2009). Where values were not available at the species-

level, the average of genus- and family-level values were used. In this study involving 71 species, genus-level values were applied on 12 species and family-level values on five species. The conversion of aboveground biomass to carbon stocks was based on the assumption that 50% of the dry mass was carbon (Ngo et al. 2013, Kenzo et al., 2010). This means that the total carbon stock is 50% of the aboveground biomass.

7.2.7 Fauna Field Assessment

7.2.7.1 Targeted Fauna Groups

Baseline biodiversity surveys were carried out for the following fauna groups: odonates (dragonflies and damselflies); butterflies; herpetofauna (amphibians and reptiles); birds; mammals; fishes; crustaceans; and molluscs. These fauna groups were chosen because they: i) are of general interest to the public; ii) are well-documented; iii) are generally easy to survey; iv) have important ecological roles in the ecosystem, and; v) some species serve as ecological indicators (Bulankova, 1997; Carignan & Villard, 2001; Simon et al., 2011; Ejigu et al., 2014).

7.2.7.2 Survey Methods

Field surveys were conducted from April to October 2018 and consisted of visual encounter surveys along terrestrial and aquatic line transects, trapping, netting, and quadrat sampling for selected fauna groups, and terrestrial camera trapping. Visual encounter surveys (VES) are an advantageous survey method because they provide data on presence, abundance, and distribution. Visual encounter surveys were performed for the two terrestrial and four aquatic transects. For species that are difficult to be observed visually, particularly bats and the aquatic fauna, sampling via trapping, netting and quadrat sampling were used. It is also more effective for surveying uncommon and/or cryptic species. All incidental observations were documented.

The terrestrial transects amount to about 3 km and traverse all major habitat types within the core study area to capture variation in habitats and habitat use by animals, and to allow for detecting a greater diversity of species (refer to Figure 26). The terrestrial transects are described in Table 15. Similarly, the aquatic transects amount to about 0.8 km and traverse the mangrove, mudflat and freshwater habitats within the core study area. Along each transect, sampling points were placed at intervals of 50 m, as measured by a handheld GPS. Fauna encountered during the surveys were recorded to the nearest sampling point. Alignment of the aquatic transects and sampling locations are shown in Figure 27. A summary of the survey methods for each targeted fauna group are described in Table 16 and further described in this section.

During the transect surveys, a minimum of two surveyors walked along the designated transect at an unhurried pace to search for targeted fauna species. All fauna encountered were identified to species level, or the lowest taxonomic level possible, and the location of each individual were recorded using a handheld GPS (Garmin 64S). For each taxon, important natural history notes were collected, such as reproductive behavior (e.g., displaying, guarding, mating, ovipositing), and plant species that butterflies and birds are observed to be feeding on, laying eggs or nesting on, and caterpillars are found on. The surveys were conducted twice for each fauna group, and in a reverse direction during the second session to allow detection of fauna species with variable activity patterns during the survey period. In addition, migratory bird surveys were conducted in October 2018 to document migratory species within the core study area.

Table 15: Description and Length of the Terrestrial and Stream Transects for Fauna Visual Encounter Surveys

Transect Type	Transect Reference NOTE 1	Length of transect (km)	Description
Terrestrial	T1_01 to 29	1.70	Largely within future residential development area)
Terrestrial	T2_01 to 19	1.35	Admiratly Park (outside future residential development area)
Aquatic	A1_01 to 06	0.22	Freshwater streams within forest (Woodlands Waterfront Park); cutting through mangrove and mudflat.
Aquatic	A2_01 to 05	0.38	Freshwater stream within forest (partially within future residential development area); native-dominated freshwater swamp on the forest edge (referred to Figure 27)
Aquatic	A3_01 to 05	0.31	Parts of Sungei Cina
Aquatic	ML_01 to 04	0.08	Mangrove and mudflats along Sungei Cina

NOTE 1: Transect reference refers to sampling points along the transects

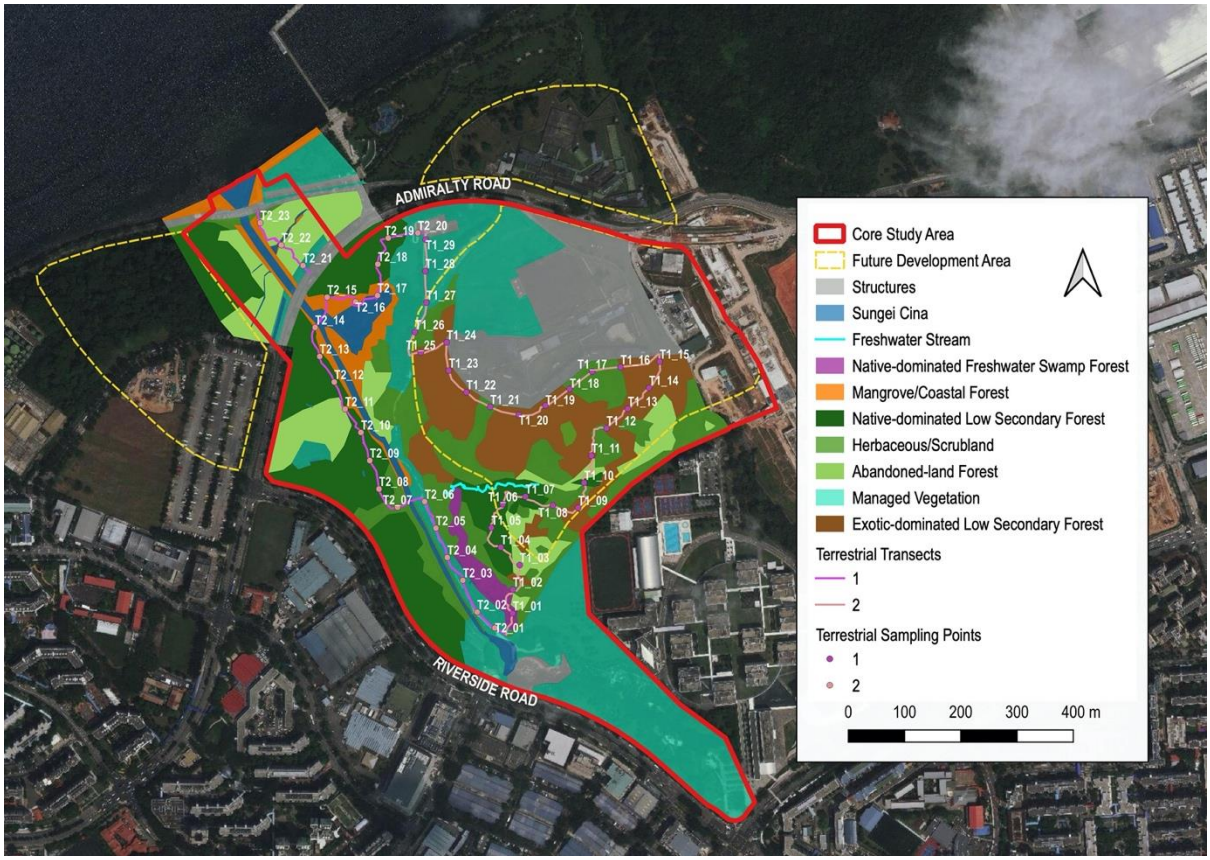


Figure 26: Alignment of the Fauna Terrestrial Transect Surveys

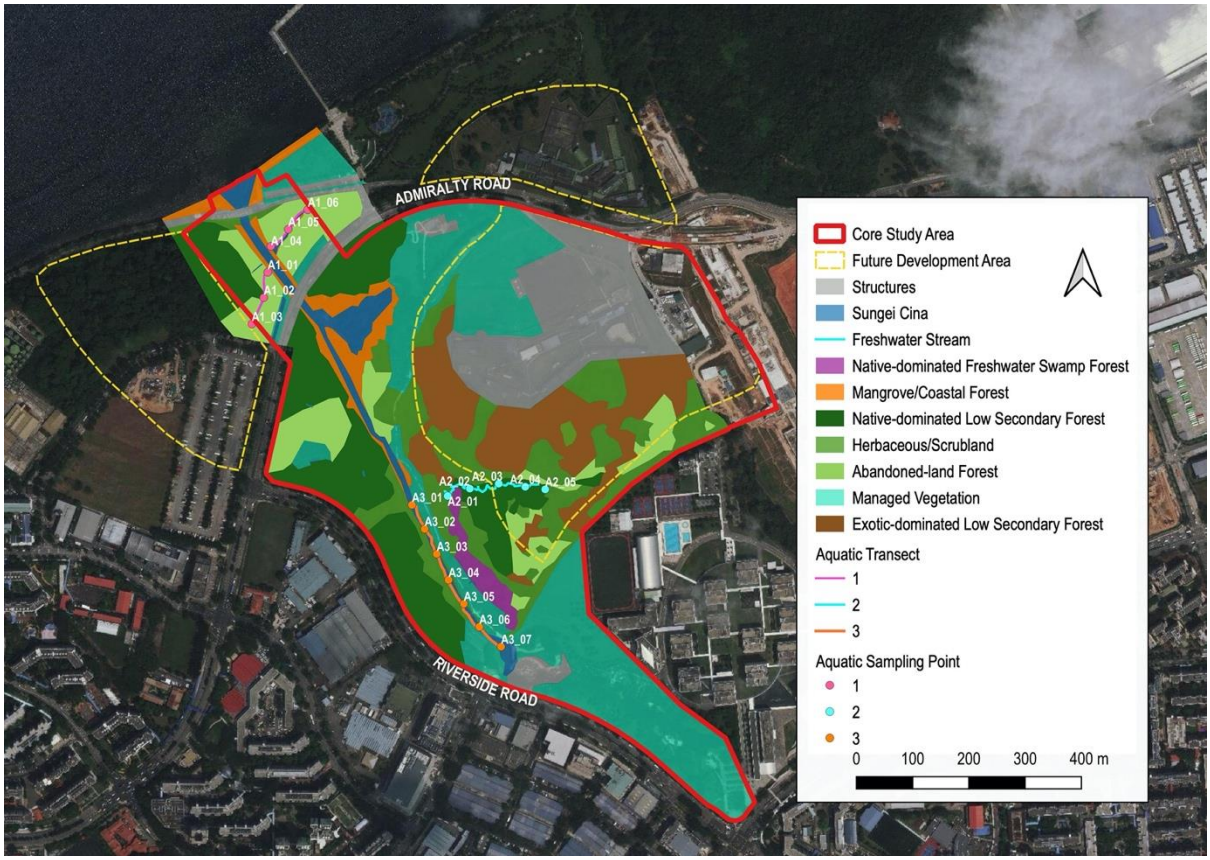


Figure 27: Alignment of the Fauna Aquatic Transect Surveys and Mollusc Sampling Points

Table 16: Summary of the Survey Timings and Methods for Each Targeted Fauna Group

Fauna group	Survey timing (h)	Survey method
Molluscs	Tide level of 0.0m to 0.1m	Quadrat sampling at mollusc sampling points in the day
Odonates (dragonflies and damselflies)	09.00–16.00	Diurnal visual surveys along aquatic transect (freshwater streams; mangrove and mudflat).
Butterflies	09.00–16.00	Diurnal visual surveys along the terrestrial transect.
Fishes	Low tide between 0.8m to 1.5m	Visual surveys and fish trapping (including tray netting and cast netting) along aquatic transects.
Decapod crustaceans and horseshoe crabs	Tide level of 0.0m to 0.1m	Diurnal and nocturnal visual surveys along aquatic transects.
Herpetofauna (reptiles and amphibians)	07.00–16.00, 20.00–00.00	Diurnal and nocturnal visual and auditory surveys, along both terrestrial and aquatic transects.
Birds	07.00–10.00, 20.00–00.00	Diurnal and nocturnal visual and auditory surveys along the terrestrial transect.
Mammals	07.00–10.00, 20.00–00.00	Diurnal and nocturnal visual and auditory surveys along the terrestrial transect.

Molluscs – Molluscs were surveyed using VES and quadrat sampling at four locations in mangroves during low tide levels between 0.0 – 0.1 m (refer to Figure 27). Quadrat sampling involved setting three 50 x 50 cm quadrats at three random locations along seven 15 m transects. Transects were placed randomly in mangroves. Where streams cut through transects in the mangrove, the stream was not sampled. Instead, the width of the stream was added onto the end of the transect to ensure the transect totalled 15-m. Within each quadrat, the number and abundance of species visible on the surface was recorded. Afterwards, a 10 – 15 cm hole was dug using a hand shovel and the soil was sieved to sample for burrowing species. In mangroves, digging avoided mangrove prop roots. Individuals were identified visually or through photography. Since some species are capable of quick retreats and escapes, some individuals were captured by way of hand or nets for identification. Captured individuals were released immediately after identification.

Odonates (dragonflies and damselflies) – Odonates have a bipartite life cycle consisting of an aquatic larval stage and a terrestrial adult stage associated with freshwater ecosystems. Therefore, odonate surveys concentrate on searching for adults along aquatic transect (freshwater streams and mangrove) between 0900 h and 1600 h, on days with fair weather when odonates are most active. Due to the difficulties in sampling and identification, aquatic larvae and exuviae were not surveyed. Binoculars and photography were used to assist in identifying species.

Butterflies – Butterfly surveys consisted of searching for adult butterflies, caterpillars, pupae, eggs, and host plants along the terrestrial transect between 0900-h and 1600-h, on days with fair weather when butterflies are most active. Binoculars and photography were used to assist in the identification of species.

Fishes – As the water in Sungei Cina is too turbid for visual surveys, fish sampling included netting techniques and trapping which are more effective. Fish communities within the mangrove and freshwater streams were sampled using cast netting and tray netting respectively. Cast netting involves throwing a net out in a deep-water area clear of debris and immediately taking it in. It was conducted at two distinct locations within the mangrove, where waters are of a suitable depth (CN_01 and CN_02(refer to Figure 28). It involved three throws, and a 10 minute interval before another three throws. An interval time is needed between each replicate because the fishes would slowly recognise this behaviour and move away from the sampling point. Fishes caught were kept in a pail till the end of survey to avoid double counting. Subsequently, fish traps were placed within the mangrove to sample for fish species which are more benthic and cyrptic (refer to Figure 28). Fish traps used were one-litre plastic bottle traps baited with halal sausage meat. They were deployed at four locations along the Sungei Cina (FT_01 – FT_04) (refer to Figure 28), especially at areas where transects sampling were inaccessible.

Within the freshwater streams, tray-netting was done at every 60 m, from downstream to upstream. Species caught in the tray net were identified and released immediately.

Decapod crustaceans and horseshoe crabs – They were sampled through diurnal surveys (0700–1200 h) and nocturnal (2000 h and 0000 h) visual encounter surveys at tide levels of 0.0m to 0.1m along the aquatic transects with a hand torch. As most species are capable of quick retreats and escapes, some individuals will require capture by way of hand or nets for identification. Additionally, crab traps were deployed in the mangrove during low tide (about 0.3 m) and collected the following day.

Traps were baited with halal sausages and deployed at four locations along the Sungei Cina (FT_01 – FT_04) (refer to Figure 28), especially at inaccessible areas where transect sampling were not possible.

Herpetofauna (reptiles and amphibians) – Herpetofauna surveys consisted of diurnal surveys (0700–1600 h) and nocturnal surveys (2000–0000 h) along the terrestrial and aquatic transects (freshwater streams and mangrove). The search for amphibians concentrated on aquatic habitats. Surveys involved searching for individuals on the ground, under rocks, logs, leaf litter and debris, in the water, and on vegetation. For nocturnal surveys, flashlights were used for spot-lighting individuals and for revealing eyeshine. Some species are capable of quick retreats and escapes; thus, some individuals required capture by way of hand, hooks, tongs, or dip nets for identification, and binoculars were used to identify individuals perched high on vegetation. Sound-producing geckos and frogs were also located or identified by call recognition.

Birds – Bird surveys consisted of diurnal surveys (0700–1000 h), as well as nocturnal surveys (2000–0000 h) along terrestrial transect. All birds were identified by way of sight, binoculars, photography and call recognition. Nocturnal birds (i.e., owls and nightjars) were detected by illumination with flashlight, eyeshine and call recognition. Diurnal birds encountered sleeping at night perched on vegetation were recorded as incidental captures. Bird surveys extended into October 2018 to cover the migratory season.

Mammals – Mammal surveys consisted of diurnal surveys (0700–1000 h), as well as nocturnal surveys (2000–0000 h) along terrestrial transect. Since the majority of mammalian species in Singapore are nocturnal, efforts concentrated on nocturnal surveys. Mammals were searched for on the ground and on vegetation, and in burrows and tree holes. In addition, tracks and scats were scanned for, which can be used to identify some species or genera. All mammals were identified by way of sight, binoculars, photography and call recognition. Nocturnal mammals were detected by illumination with flashlight and eyeshine, and afterwards, were observed and identified with flashlights fitted with red filters to reduce disturbance to their behaviour. In addition to visual surveys, camera trapping was conducted to complement the documentation of mammal composition with the site (Section 7.3.3.2).

Small mammal trapping was not be conducted in this study because a thorough small mammal trapping study was conducted by Duke-NUS within the core study area in 2016 (Mendenhall et al., 2017; Neves et al., 2017).

Bats – Due to the difficulty in finding roost sites and the inability to visually identify bats to the species-level when they are flying at night, bat sampling involved performing live-trapping and acoustic sampling. Live-trapping consisted of mist netting and harp trapping. Mist netting targeted the larger-sized fruit/nectar bats, while harp trapping targeted the smaller insectivorous bats. Each trapping session consisted of two mist nets and two harp traps setting in different locations (refer to Figure 29). Typically, each ground mist net and harp trap were placed near to one another. Trap set up was between 1730 h and 1930 h and trapping commenced from 2000 h – 0000 h, with traps being checked repeatedly throughout the night. The mist nets were disassembled by 0000 h and removed, while the harp traps were left overnight and checked the following morning between 0800 and 0900 hrs, then removed. Bats collected in the traps were identified and released immediately.

Acoustic sampling was executed by using a handheld bat detector (Echo Meter Touch 2 Pro) to record the ultrasonic vocalizations of insectivorous bats. Acoustic signatures are useful in identifying bats to

species, but species identification is hampered by the lack of publicly-available echolocation recordings that can be used for comparison.

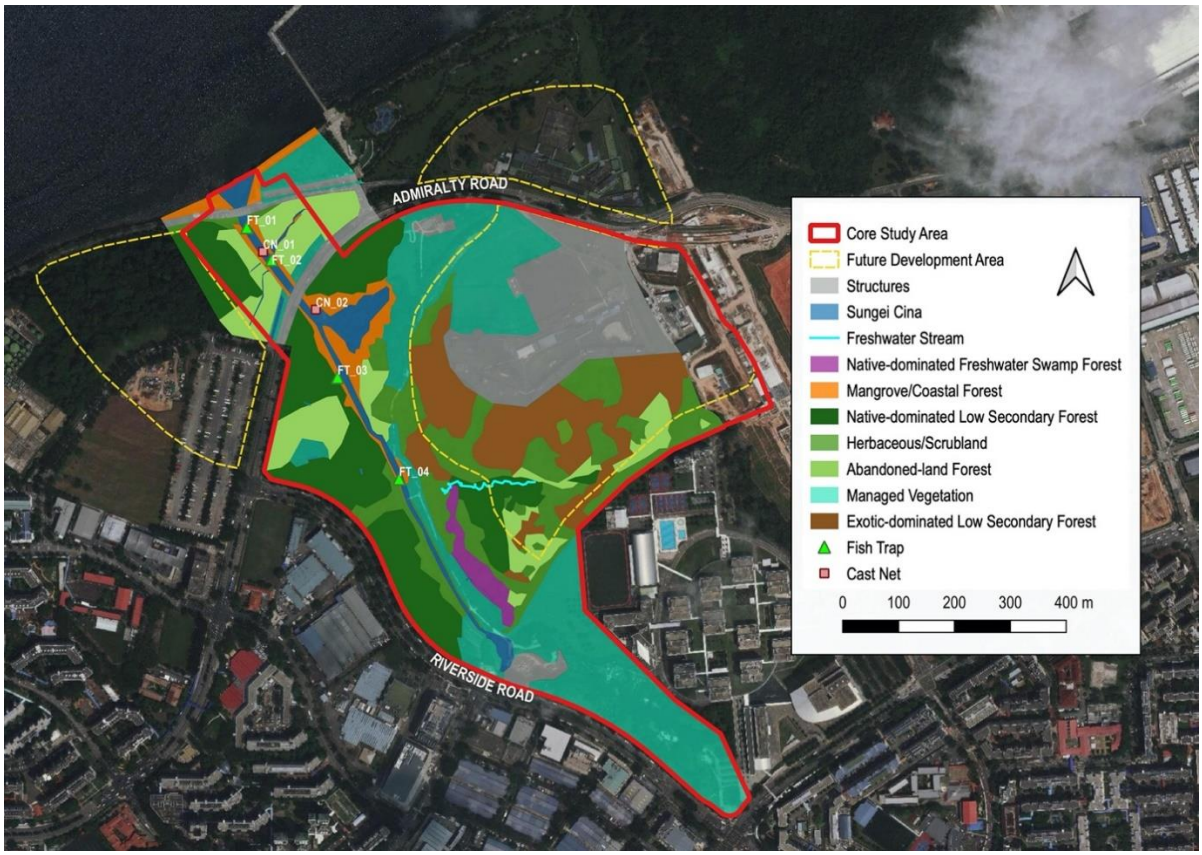


Figure 28: Locations of Fish/Crab Traps (FT) and Cast Netting (CN)

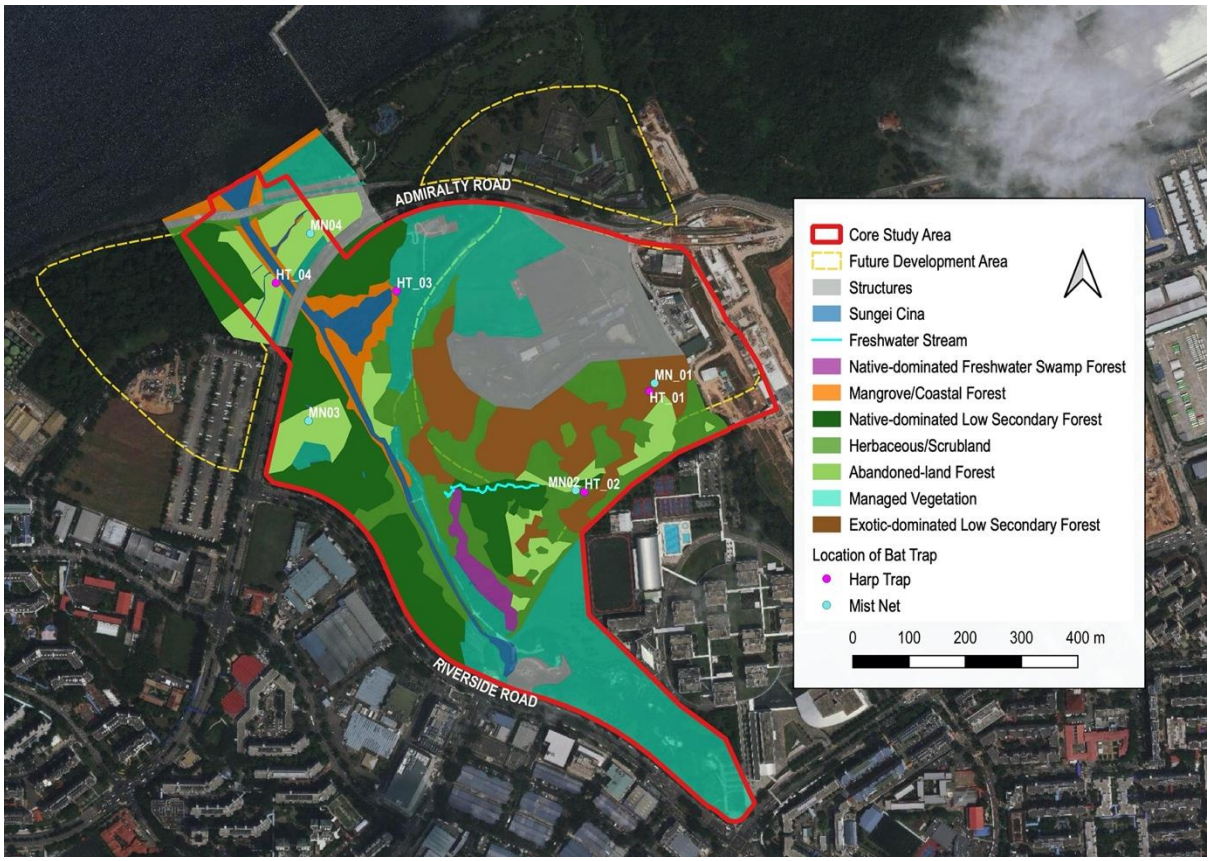


Figure 29: Locations of Mist Nets and Harp Traps

7.2.8 Camera Trapping

Camera trapping is a beneficial approach for surveying wildlife because it is a non-invasive (i.e., does not require capture and handling of animals) and non-labour-intensive method, for recording species richness, abundance, and distribution over a 24 h sampling regime for a long period of time. Although generally employed to survey a variety of taxa, camera traps are mainly used to survey for ground-dwelling medium to large-sized mammals, given the ease of identifying them readily through photographs or videos. Ten camera traps were deployed over a two-month period, equally distributed across the core study area, at strategic locations where obvious animal signs were detected and/or where animal usage was deemed most likely based on habitat characteristics (refer to Figure 30).

Each camera trap (Model: Browning Strike Force HD Pro, BTC-5HDP) was placed at a height of 20–80 cm from the ground and secured to a tree with a Python Master lock (refer to Figure 31). The cameras were programmed to be active 24 h a day at high sensitivity, capturing a 10 s video when triggered by movement and changes in temperature. The camera traps were checked once after two weeks and thereafter monthly after deployment to ensure that they are properly functioning. If no detections were recorded on the camera trap within the first two weeks, the camera trap may be relocated. Only one camera trap (WL02) was shifted to its proximity due to decaying tree.

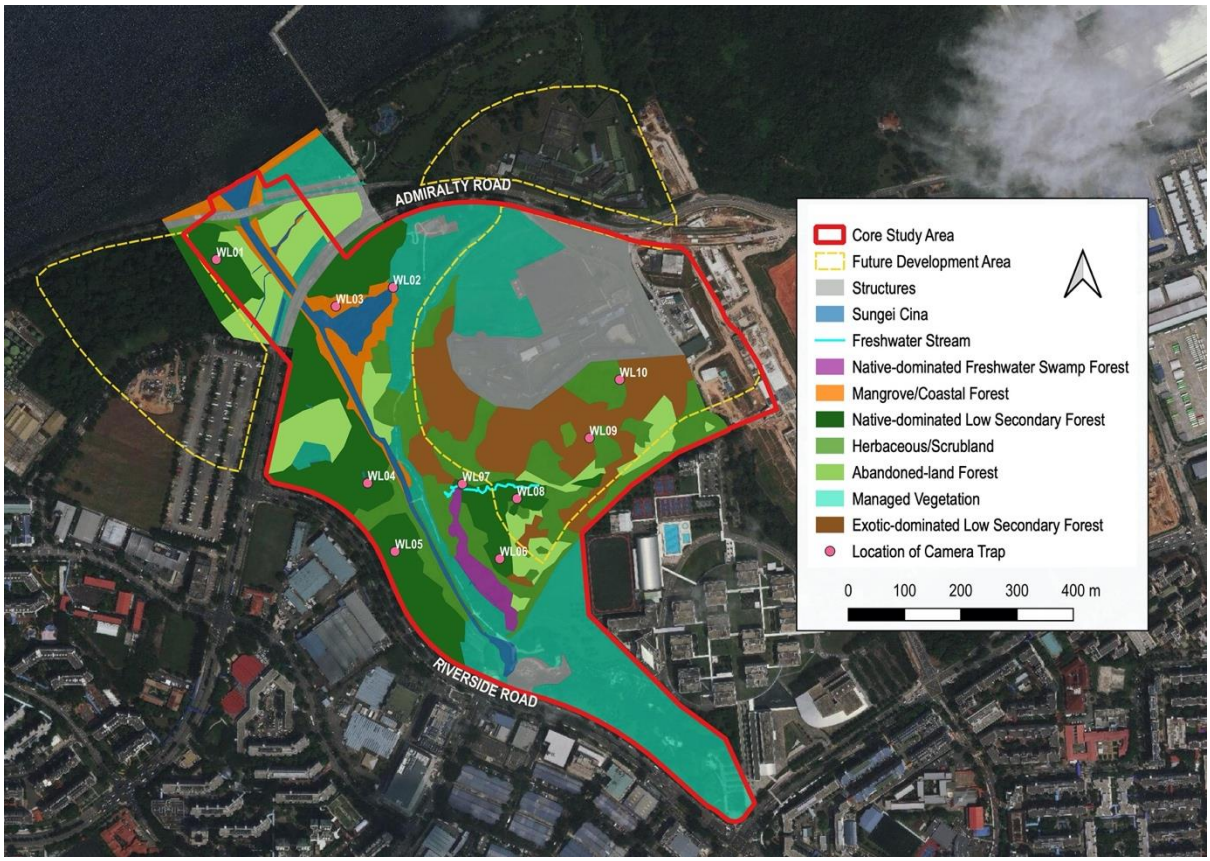


Figure 30: Camera Traps Distributed Across the Core Study Area



Figure 31: Quadrat Sampling along a 15 m Transect at the Mudflat (A); Cast-netting in Deep Waters of the Mangrove (B); Camera Trap set-up (C); Harp-trap Set-up along Forest Trails (D)

7.2.9 Fauna Data Analyses

7.2.9.1 Species Richness and Distribution

To determine species richness at each sampling point, every sighting of a targeted fauna species recorded during the surveys were tied to a sampling point. The sightings were consolidated, and the number of unique species were counted to determine species richness. In addition, distribution maps were created for each fauna group, and one map was generated that included all conservation-significant species, using QGIS v.2.18.14 (Quantum GIS Development Team, 2017).

7.2.9.2 Camera Trapping

For camera trapping, camera trap location, species identity, and abundance were recorded for each video with a positive capture (i.e. with a fauna species recorded on the video). Independent detections of individuals of the same species captured at the same camera trap was standardised to 60 min intervals (Chua, 2016). The number of independent detections were used for calculation of detection history for each species as well as modelling sampling effort and estimating species richness. To determine the adequacy of camera trapping sampling effort, species accumulation curves for non-volant mammals were generated using the specaccum function available in the package VEGAN (Oksanen et al. 2016). For this analysis, the “random” species accumulation method with 100 permutations was used. The “random” method adds the number of monitoring days in random order (Oksanen et al., 2016). Simultaneously, five projected species richness using non-parametric incidence-based estimators—Chao, first-order Jackknife (Jack1), second-order Jackknife (Jack2), and Bootstrap (Boot) were computed based on the observed richness and abundance. Species richness maps at each

camera trap were generated and then exported onto QGIS version 2.18.14 for creating distribution maps.

7.2.9.3 Acoustic Bat Sampling

All recorded bat calls were analysed using Kaledioscope v.4.5.4 (Wildlife Acoustics, Inc.). Only bat calls with ≥ 5 pulses were analysed. Identification of calls to species was based on the call shape, maximum frequency, minimum peak, call duration and pulse repetition rate (Pottie et al., 2005). Once these parameters were analysed, the results were compared to Pottie et al. (2005), who provides bat echolocation signatures for Singapore.

7.3 Baseline Ecological Environment

7.3.1 Flora Field Assessment Results

7.3.1.1 Vegetation Types

The flora field assessment found that the core study area is composed largely of urban structures and managed vegetation (totalling 45.3%) that is found within Admiralty Park and Woodlands Waterfront Park (refer to Table 17 and Figure 32). Patches of managed vegetation often interspersed in between urban structures such as along the roadside and within the Admiralty Park Prison. Native-dominated low secondary forest made up the next most expansive vegetation type (19.0%) that also forms a large part of Admiralty Park and Woodlands Waterfront Park. The remaining delineated vegetation types comprise herbaceous/scrubland vegetation (15.6%), exotic-dominated secondary forest (13.2%), abandoned-land forest (11.3%), mangrove/coastal forest (4.3%) and native-dominated freshwater swamp forest (1.5%). The rest of the core study area is occupied by waterbodies (refer to Table 17 and Figure 32).

The herbaceous/scrubland vegetation patches are interspersed among the other vegetation types, particularly along the sides of the park trails and within the future residential development area. Mangrove/coastal forest patches are present along the downstream section and at the mouth of Sungei Cina. The exotic-dominated secondary forest patches are found mainly within the future residential development area. The abandoned-land forest patches are found mainly within the Admiralty Park and Woodlands Waterfront Park area, with small patches within the future residential development area. The 0.7 ha patch of native-dominated freshwater swamp forest is a constantly inundated low-lying area situated along the park trail, just outside the residential development boundary.

Table 17: Area Occupied by the Various Vegetation Types and their Percentage Relative to the Total Core Study Area

Vegetation Types	Area (ha)	Percentage of Total Core Study Area
Structures	14.5	24.5
Managed vegetation	12.3	20.8
Native-dominated low secondary forest	8.9	19.0
Herbaceous/scrubland	7.3	15.6
Exotic-dominated secondary forest	6.2	13.2
Abandoned-land forest	5.3	11.3

Vegetation Types	Area (ha)	Percentage of Total Core Study Area
Mangrove/coastal forest	2.0	4.3
Native-dominated freshwater swamp forest	0.7	1.5
Waterbody	2.0	4.3
Total	**59.2**	**100**

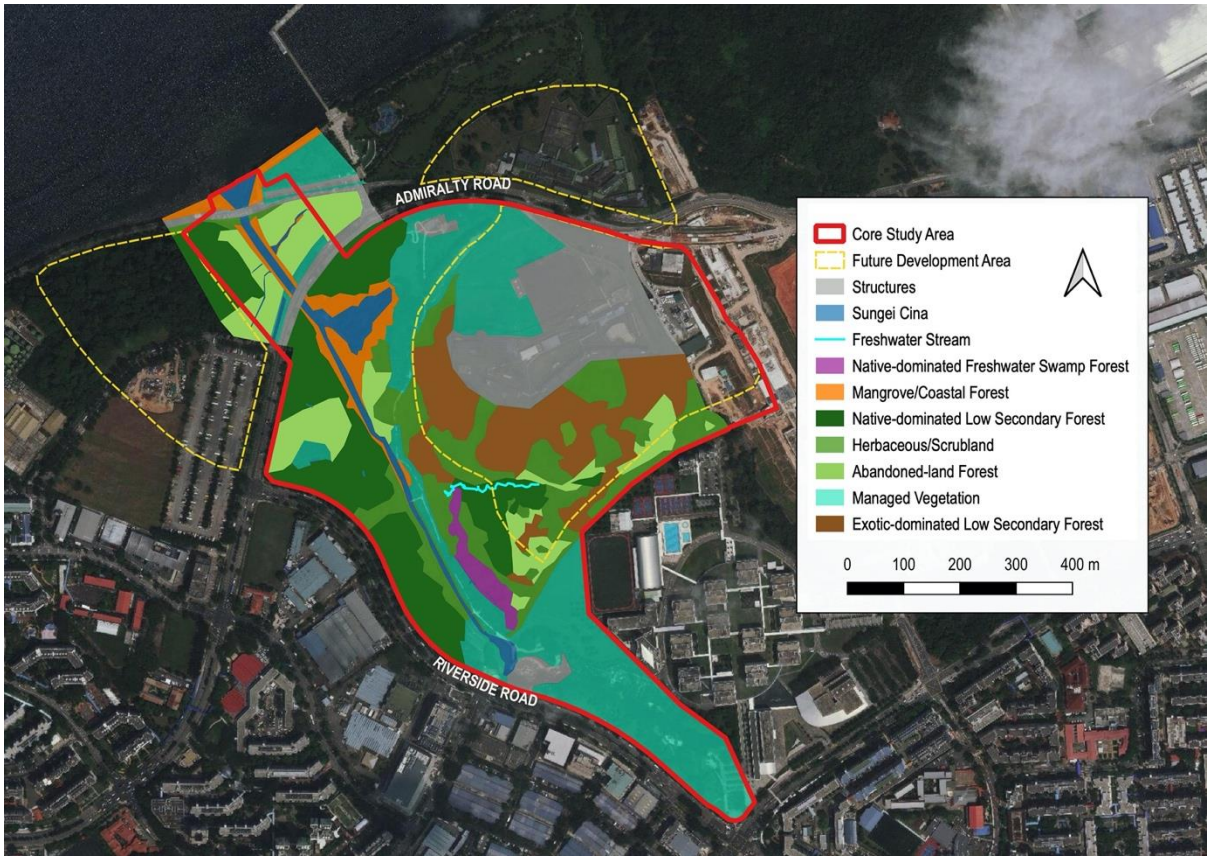


Figure 32: Vegetation Types Identified in the Core Study Area

7.3.1.2 Description of Vegetation Types

The following section describes in detail the floristic composition within the various vegetation types at the core study area.

7.3.1.2.1 Managed Vegetation

A large portion of Admiralty Park consists of managed vegetation typical of urban parks in Singapore. It consists planted trees and shrub species grown on turf mainly for ornamental purposes. Most of the species planted within the managed vegetation of the core study area are native, in accordance with NParks' emphasis on the planting of native species. Tree species recorded include Kelumpang Burong (*Sterculia parviflora*), Common Putat (*Barringtonia racemosa*) and River Tristania (*Tristaniopsis whiteana*). Within the Admiralty West Prison, species recorded are those commonly planted, including Macarthur Palm (*Ptychosperma macarthurii*), Cempedak (*Artocarpus integer*) and Trumpet Tree (*Tabebuia rosea*). Some of the managed vegetation are also interspersed within the urban structures,

such as within the Prison and along the roadside which is not shown in Figure 32. Figure 33 shows site photos representative of managed vegetation.



Figure 33: Site Photos Representative of Managed Vegetation

7.3.1.2.2 Native-dominated Low Secondary Forest

The native-dominated low secondary forest found within the future residential development area was identified to be an early-successional secondary forest, dominated by Tiup-tiup (*Adinandra dumosa*), Silver Back Tree (*Rhodamnia cinerea*), Ivy Palm (*Arthrophyllum diversifolium*), and Tembusu (*Cyrtophyllum fragrans*). Other plants commonly associated with this vegetation type were also documented. These include the Fishtail Palm (*Caryota mitis*) and Simpoh Air (*Dillenia suffruticosa*). The majority of these trees sampled during this study had girth sizes less than 1.0 m, indicative of the young age of the forest. However, numerous tree species that are associated with native-dominated tall secondary forests, such as the Blue Laurel (*Litsea firma*) and *Lindera lucida* were frequently recorded, indicating the potential of the forest to transition into a later successional stage. Figure 34 shows a site photo representative of native-dominated low secondary forest.



Figure 34: Site Photo Representative of Native-dominated Low Secondary Forest

7.3.1.2.3 Herbaceous/scrubland vegetation

Within the core study area, a number of fragments of herbaceous/scrubland vegetation were identified. These areas are characterized by low vegetation, dominated by short shrubs and grasses such as Parakeet Flower (*Heliconia psittacorum*), Elephant Grass (*Pennisetum purpureum*) and Giant Taro (*Alocasia macrorrhizos*). Dominant fern species such as Resam (*Dicaranopteris linearis*) and Sword Fern (*Nephrolepis auriculata*) were found in large clusters. Exotic trees, such as Moluccan Albizia (*Falcataria moluccana*) and Pumpwood (*Cecropia pachystachya*) were also found scattered throughout the herbaceous/scrubland patches. Figure 35 shows site photos representative of herbaceous/scrubland vegetation.



Figure 35: Site Photos Representative of Herbaceous/Scrubland Vegetation

7.3.1.2.4 Exotic-dominated Secondary Forest

The exotic-dominated secondary forest at the core study area are dominated by exotic tree species such as the Moluccan Albizia (*Falcataria moluccana*) and African Tulip (*Spathodea campanulata*). These two species were commonly planted ornamentals after the 1960's and quickly invaded the poor soils of recently cleared woodlands (Yee et al., 2016). Moreover, these plants are capable of fixing their own nitrogen, which allows them to grow on poor soil (Wee and Corlett, 1986). The understorey of this vegetation type is limited to groundcover species like the Common Asystasia (*Asystasia gangetica*) and Wild Pepper (*Piper sarmentosum*), as well as climbers like the Chinese Creeper (*Mikania micrantha*). Saplings of the Fishtail Palm (*Caryota mitis*) also tend to be abundant in the understorey. Figure 36 shows site photos representative of exotic-dominated secondary forest.



Figure 36: Site Photos Representative of Exotic-dominated Secondary Forest

7.3.1.2.5 Abandoned-land Forest

Abandoned-land forest is secondary forest regenerated from abandoned kampongs and/or plantations. The flora species that constitute this vegetation type are mainly fruit trees or crop plants that were cultivated by past dwellers for their natural resource or herbal/medicinal value. Some examples of fruit tree species include Rambutan (*Nephelium lappaceum*), Mango (*Mangifera indica*) and Saipan Mango (*Mangifera odorata*). Examples of crop plant species such as Teh Kampong (*Acalypha siamensis*) and Variegated Croton (*Codiaeum variegatum*) were grown for their ethnobotanical uses. Another crop tree commonly found in this vegetation type is the Rubber Tree (*Hevea brasiliensis*), planted as a source of latex for making natural rubber products. Figure 37 shows site photos representative of abandoned-land forest.



Figure 37: Site Photos Representative of Abandoned-land Forest

7.3.1.2.6 Mangrove/coastal Forest

Sungei Cina regularly feeds sea water into the core study area, inundating parts of the core study area and creating a brackish environment for the establishment of mangrove vegetation. The mangroves in Woodlands North Coast are highly dependent on sea water inundation. The inundation has to be maintained for the mangroves to persist.

The dominant tree species there are the Api-api Bulu (*Avicennia rumphiana*), Large-leafed Mangrove (*Bruguiera gymnorrhiza*), Pakau Putih (*Bruguiera cylindrica*) and Mangrove Cannonball (*Xylocarpus granatum*). Other mangrove associates of different habitats representative of the core study area include the mangrove climber Akar kekapal (*Hoya diversifolia*), the mangrove shrub Sea Holly (*Acanthus ebracteatus*), the mangrove ferns Piai Lasu (*Acrostichum speciosum*) and Paku Laut (*Acrostichum aureum*), as well as the mangrove palm Attap (*Nypa fruticans*). Figure 38 shows site photos representative of mangrove/coastal forest.

Although most of Singapore's mangrove areas lack an extensive back mangrove component (Yang *et al*., 2013), many back mangrove and coastal associated species were found scattered in close proximity to Sungei Cina. These species include the Sea Almond (*Terminalia catappa*), Sea Hibiscus (*Talipariti tiliaceum*), Rattan (*Calamus erinaceus*) and Yellow Flame (*Peltophorum pterocarpum*).

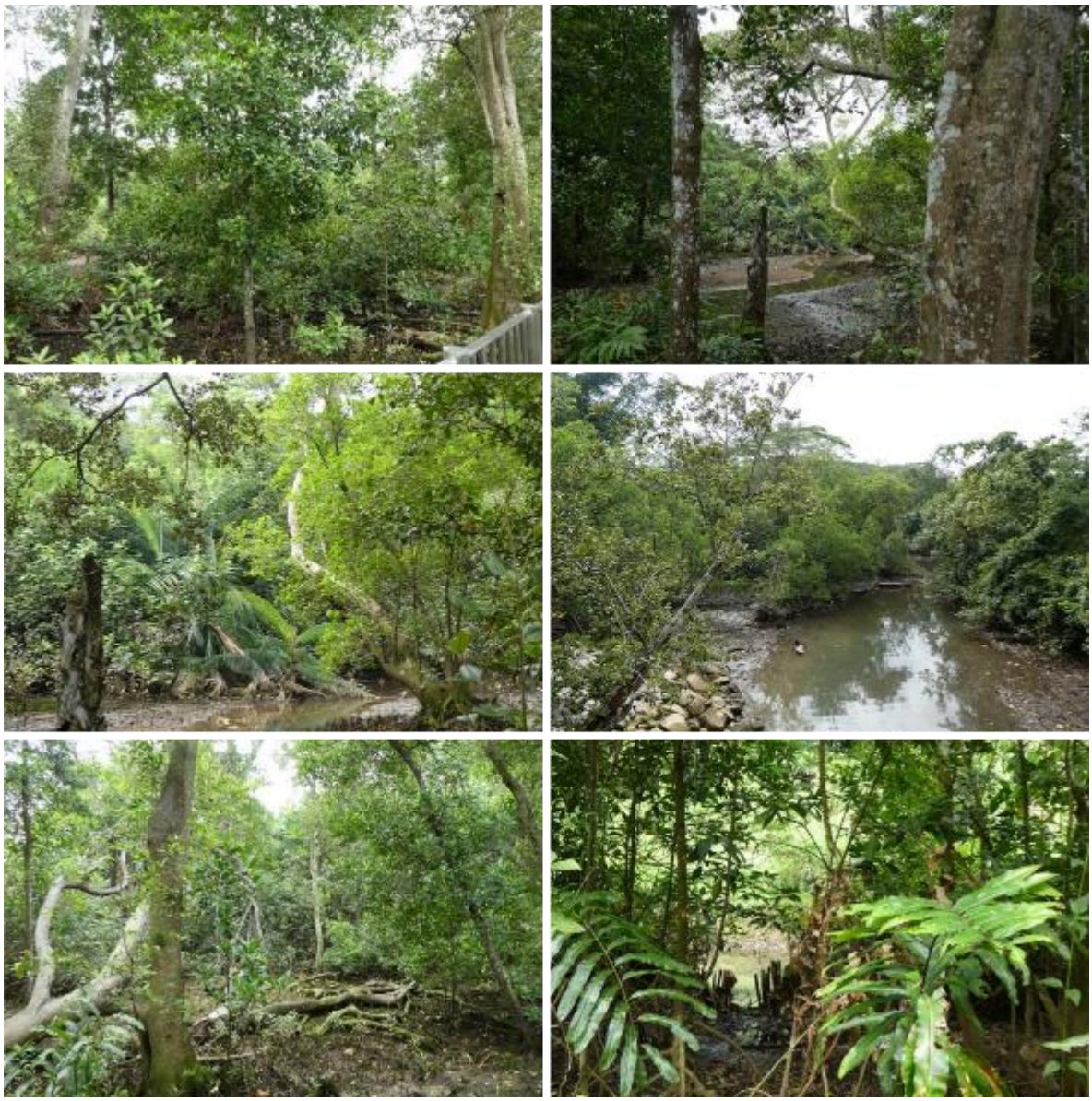


Figure 38: Site Photos Representative of Mangrove/Coastal Forest

7.3.1.2.7 Native-dominated Freshwater Swamp Forest

A small portion of the core study area is made up of native-dominated freshwater swamp vegetation. Clear freshwater was observed in the swampy habitat and native-dominated freshwater swamp forest flora species characteristic of such a vegetation type were recorded. Some examples include *Lithocarpus cantleyanus*, Nibong (*Oncosperma tigillaria*), *Lindera lucida* and Tree Fern (*Cyathea latebrosa)* (refer to Figure 39).



Figure 39: Site Photos Representative of Native-dominated Freshwater Swamp Forest
A) *Lithocarpus cantleyanus*; B) Nibong (*Oncosperma tigillaria*); C) *Lindera lucida*; and D) Tree Fern (*Cyathea latebrosa*).

7.3.1.3 Flora Inventory

In this survey, a total of 475 species of vascular plants from 115 families were recorded (**Appendix A**). This consisted of 225 trees, 85 herbs, 58 shrubs, 85 climbers, 18 epiphytes, and four stranglers. Native species dominated the assemblage with 295 species (62.1%); whereas, 151 were exotic plant species (31.8%). 23 species (4.8%) were cryptogenic species. The remaining six species (1.3%) were not listed in Chong *et al*. (2009) (refer to Table 18). All species recorded from unpublished NParks survey in 2006 were also recorded in this survey.

Table 18: Total Plant Species Recorded in the Core Study Area along with their Origin and National Status

Origin	National Status	No. of Species	Percentage of all Species (%)
Exotic		151	31.8
Cryptogenic		23	4.8
Native	Common	133	28.0
	Vulnerable	58	12.2
	Endangered	37	7.8
	Critically endangered	57	12.0
	Extinct	8	1.7
	Extinct (recently rediscovered)	1	0.2
	Not listed	1	0.2
	Total	**295**	**62.1**
Not Listed		6	1.3
Grand Total		**475**	**100.0%**

7.3.1.4 Plants of Conservation Significance

The survey catalogued 162 plant species of conservation significance, representing 34.0% of the total number of plant species recorded (**Appendix B**). Of these, 58 are nationally vulnerable, 37 are endangered, 57 are critically endangered and 9 are presumed to be nationally extinct. However, many of these species persist through cultivation (i.e., planted in the past). The distribution of these conservation significant plants is concentrated within the native-dominated low secondary forest and the native-dominated freshwater swamp forest, particularly within or on the edge of the future residential development boundary (refer to Figure 40 and **Appendix C**).

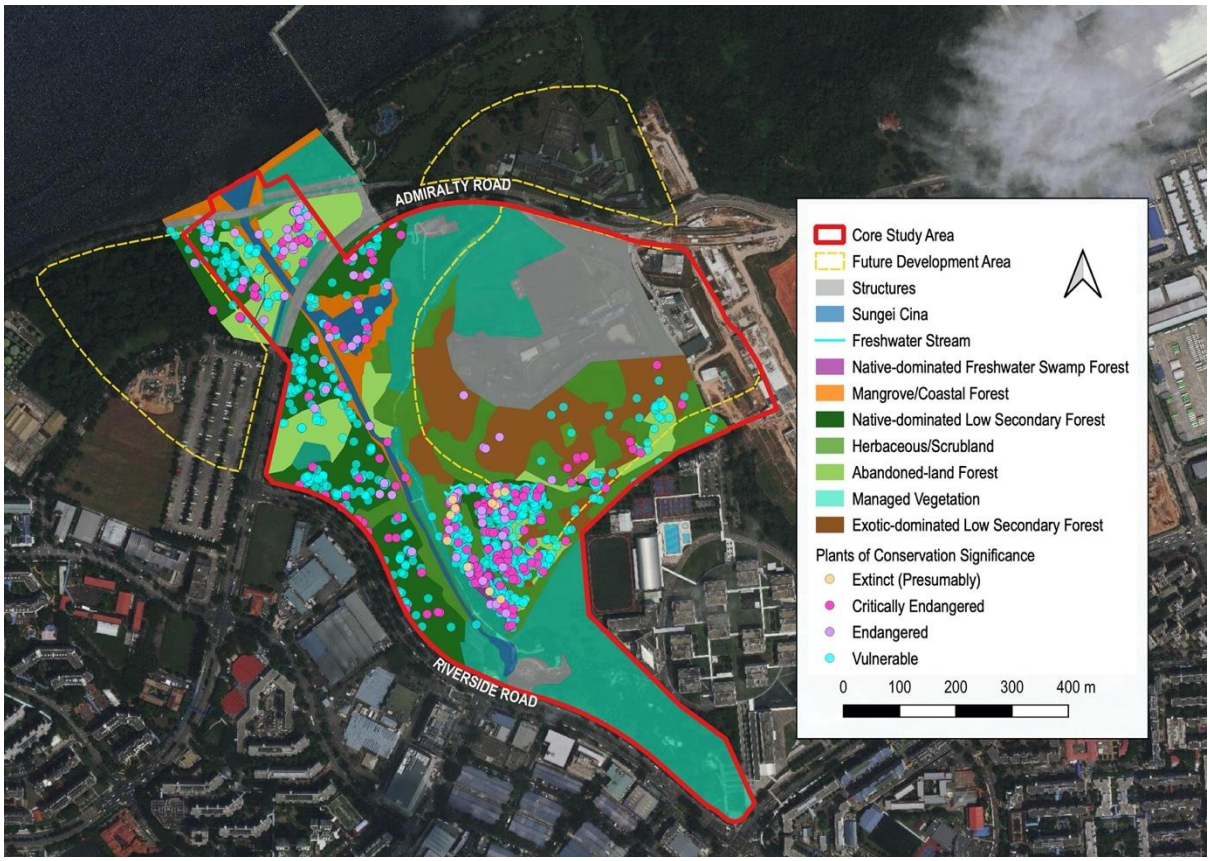


Figure 40: Distribution of Flora Species of Conservation Significance (Vulnerable, Endangered and Critically endangered) Naturally Occurring in the Core Study Area

7.3.1.5 Significant Large Trees

A total of 197 significant large trees and palms, comprising 44 species were documented within the study area. Of these, 144 trees/palms (greater than 1.5-m in girth) are located in the Admiralty Park area, and 53 trees greater than 1.0 m in girth in the future residential development area were documented (refer to Figure 41).

Most of the large trees within the Admiralty Park area are commonly cultivated species such as Tembusu (*Cyrtophyllum fragrans*; 21 specimens), Common Rhu (*Casuarina equisetifolia*; 19 specimens) and Red Water Tree (*Erythrophleum suaveolens*; 13 specimens). These three species made up 36.8% of the significant large trees within the Admiralty Park area. The remaining 63.2% was made up of 34 species.

In the future residential development area, Tembusu (*Cyrtophyllum fragrans*) made up 43.3% (23 specimens) of the significant large trees. Ten Men Tree (*Ixonanthes reticulata*), a native common secondary forest species, made up 18.9% (10 specimens) of the significant large trees. The remaining 37.8% was made up of 11 species.

A total of 23 conservation significant large-sized specimens have been recorded. These include three specimens of the critically endangered Yellow Flame Tree (*Peltophorum pterocarpum*), one specimen of the endangered Mengkuang (Pandanus atrocarpus), as well as 14 specimens of six vulnerable species (refer to Figure 42). The list of locations of the individual significant large trees is provided in **Appendix D**.

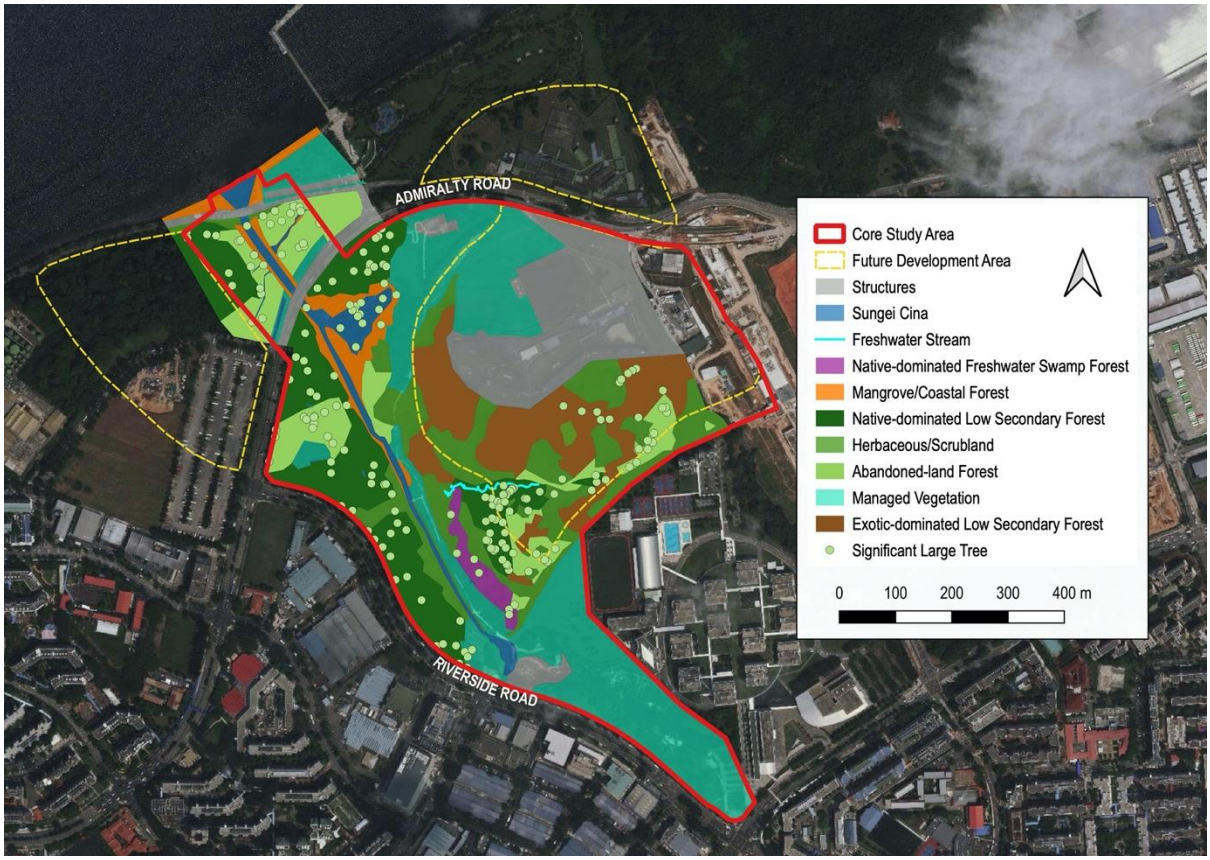


Figure 41: Distribution of Significant Large Trees in the Study Area

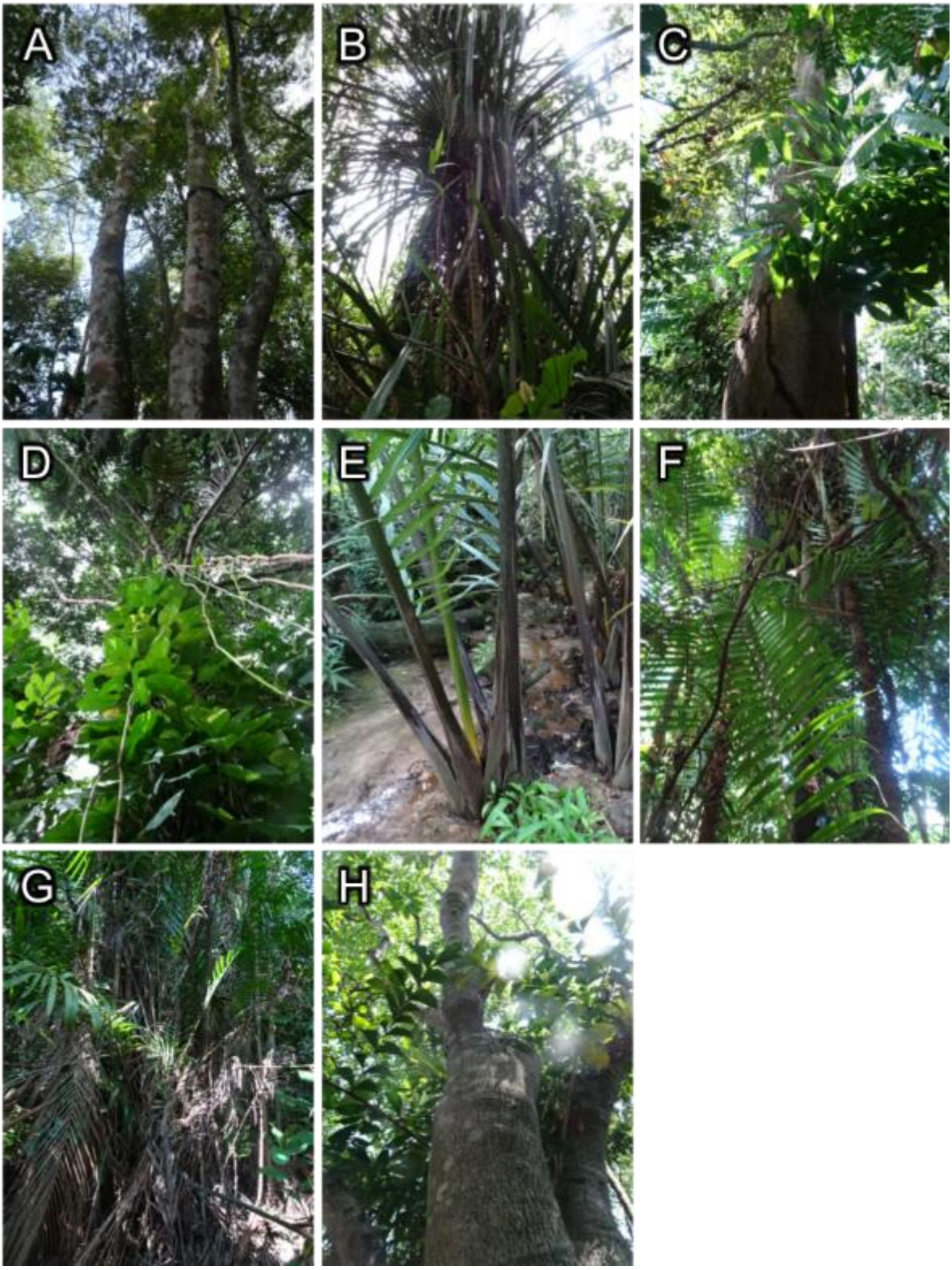


Figure 42: Site Photos of Conservation Significant Large Trees in the Study Area

NOTE: A) Yellow Flame Tree (*Peltophorum pterocarpum*); B) Mengkuang (*Pandanus atrocarpus*); C) Litsea firma; D) Saipan Mango (*Mangifera odorata*); E) Nipah Palm (*Nypa fruticans*); F) Bayas (*Oncosperma horridum*); G) Nibong (*Oncosperma tigillaria*); and H) Pong (*Cerbera odollam*).

7.3.1.6 Species Richness and Survey Adequacy

The species accumulation curve generated for the study area did not reach an asymptote, indicating that the number of sampling plots were inadequate in capturing the species diversity (refer to Figure 43). The proportion of recorded species (151 species) to the estimated true species richness based on plot sampling (179.72–258.82 species) was low, suggesting again that the plot sampling efforts were inadequate to capture the true species richness (refer to Table 19). However, it is important to note that it is unlikely for any ecological survey to capture the true species diversity of a site.

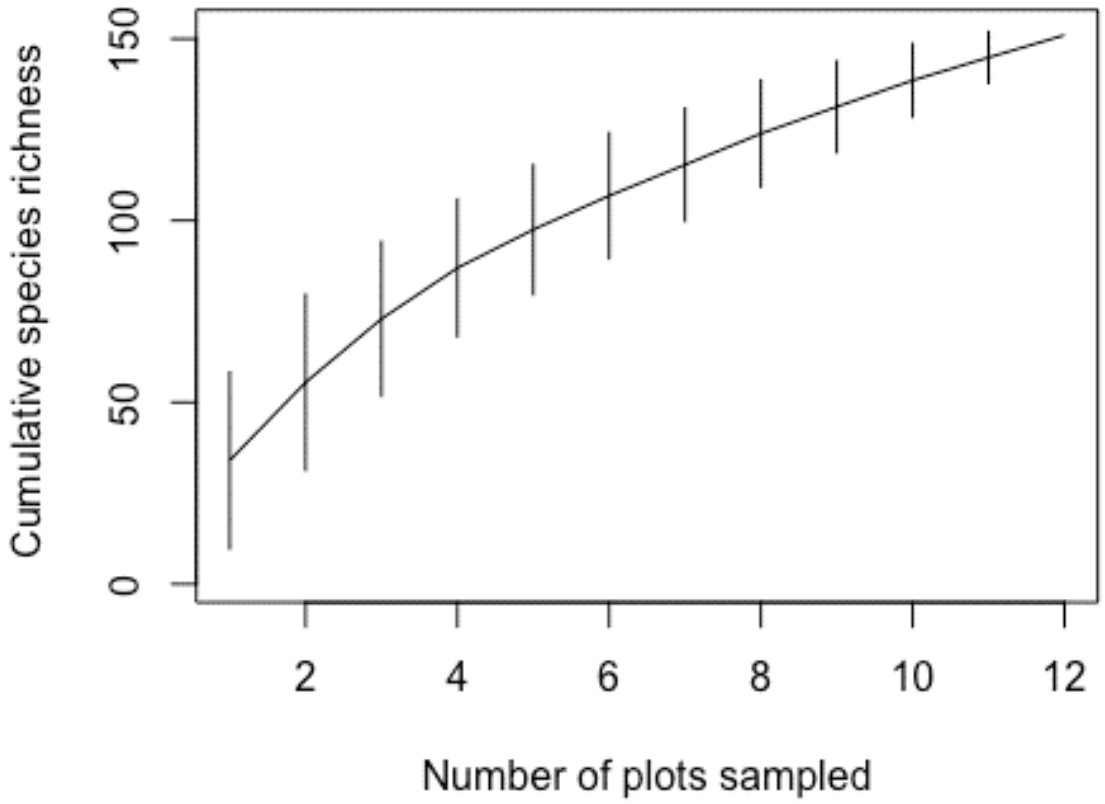


Figure 43: Species Accumulation Curve for the Species Recorded by Plot Sampling

NOTE: The vertical lines indicate the 95% confident intervals from the 100 permutations conducted.

Table 19: Estimated True Species Richness for Flora Sampling Plots

Estimator	Estimated true species richness	Proportion of recorded species to estimated number of species
Chao	250.00 ± 32.43	0.60
Jacknife1	217.00 ± 23.10	0.70
Jacknife2	*258.82*	0.58
Bootstrap	179.73 ± 11.38	*0.84*

NOTE: Values represent estimates ± standard error. The highest estimates are displayed in italics.

7.3.1.7 Forest Character

Most of the sampling plots displayed high similarity in flora composition to one another based on the NMDS analysis and bear little resemblance to short secondary forests in CCNR (refer to Figure 44).

These plots (AP01, AP02, AP05–AP10) are rich in native early secondary forest species such as Wild Cinnamon (*Cinnamomum iners*), Common Tree-Vine (*Leea indica*), Fishtail Palm (*Caryota mitis*) and Simpoh Air (*Dillenia suffruticosa*) indicating that these areas are succeeding towards early native-dominated secondary forests. Two sampling plots, AP03 and AP04, were excluded from analysis as they were located in the mangrove forest.

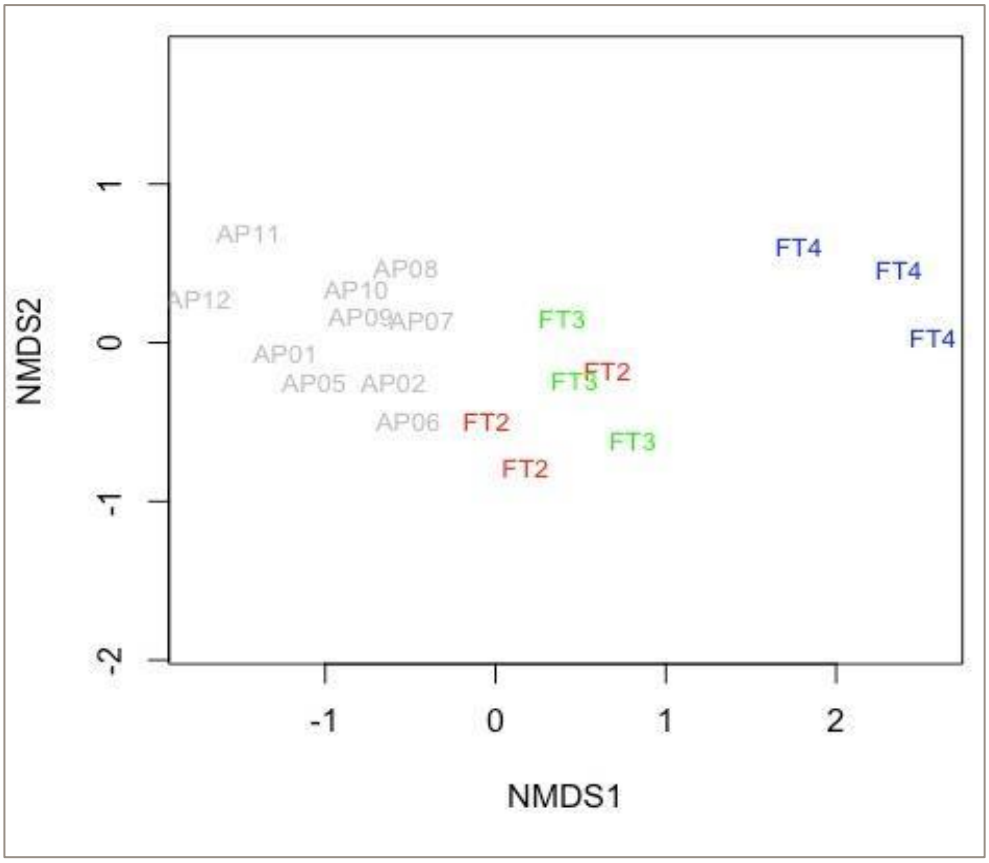


Figure 44: Nonmetric Dimensional Scaling Ordination Plot Comparing Floristic Composition of the 12 Plots

NOTE: Plots beginning with "AP" belong to the study area. The nine plots from the Central Catchment Nature Reserve are denoted by the prefix "FT". FT2 = short native secondary forest; FT3 = tall native secondary forest, and; FT4 = primary forests. Stress value = 0.06.

7.3.1.8 Forest Regeneration

The 10 most abundant species documented in the sampling plots consisted of seven native secondary forest species, namely the Common Ivy Palm (*Arthrophyllum diversifolium*), Fishtail Palm (*Caryota mitis*), Simpoh Air (*Dillenia suffruticosa*), Sea Apple (*Syzygium grande*), Wild Cinnamon (*Cinnamomum iners*), *Litsea elliptica* and Tiup-tiup (*Adinandra dumosa*). Three species, namely Cabbage Tree (*Andira inermis*), Rubber Tree (*Hevea brasiliensis*) and MacArthur's Palm (*Ptychosperma macarthurii*) are exotic naturalised species. All species exhibit recruitment of individuals <5 cm dbh (refer to Figure 45); indicating their continuity to persist within the forest and potential to progress into the next stage of forest succession. All species except Tiup-tiup exhibit high recruitment as shown by the significantly

large seedling and sapling populations compared to mature individuals, suggesting that the forest is in the early successional stages. This complements the NMDS analysis and land use history, which suggest the forest is approximately 20 years old. Without human intervention, these species are likely to persist in the forest and form the primary framework of the forest structure.

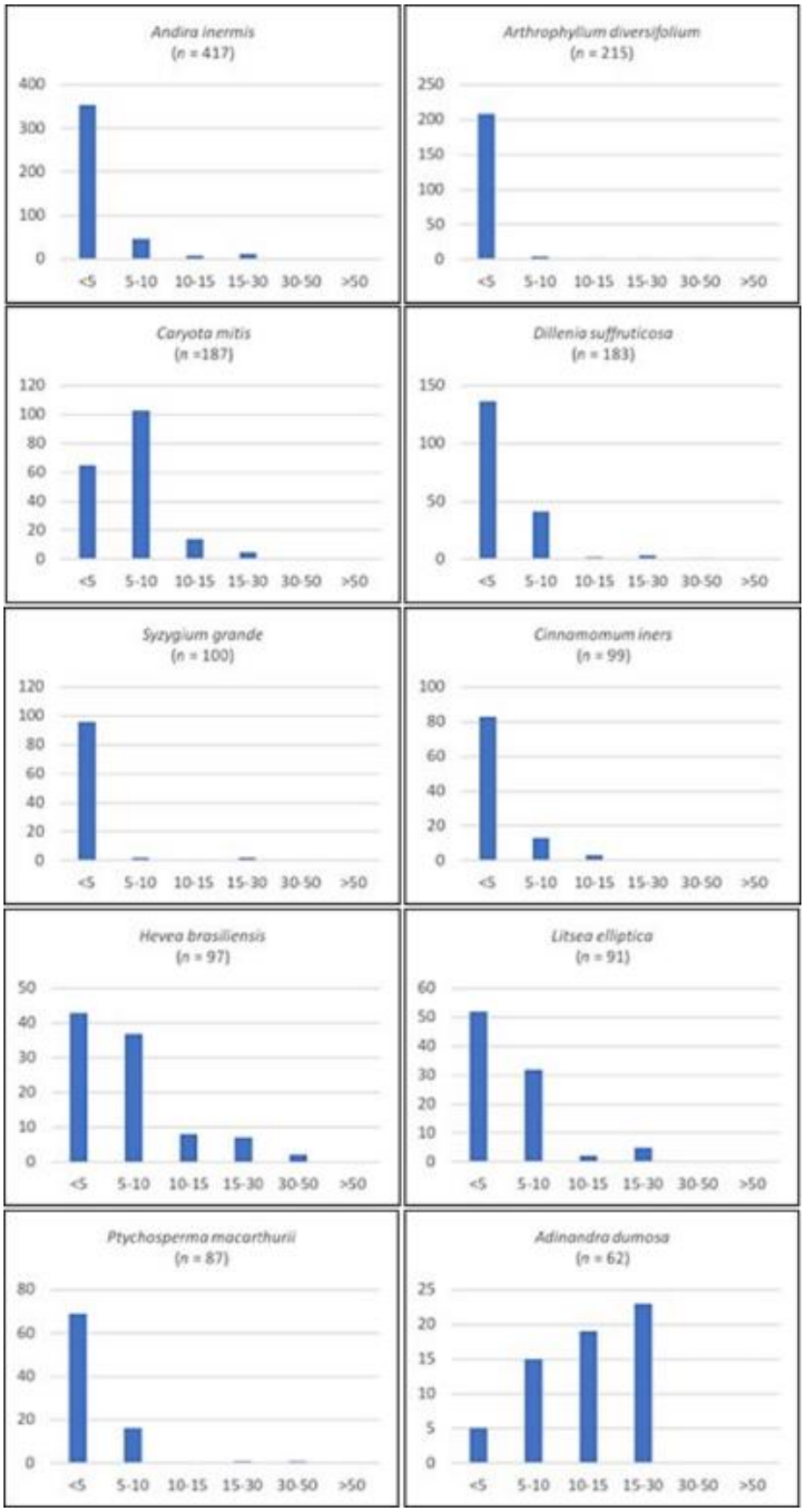


Figure 45: Abundance by Size-class (dbh) of the 10 Most Abundant Tree Species

NOTE: Values in parentheses represent total number of individuals recorded within the sampling plots. Y-axis = number of individuals and X-axis = dbh (cm).

7.3.1.9 Aboveground Biomass

Tropical forests serve an important role in atmospheric carbon sequestration and contain large stocks of terrestrial carbon. In light of the climate change crisis, partly attributed to the loss of large tracts of forests, quantifying forest carbon has become an essential approach to substantiate forest conservation efforts.

The amount of aboveground biomass estimated from significant large trees of class size ≥ 30 cm dbh in the study area was about 48% of the amount estimated by Ngo et al. (2013) for secondary forest plots in Bukit Timah Nature Reserve (BTNR) and 22% of the amount for primary forest plots in BTNR (refer to Table 20). Primary forests and mature secondary forests tend to display higher aboveground biomass due to the greater number of large trees.

In secondary forests, 58% of carbon is contained in soil followed by 38% stored in aboveground biomass (Ngo et al., 2013). The remaining carbon is stored in roots and coarse wood debris. Based on this, the projected total carbon stock in the study area is 3555.82 Mg.

Projected total carbon stock in study area = Total AGB x 0.50* x (100/38) = 3555.82 Mg
* Based on assumption that 50% of the aboveground dry mass forms carbon stock
# Based on assumption that the aboveground biomass only makes up 38% of the total carbon stock

Tembusu (*Cyrtophyllum fragrans*), Moluccan Albizia (*Falcataria moluccana*), Common Acacia (*Acacia auriculiformis*), *Ixonanthes reticulata*, Common Rhu (*Casuarina equisetifolia*), Api-api Bulu (*Avicennia rumphiana*) and Ordeal Tree (*Erythrophleum suaveolens*) collectively made up 72% of the total aboveground biomass of the study area (refer to Figure 46). These species represent the most abundant large trees on site.

Table 20: Aboveground Biomass (AGB) and Carbon Stock Estimates of Large Trees of dbh ≥ 30 cm

AGB and carbon stocks estimated from trees of dbh ≥ 30 cm	Project Area	Primary forest plots in BTNR	Secondary forest plots in BTNR
Total AGB (Mg)	2702.41	N.A.	N.A.
AGB per hectare (Mg ha^{-1})	55.72	258.66	115.66
Total Carbon stocks from AGB (Mg)	1351.21	N.A.	N.A.
Carbon stocks per hectare (Mg C ha^{-1})	27.86	129.33	57.83

NOTE: Results were compared with a study conducted by Ngo et al. (2013) in Bukit Timah Nature Park (BTNR).

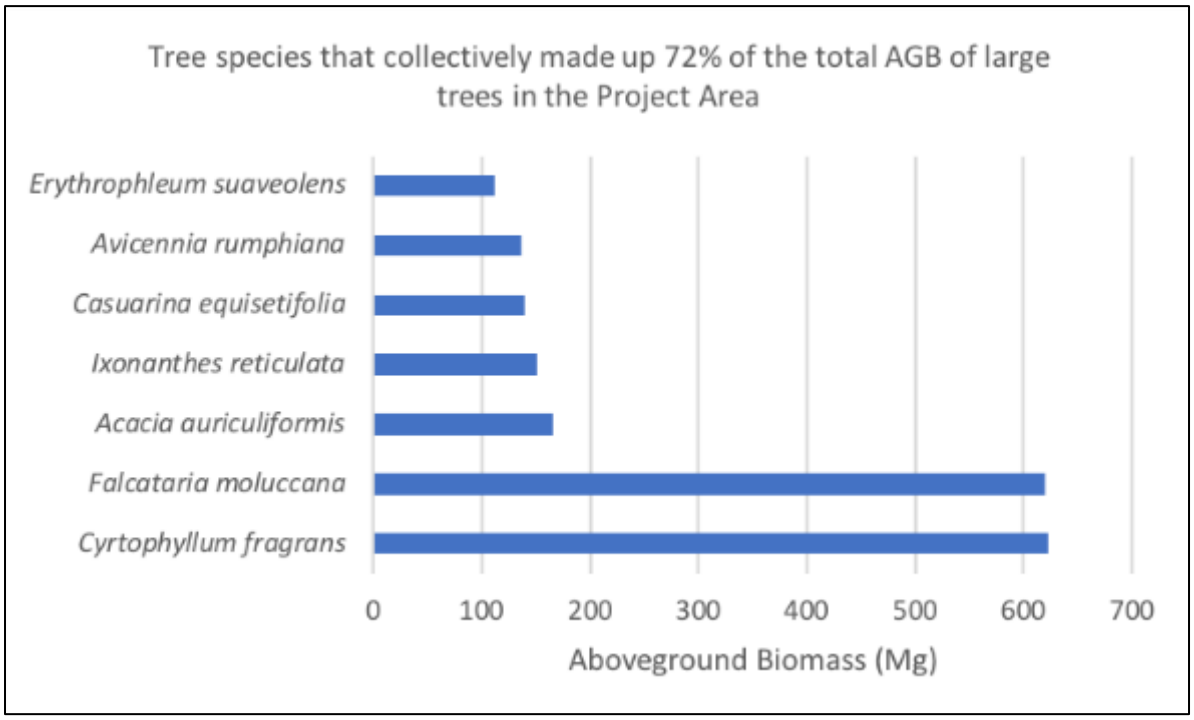


Figure 46: Total Aboveground Biomass (AGB) of Species Making up 72% of the Total AGB Estimated from Large Trees

7.3.2 Arboriculture Assessment

The arboriculture assessment reports are provided in **Appendix O**.

7.3.3 Fauna Field Assessment Results

Based on the desktop assessment, 585 species of probable occurrence were identified, comprising mainly of birds (158 species; 27.0%) and butterflies (146 species; 24.6%) (refer to Table 21 and **Appendix E**). The field assessment recorded 246 species, confirming the presence of 42.1% of the species of probable occurrence (refer to Table 21 and **Appendix E**). Amongst the species recorded, eight were not of probable occurrence, including one mollusc, two butterfly, one fish, one amphibian and three bird species. They were not considered probable due to lack of known natural distribution records and known habitat preferences, as discussed in detail in the following sections. The full set of data from the fauna field assessments is available in **Appendix G**.

A total of 55 probable species were of conservation significance, dominated by birds and reptiles; they are also listed by status in **Appendix F**. These species are of conservation significance primarily due to their national conservation status of Vulnerable to Nationally Extinct. The three nationally extinct species are butterflies that were revised with a less threatened status (Khew, 2015) since the publication of the Singapore Red Data Book (2008). However, no probable species of conservation significance were recorded from mollusc, fish and amphibian fauna groups. The field assessment recorded 14 conservation significant species, made up of one odonate, two butterflies, two reptile and nine bird species (refer to **Appendix F**). Three conservation significant birds were not expected; they are discussed further in section below.

Based on the field assessment, the highest faunal species richness (n=37) was recorded in northern Admiralty Park outside the future residential development site (T2_16; refer to Figure 47). Species recorded are dominated by birds, butterflies and odonates. However, there is no clear hotspot for conservation significant species as they are distributed across the site and in various vegetation types

(refer to Figure 48). The Admiralty Park comprises of many open spaces with planted food plants that are attractive to several fauna species. Being relatively open, it is also relatively easy to detect fauna in Admiralty Park, which may have contributed to the observed hotspot in Admiralty Park. However, species that use the Park are also likely to use the future residential development site for resting, breeding and shelter.

The estimated true species richness for the aquatic and terrestrial fauna groups was greater than the number of species recorded (refer to Table 22). This suggests that the sampling effort was not sufficient in uncovering the true species diversity within the study area. These values are based on transect effort, and do not include incidental sightings and camera trapping data. The estimates closely matched the number of recorded species for odonates, amphibians, and mammals because these groups had very few species recorded. The estimate for all other fauna groups was slightly higher than the number of species recorded. Birds had the highest estimate likely because the high number of recorded species relative to the comparatively low sampling effort (refer to Table 22). The estimate for molluscs was surprisingly low given how diverse the group is. Overall, the species estimation results suggest that additional surveys are needed to better approximate the true species richness for most fauna groups. However, it is important to note that it is unlikely for any ecological survey to capture the full species diversity.

The sample-based rarefied species accumulation curve for all aquatic fauna groups combined and for all terrestrial fauna groups combined further demonstrates that the sampling effort was insufficient in uncovering the total aquatic and terrestrial fauna species diversity at the core study area (refer to Figure 49 and Figure 50). Similarly, for terrestrial and aquatic fauna, neither species curve reaches asymptote, but instead they all continue increasing. These results highlight the importance of taking into consideration the list of probable species when preparing the impact assessment since evidently the estimated species richness was not detected.

Table 21: Summary of the Total Diversity of Extant, Probable and Recorded Fauna Species at the Core Study Area

Fauna Group	Total # of extant species in SG	Total # of probable species (CS species)	Total # of recorded species (CS species)	Total # of recorded species not on probable list
Molluscs	1,264	72 (0)	27 (0)	1
Odonates	132	45 (3)	19 (1)	0
Dragonflies	82	33 (0)	16 (0)	0
Damselflies	50	12 (3)	3 (1)	0
Butterflies	334	144 (7)	50 (2)	2
Fishes	--	49 (0)	25 (0)	1
Decapod crustaceans and horseshoe crabs	--	41 (8)	11 (0)	0
Herpetofauna	132	57 (14)	25 (2)	1
Amphibians	29	13 (0)	10 (0)	1
Reptiles	103	44 (14)	15 (2)	0
Birds	397	158 (21)	78 (9)	3

Fauna Group	Total # of extant species in SG	Total # of probable species (CS species)	Total # of recorded species (CS species)	Total # of recorded species not on probable list
Mammals	55	19 (2)	11 (0)	0
Non-volant Mammals	30	12 (1)	8 (0)	0
Bats	25	7 (1)	3 (0)	0
Total	**>2,314**	**585 (55)**	**246 (14)**	**8**

NOTE: The total number of probable and recorded conservation significant (CS) species are indicated in the brackets.

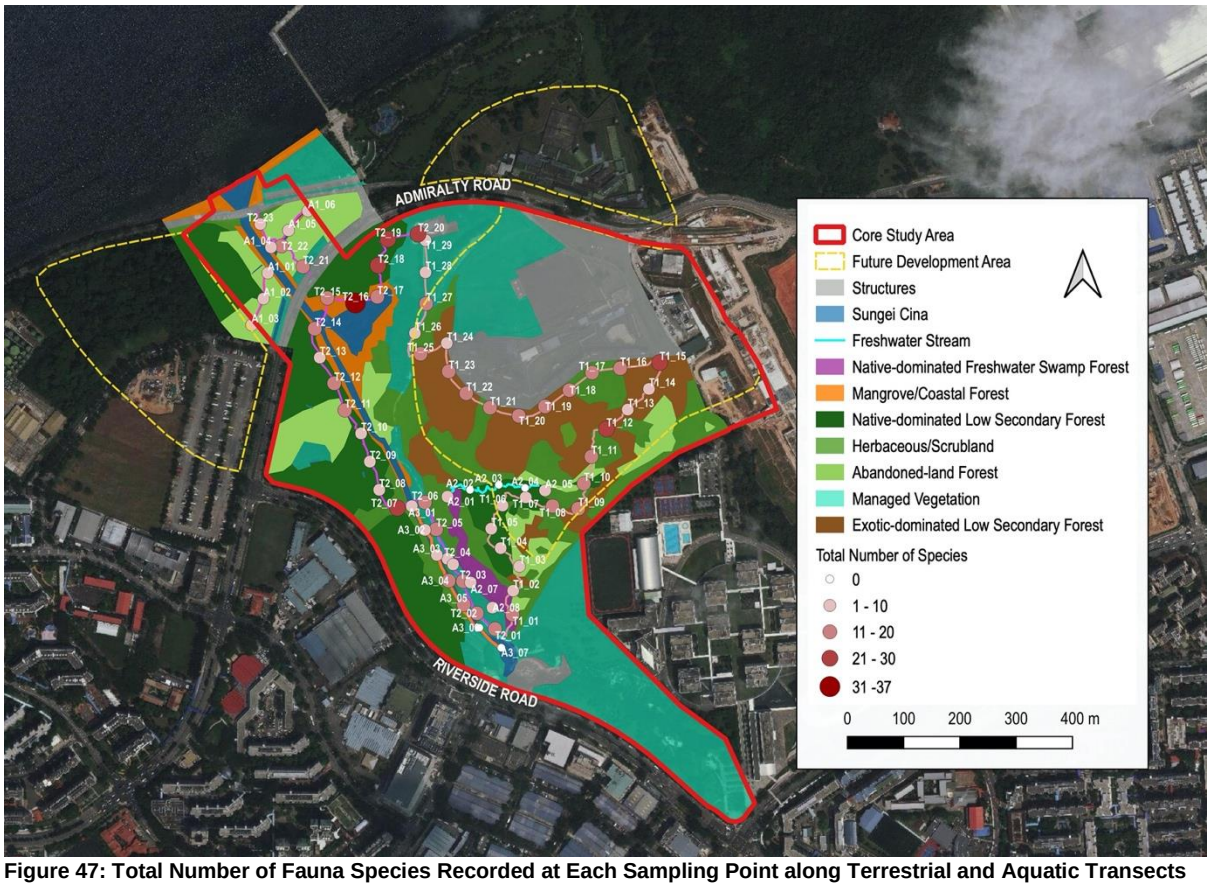


Figure 47: Total Number of Fauna Species Recorded at Each Sampling Point along Terrestrial and Aquatic Transects

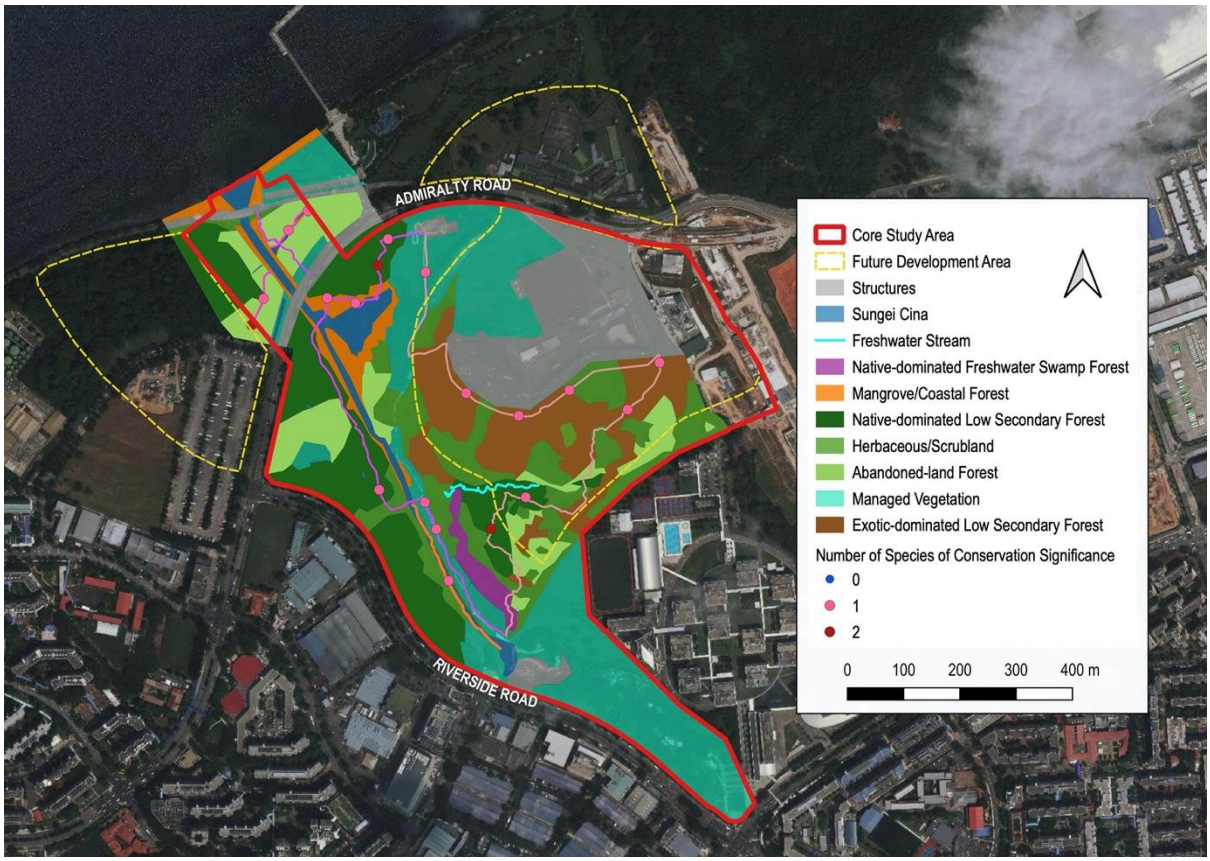


Figure 48: Total Number of Conservation Significant Fauna Species Recorded at Each Sampling Point along Terrestrial and Aquatic Transects

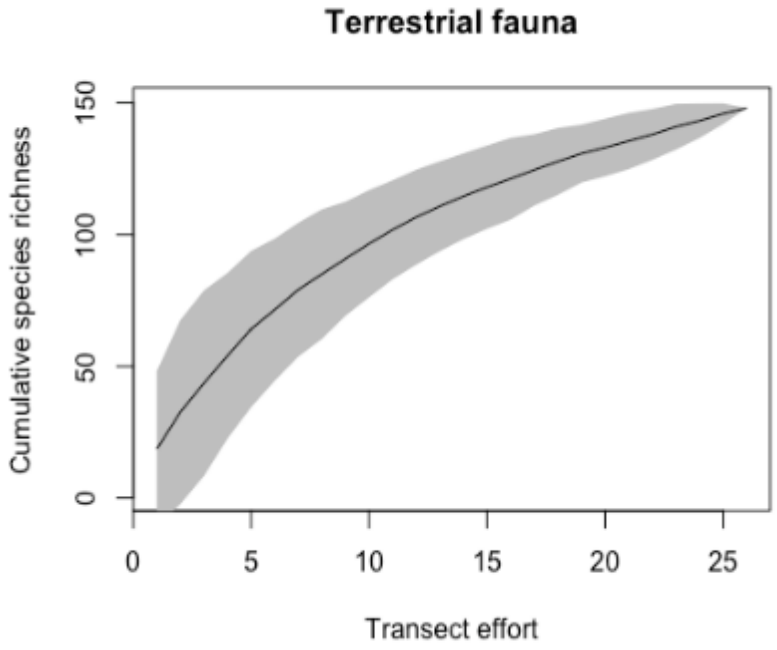


Figure 49: All Terrestrial Fauna Groups Combined Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

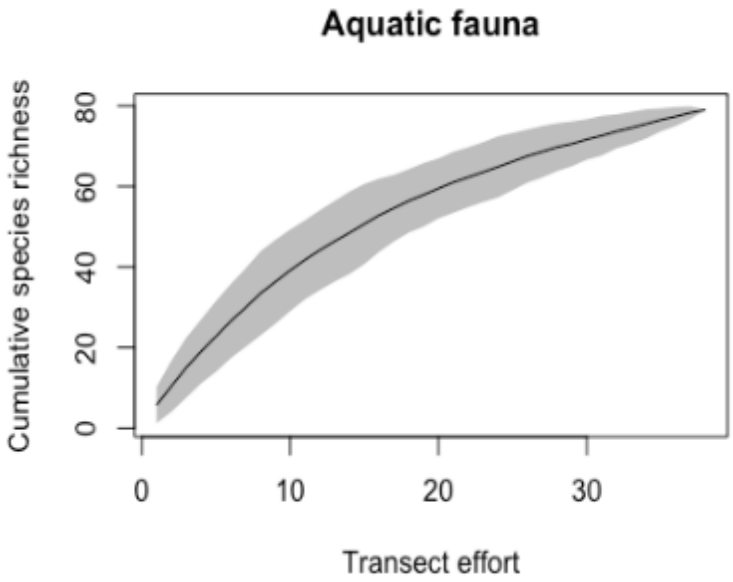


Figure 50: All Aquatic Fauna Groups Combined Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

Table 22: Total Number of Species Recorded and Estimated True Species Richness for Each Terrestrial Fauna Group

Terrestrial Fauna Groups	Recorded	*n*	Estimated True Species Richness			
			Chao	JK1	JK2	Bootstrap
Molluscs	27	13	38.08 ± 8.51	38.08 ± 4.81	*43.58*	32.05 ± 2.67
Odonates	15	9	17.22 ± 2.68	19.44 ± 2.39	*19.93*	17.29 ± 1.60
Butterflies	45	6	60.74 ± 8.75	64.17 ± 10.05	*72.03*	54.03 ± 5.86
Fishes	24	15	*52.23 ± 26.67*	34.27 ± 3.90	42.19	28.25 ± 2.01
Decapod crustaceans and horseshoe crabs	13	10	*26.50 ± 12.27*	18.40 ± 2.91	23.2	15.18 ± 1.50
Amphibians	10	10	15.63 ± 6.84	14.50 ± 2.01	*17.08*	11.99 ± 1.32
Reptiles	13	14	*29.71 ± 21.96*	18.57 ± 2.27	22.92	15.33 ± 1.23
Birds	74	15	96.87 ± 13.44	93.60 ± 7.82	*104.56*	82.86 ± 4.80
Mammals	6	12	6.92 ± 2.05	7.83 ± 1.30	*9.5*	6.74 ± 0.68

NOTES: Values represent estimates ± standard error. The highest estimate for each fauna group is displayed in italics.
n = transect surveys or trapping days; values do not tally because most surveys for different fauna groups were combined.
DC&HC = decapod crustaceans and horseshoe crabs.
Incidental observations are not included in the recorded column nor in the analyses.

7.3.3.1 Species Richness and Distribution

7.3.3.1.1 Odonates

The Malay Peninsula lies near the epicentre of odonate diversity and is exemplified by high endemicity (Kalkman *et al*., 2008). Singapore contains a total of 132 extant species, constituting 82 dragonflies and 50 damselflies. Of these, 45 species (34.1%) were determined to be of probable occurrence in the core

study area and 19 species were recorded (refer to Table 21 and **Appendix E**). The recorded species were made up of 16 dragonflies and three damselflies. The species accumulation curve shows signs of flattening towards the tail-end of the curve, indicating that a considerable number of odonate species of the core study area was recorded (refer to Figure 52). This is supported by the species estimator which suggests that the estimated true richness of 17 to 20 is close to the recorded richness (refer to Table 22).

Most of the species of probable occurrence are widespread and common throughout Singapore. Yet, three (all damselflies) are restricted and rare, and of national conservation significance (refer to Table 21 and **Appendix F**). They are found in uncommon habitats of mangroves, swampy forest and sluggish forest streams – Arthur's Midget (*Mortonagrion arthuri*), Variable Featherlegs (*Copera vittata*) and Collared Threadtail (*Prodasineura collaris*) respectively. Only the Arthur's Midget was recorded. The Sungei Cina mangrove present within the core study area is a stronghold of the Arthur's Midget population (Tang *et al*., 2010). It was most regularly sighted along the aquatic transect (A1) at Woodlands Waterfront mangrove, and to a lesser extent, the mangrove at Admiralty Park (T2_15 to T2_18).

The highest richness of odonates (n=5; refer to Figure 51) was recorded at the mangrove tributary at Woodlands Waterfront (A1_06) and swampy area within Admiralty Park (A2_07) with differing assemblages. Species recorded at A1_06 were characterised by those associated with mangrove habitats including the conservation significant Arthur's Midget. In contrast, those recorded at A2_07 are associated with open areas and are mainly widespread and common. Although not listed as a conservation significant species, one individual of Red-tailed Sprite (refer to Figure 70) was recorded at the swampy area (A2_08), which is likely fed by the freshwater stream (A3) from the future residential development area. The damselfly is widespread but uncommon due to rarity of swampy habitats, which only covers 0.11% of Singapore's land area (Yee et al., 2011).

Within the future residential development area, sightings of odonates along the freshwater stream (A2) are few (refer to Figure 51). These species are also widespread and common. However, some species were sighted as incidental records along the terrestrial transects, such as the Sultan (*Camacinia gigantea*) and Common Redbolt (*Rhodothemis rufa*), showing that the forested area is being used by odonates, likely as resting and shelter sites. These species were not recorded along the aquatic transects during surveys.

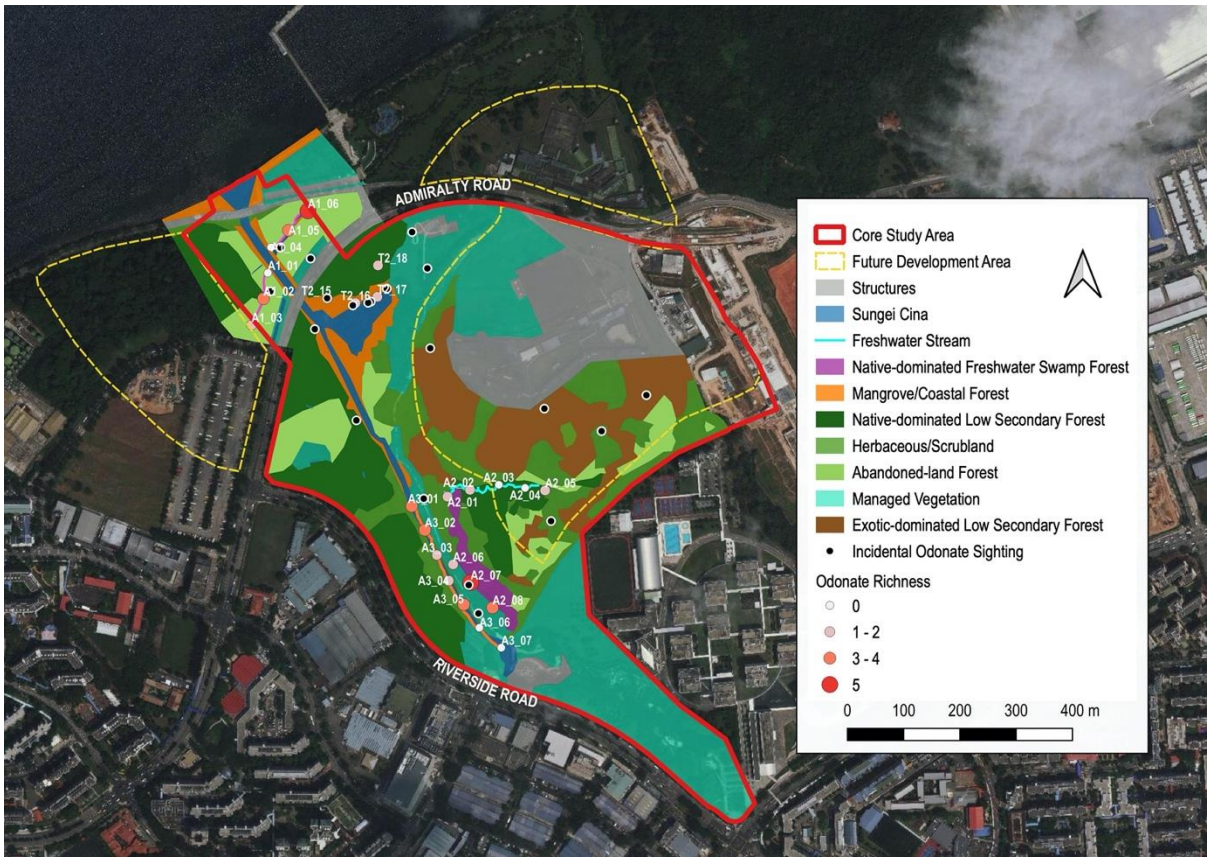


Figure 51: Number of Odonate Species Recorded at Each Sampling Point along the Targeted Transects

NOTE: Incidental records of odonates were also indicated.

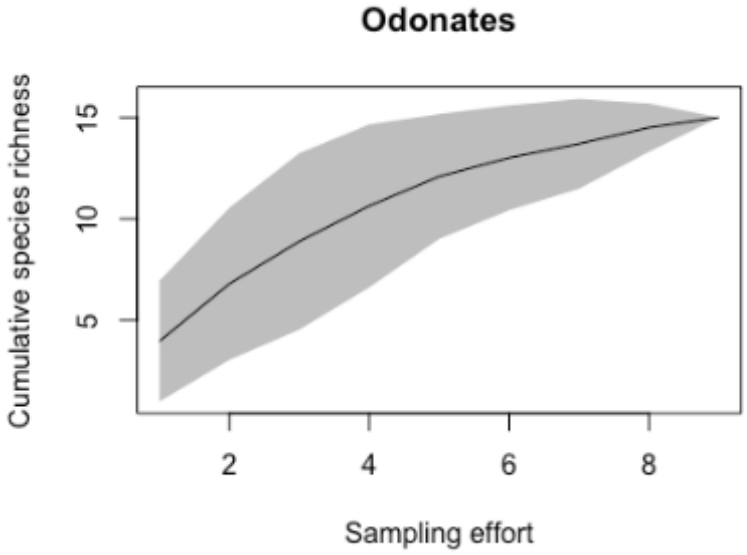


Figure 52: Odonate Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

7.3.3.1.2 Butterflies

The latest assessment placed the number of butterfly species recorded in Singapore between 1990 to December 2017 as 478 (Anuj *et al*., 2018). Based on this assessment, a total of 334 butterfly species are recognised as extant, including nine species that are considered to be potentially extirpated due to lack of sightings in the last 10 years. Of the 301 species recognised as residents, five species were migrants and 19 were vagrants; these non-residents either never recorded before or have been declared extirpated for more than 50 years (*ibid*).

Since butterflies are host-specific, the high extinction of plant species from rapid, widespread deforestation resulted in the successive extinction of many butterfly species (Koh *et al*., 2004; Khew, 2015). Accordingly, the diversity of butterflies at a particular site is largely dependent on the presence of specific larval host plants. In addition, the presence of native plant species is important for the survival of forest-dependent butterflies as many of these species are flower-specialists that only feed on native plant species (Jain *et al*., 2016). Thus, habitats with a greater diversity of native plants are of higher quality for butterflies. Based on the presence of host plants or suitable habitat conditions, 144 butterfly species were deemed of probable occurrence within the core study area, accounting for 41.11% of Singapore's 334 species (refer to Table 21 and **Appendix E**). A total of 48 species were recorded within the core study area (refer to Table 21 and **Appendix E**). The species accumulation curve shows signs of flattening towards the tail-end of the curve, indicating that a considerable number of butterfly species of the core study area was recorded (refer to Figure 54), supported by the species estimator of 54 to 72 species (refer to Table 22).

Most of the species of probable occurrence are widespread and common throughout Singapore. Yet, 25 species are considered moderately rare to rare. A total of seven species of conservation significance were expected, and two was recorded (refer to Table 21 and **Appendix F**). The nationally vulnerable Ancyra Blue (*Catopyrops ancyra;* refer to Figure 53 and Figure 70) was recorded once near the mangrove (T2_19). It is considered a newly discovered species and its accorded status in the SRDB is likely due to confusion in field identification than true rarity (Anuj *et al*., 2018). The nationally Vulnerable Common Birdwing (*Troides helena cerberus*) was recorded incidentally at the Woodlands Waterfront Park once.

Two species recorded were not on the probable list, namely the Malayan Plum Judy (*Abisara saturata kausambioides*) and Malayan Jester (*Symbrenthia hippoclus selangorana*). The Malayan Plum Judy was not expected as its host plant (*Ardisia elliptica*) is an uncommon coastal species, other than those planted. However, 26 individuals of this plant species were recorded within the core study area, mainly at the forest at Woodlands Waterfront. The butterfly was recorded nearby on the forest edge beside the prison (T1_19). The Malayan Jester was a surprising record and is likely to be a vagrant, which flew in from Malaysia where is it known to occur (Khew, 2015). It is only known from one location in western Singapore and its host plant is unknown (Khew, 2015). It was recorded within Admiralty Park near the mangrove boardwalk (T2_18) during survey; a significant record as it represents a new location record for this species in Singapore.

Butterflies were recorded across the core study area. Generally, areas of higher butterfly richness were observed in the northern part of the core study area (T1–16, T1_19, T2_16, T2_18 and T2_20), with the highest richness of butterflies (n=20) recorded at T2_20 which is adjacent to the carpark (refer to Figure 53). These areas are characterised by open habitats where butterflies are usually active. Furthermore, they may also be attracted by the planted host and food plants within the park. Despite this, many

butterfly species such as the Palm King (A*mathusia phidippus phidippus*) are forest-dependent species and require the forest for survival.

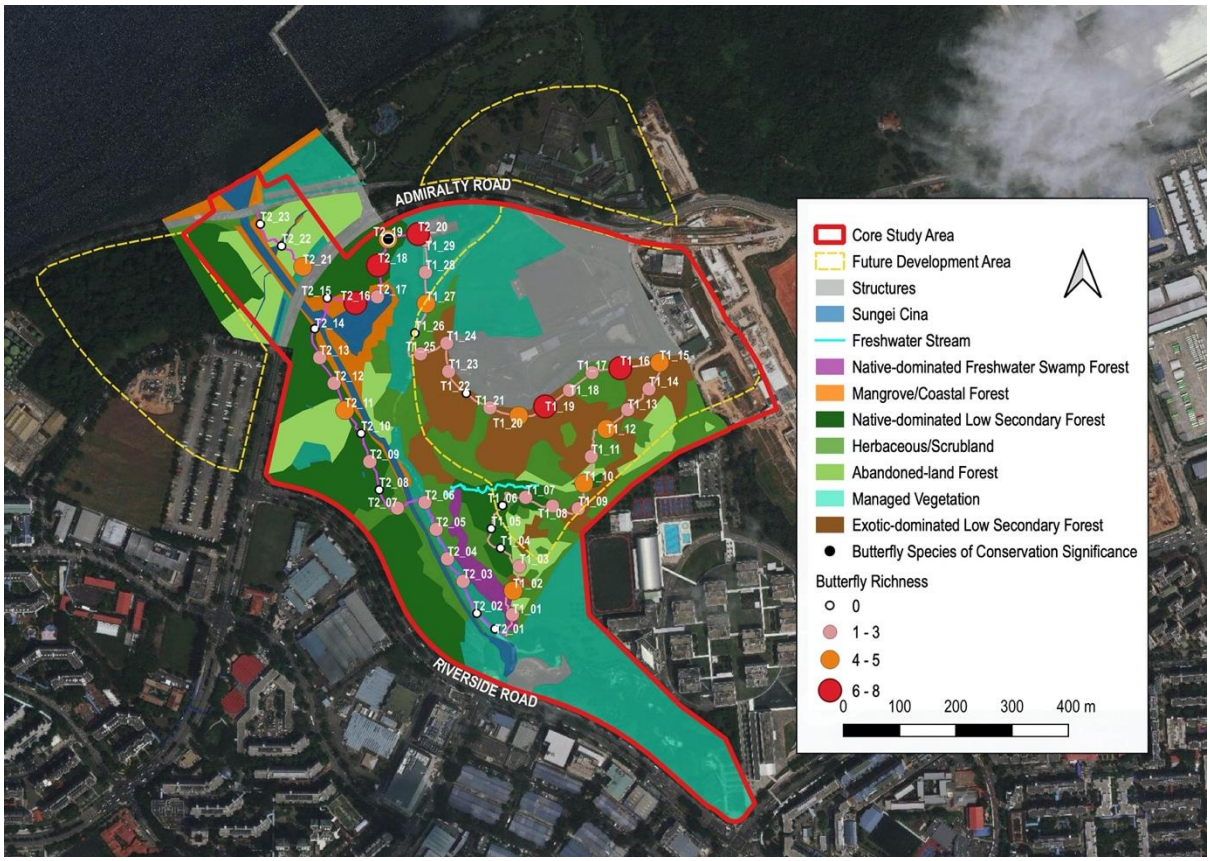


Figure 53: Number of Butterfly Species Recorded at Each Sampling Point along the Terrestrial Transects

NOTE: Location of the conservation significant Ancyra Blue (*Catopyrops ancyra*) is indicated.



Figure 54: Butterflies Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

7.3.3.1.3 Molluscs

Being one of the largest phylum, the molluscans consists of over 50,000 recorded species, of which 30,000 are found in marine habitats (Gosling, 2003). Situated between the Indian and Pacific Oceans, Singapore provides a favourable environment for supporting a rich diversity of molluscs, accounting for 1,264 species recorded to date (Tan & Woo, 2010). Within the molluscan phylum, there are six major classes, including the more commonly seen classes – Bivalvia and Gastropoda. Within the core study area, most of the mollusc diversity is expected from the coastal and mangrove habitats while a low diversity is expected at the freshwater habitats due to the lack of optimal substrate (e.g. tree roots).

A total of 65 mollusc species were deemed of probable occurrence (5.1% of total extant species), with 27 species being recorded during site surveys (refer to Table 21 and **Appendix E**). As there is a lack of adequate information on mollusc species in Singapore to accurately determine their probable occurrence within the core study area, the probable list was generated based on a conservative principle, thus contributed to the low number of probable mollusc species. The species accumulation curve shows signs of flattening towards the tail-end of the curve, indicating that a considerable number of mollusc species of the core study area was recorded (refer to Figure 56), supported by the species estimator of 32 to 44 species (refer to Table 22).

No mollusc species of conservation significance were probable or recorded. Species recorded were all common and expected to occur in a mangrove environment, expect for the highly invasive Land Snail (*Achatina fulica*). The shell of this species was only recorded at the Woodlands Waterfront mangrove (ML_02) and was likely washed into the mangrove from the surrounding land during a heavy rainfall.

In comparison to the NParks survey in 2006, our study recorded eight of the 18 species documented. A higher richness was also observed from our study (n=27) as compared to NParks study in 2006. The Red-rimmed Melania (*Melanoides tuberculata*) that was noted as rare in NParks study, was also recorded once in our study at the Woodlands Waterfront mangrove (ML_02). However, some species observed to be common or very common in NParks study (2006) were not documented in our study. Examples are Cat's Ear Cassidula (*Cassidula aurisfelis)* and Red Berry Snails (*Sphaerassiminea miniata)*.

The richness of mollusc was similar across the sites, with the highest richness (n=12) recorded at the seaward, coastal area of the Woodlands Waterfront mangrove (ML_05) (refer to Figure 55). This difference in species richness might be due to a difference in environments. Due to large amounts of freshwater inputs from a canal at the upstream of Sungei Cina (A3_05) into the Sungei Cina mangrove, areas closer to the upstream (ML_01 to ML_02) are expected to have a lower salinity, while areas closer to the coast (ML_03 to ML_05) are expected to have higher salinity closer to that of a mangrove environment. Even though molluscs species are relatively tolerant of changes in salinity, marine molluscs typically do better in water with salinity closer to that of seawater, thus may explain for the higher richness of marine mollusc species nearer to the coast.

The most commonly recorded species were the Marsh Clams (*Gelonia expansa*) and non-native Charru Mussel (*Mytella strigata*), which were recorded at all sites (ML01–ML05). These species are highly adaptable and can survive harsh conditions of the mangrove, allowing them to persist. The Marsh Clams have features to survive within the acidic conditions of the mud layer in mangrove mudflat environment and wide fluctuations in salinity (Isaji, 1993). On the other hand, the Charru Mussel is now considered well-established and spreading rapidly in Singapore, after being first observed in 2016 (Lim *et al*., 2018). Large numbers have been documented along the northern coast of Singapore such as

Lim Chu Kang and Pasir Ris (*ibid*). Therefore, its presence within the core study area was not surprising. In addition, due to historical site disturbances from the construction of naval base and jetties in the intertidal area, the presence of numerous invasive species was expected. In contrast, NParks (2006) recorded the Belitong Snails (*Terebralia sulcata*) and Red Berry Snails (*Sphaerassiminea miniata)* to be the most commonly occurring species, which is different from what was observed in our study.

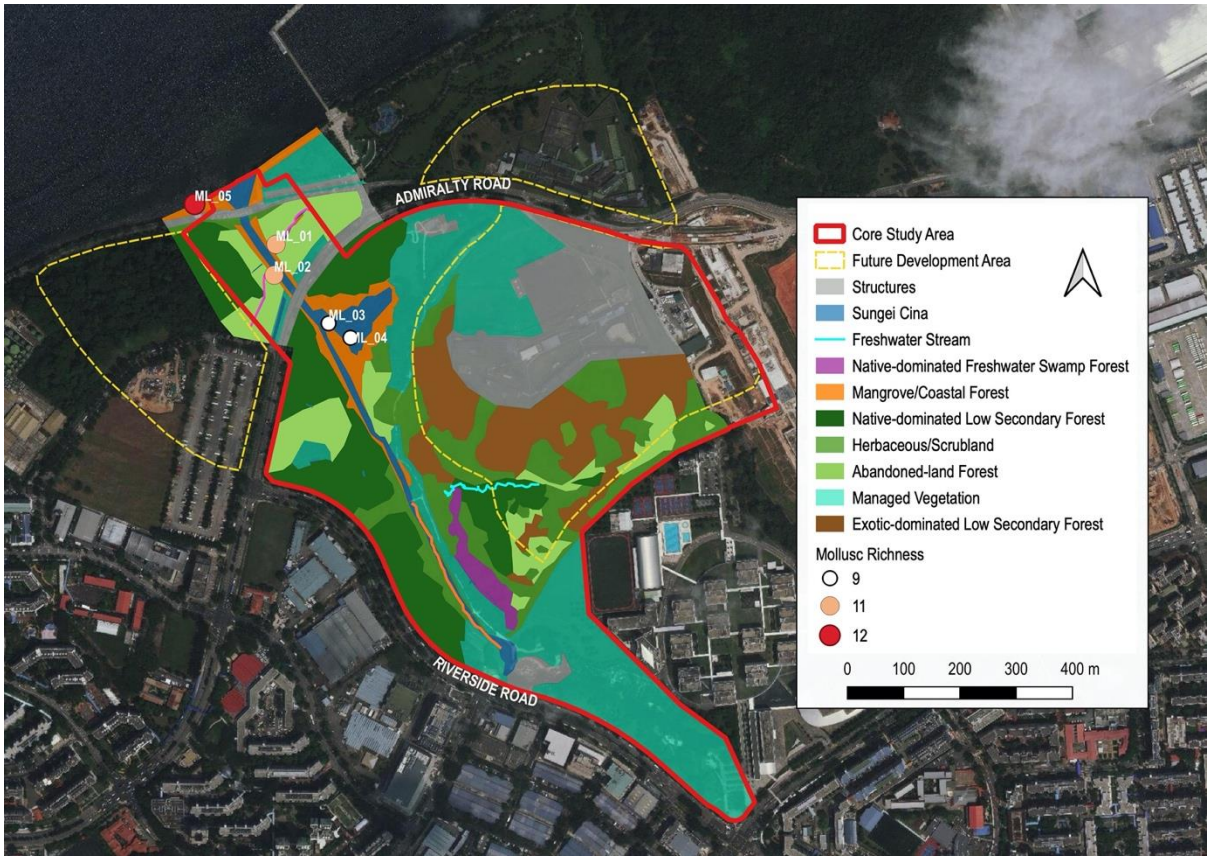


Figure 55: Number of Mollusc Species Recorded at Each Mollusc Sampling Point

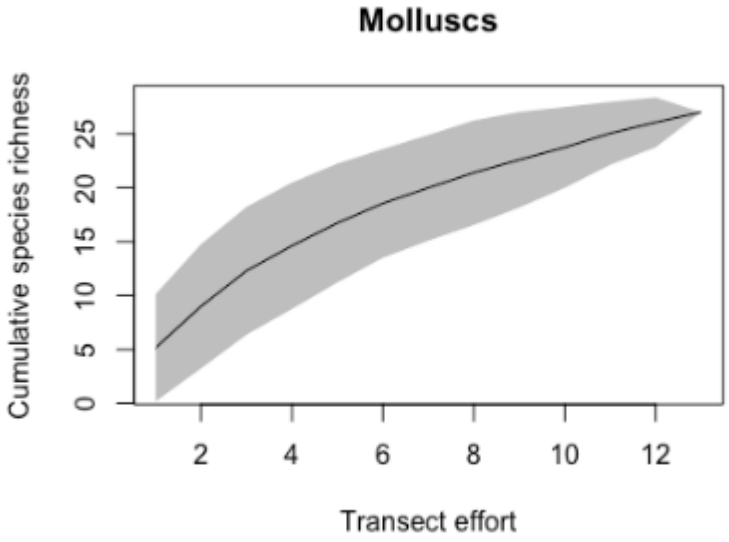


Figure 56: Molluscs Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

7.3.3.1.4 Fishes

Singapore's freshwater fish populations have been dwindling since the 1850s as a result of deforestation, reservoir impoundment and channel concretization, which changed the biophysical environment of stream habitats, especially of forest streams (Lim and Ng, 1990). To make matters worse, the release of aquarium species that compete with native species pose an ever-intensifying threat. A total of 85 species of freshwater fishes are known to occur in Singapore, of which a large proportion (52 species; Ng and Lim, 1997) are non-native. Estimates vary on the number of species that have gone extinct, ranging from 11 (Giam *et al*., 2011) to 26 species (Ng and Lim, 1997). Regarding the remaining native species, most are restricted to forested streams within BTNR and CCNR, and eight are only known from Nee Soon Swamp Forest (Ng and Lim, 1997). Similarly, the fish populations in the coastal and mangrove habitats have also been diminished by coastal works such as reclamation. Earlier literature documented 150 fish species within the mangroves of Singapore (Low and Chua, 1994).

A total of 48 species were deemed of probable occurrence within the core study area (refer to Table 21 and **Appendix E**). No species of conservation significance were probable or recorded. Based on visual surveys, tray-netting and cast-netting, 25 species were recorded (refer to Table 21 and **Appendix E**). The species accumulation curve shows signs of flattening towards the tail-end of the curve, indicating that a considerable number of fish species of the core study area was recorded (refer to Figure 58), supported by the species estimator of 28 to 52 species (refer to Table 22).

Species recorded were largely common and adaptable to a variety of habitats, other than the mudskippers that are restricted to the mangroves. The most commonly recorded species were the Javanese Ricefish (*Oryzias javanicus*) and Malayan Pygmy Halfbeak (*Dermogenys collettei*). The former is fully adaptable to both fresh and saltwater environments at all life stages (Inoue and Takei, 2002), accounting for its high numbers within the estuarine environment along Sungei Cina (A3). Similarly, the Malayan Pygmy Halfbeak is adaptable to forest streams to brackish mangrove streams, thus explaining its widespread presence along the aquatic transects (A1–3), particularly along the Sungei Cina (A3). Amongst the species recorded, one was not on the probable list – the EstuarineMoray (*Gymnothorax tile*) which is usually found in undisturbed shores, amongst coral rubble and reefs. Other species recorded are tolerant to certain extent of brackish water, thus explaining their presence in Sungei Cina.

Based on tray-netting along the aquatic transects, a higher richness of fish species (n=8-10) was observed at the upstream of Sungei Cina (A3_03 to A3_05) (refer to Figure 57). This might be due to the mix of freshwater output from the large storm canal and flow of seawater from the coast that provides a water salinity level that allows for both mangrove and freshwater species to occur together. The cast-netting surveys at the Woodlands Waterfront and Admiralty Park mangroves yielded the same number of species (n=7), with differing assemblage but overall fish species composition present at both sites were expected to be similar. Cast nets captures were made of bigger fish species such as the Mangrove Cardinal (*Yarica hyalosoma*), Green-spotted Puffer Fish (*Dichotomyctere nigroviridis*) and Green Chromide (*Etroplus suratensis*). These data supplemented the aquatic surveys with tray-netting.

The freshwater stream within the future residential development area (A2) is not expected to support many, if not any, true freshwater fish species due to historical disturbances from past kampung land use, lack of connectivity to other water sources, and its ephemeral condition with long extended dry periods. The ephemerality nature is shown by the observation that water was recorded only once (19-

May-18) out of the four aquatic surveys. Based on the survey, only four species were recorded – the non-native Guppy (*Poecilia reticulata*), and the native Javanese Ricefish (*Oryzias javanicus*), Whitespot (*Aplocheilus armatus*; refer to Figure 70) and Malayan Pygmy Halfbeak (*Dermogenys collettei*).

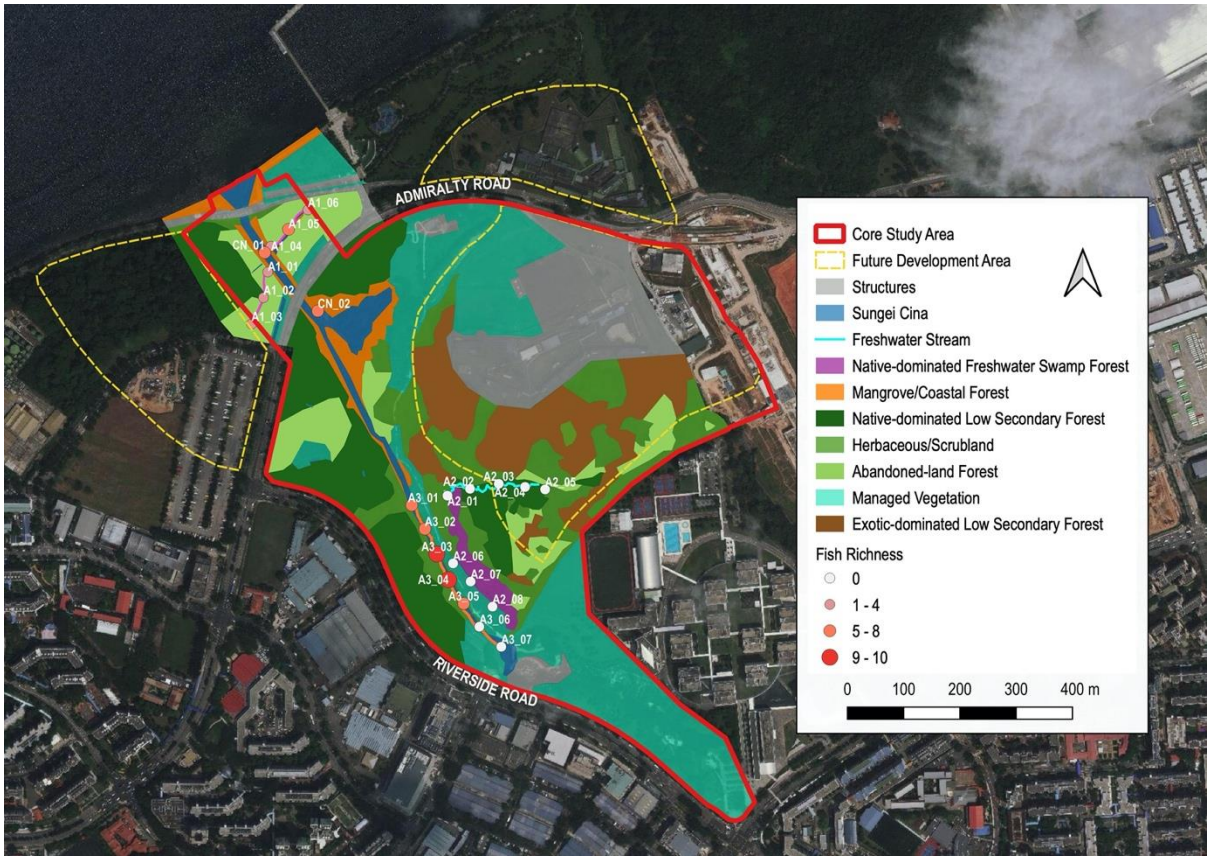


Figure 57: Number of Fish Species Recorded at Each Aquatic Sampling Point

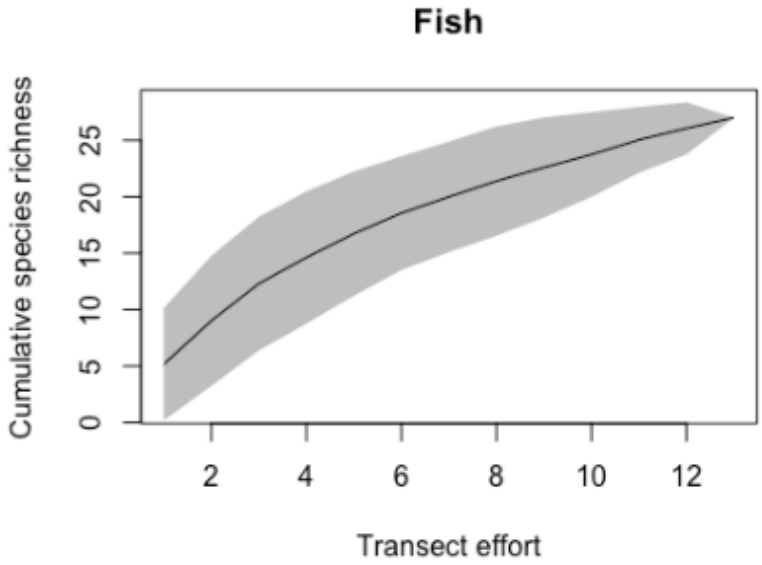


Figure 58: Fish Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

7.3.3.1.5 Decapod Crustaceans and Horseshoe Crabs

In Singapore, the decapod crustaceans can be found distributed across freshwater, mangrove coastal habitats. The freshwater decapod crustaceans are exceptionally well-studied, with 24 species having been recorded (Ng, 1997). Three species are endemic – Johnson's Freshwater Crab (*Irmengardia johnsoni*), Swamp Forest Crab (*Parathelphusa reticulata*) and Singapore Freshwater Crab (*Johora singaporensis*) and are largely confined to mature forest streams. Due to the absence of suitable and connected streams within the core study area, no freshwater crabs were of probable occurrence. Even the highly adaptable Maculate Freshwater Crab (*Parathelphusa maculata*) that is tolerant of low oxygen condition and often the first species to colonise heavily-disturbed areas (Ng, 1995), was not expected to occur.

Similarly, the mangrove decapod crustaceans, particularly the brachyurans (true crabs), are a well-researched group. A total of 76 mangrove brachyuran species have been recorded (Tan & Ng, 1994), of which eight are considered rare (NParks, 2010). The lesser known are the horseshoe crabs, with two species recorded in Singapore – Mangrove Horseshoe Crab (*Carcinoscorpius rotundicauda*) and Coastal Horseshoe Crab (*Tachypleus gigas*), both of which are nationally threatened and are of probable occurrence within the core study area.

A total of 39 decapod crustaceans and two horseshoe crab species were of probable occurrence (refer to Table 21 and **Appendix E**). A total of 11 species were recorded, which were common and representative of a mangrove habitat. Of these, the sesarmid crabs made up 63% (n=7). All species recorded were largely confined to the mangrove, except for two species recorded along the upstream of Sungei Cina (A3_01). The Mangrove Tree-dwelling Crab (*Selatium brockii*) and Mud Crab (Scylla sp.) were not expected at the upstream with intermediate salinity (9.5 ppt) (Ng & Sivasothi, 2001; AECOM, 2018). Although these species are able to tolerate wide fluctuations in water salinity, they prefer waters of high salinity (18-30 ppt) than intermediate salinity (9.5 ppt), the latter being typical of the Sungei Cina. While eight species of conservation significance were probable, none were recorded, including the horseshoe crabs (refer to Table 21 and **Appendix F**). The species accumulation curve shows continued increased of richness, showing that more species are expected to be recorded with increased effort (refer to Figure 60), supported by species estimator of 15 to 27 species (refer to Table 22).

The highest richness of decapod crustaceans (n=7) was recorded at both Woodlands Waterfront and Admiralty Park mangrove (ML_04 and A1_04) (refer to Figure 59), with similar assemblage. The most commonly recorded crustacean within the core study area is the Singapore Tree-climbing Crab (*Episesarma singaporense*), followed by the Violet Tree-climbing Crab (*Episesarma versicolor*) and Mangrove Tree-dwelling Crab (*Selatium brockii*), which are all common inhabitants of the mangroves.

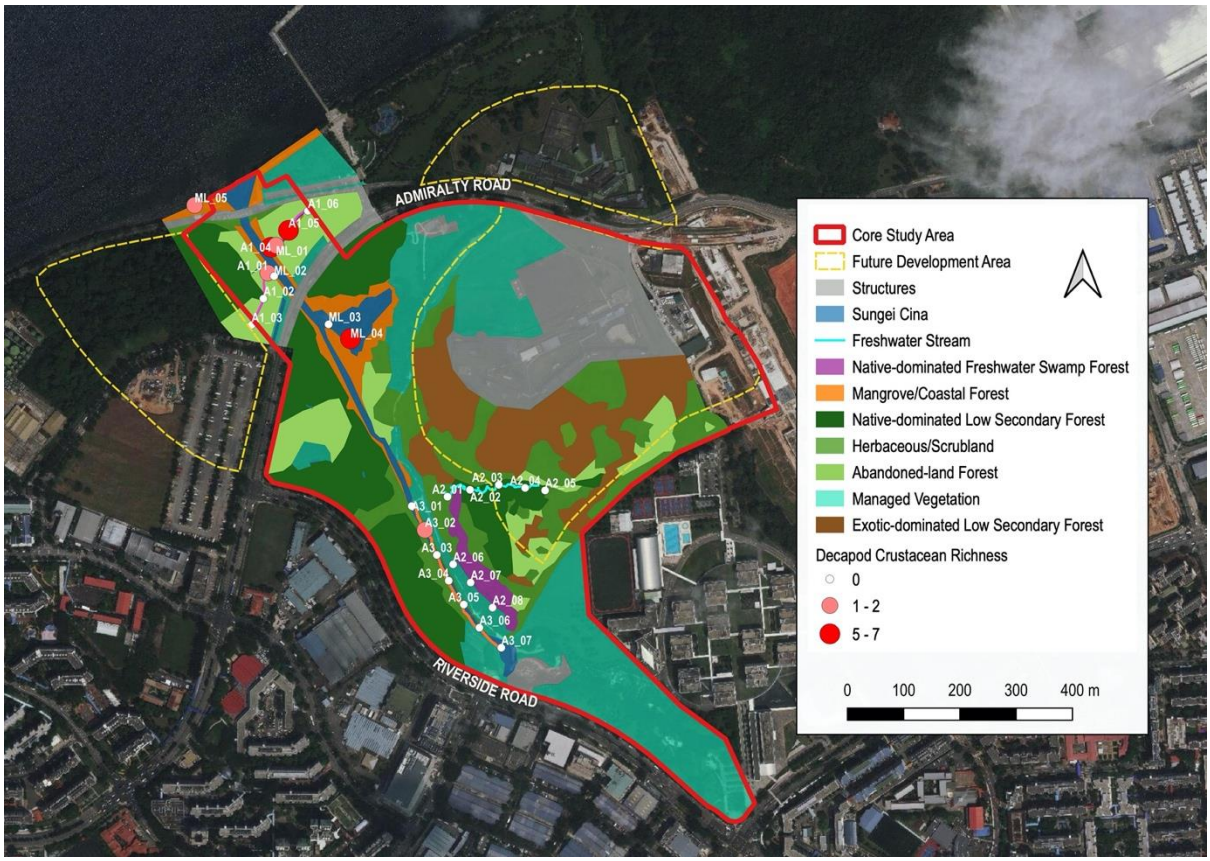


Figure 59: Number of Decapod Crustacean Species Recorded at Each Aquatic Sampling Point

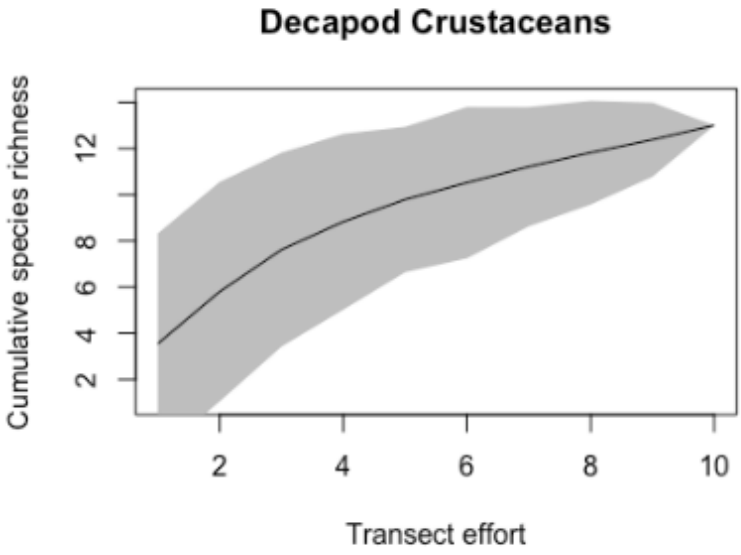


Figure 60: Decapod Crustaceans Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

7.3.3.1.6 Herpetofauna

Singapore supports a species-rich extant herpetofauna assemblage consisting of 29 amphibians and 103 reptiles comprising nine non-marine turtles, one crocodile, 32 lizards, and 61 non-marine snakes (Baker and Lim, 2012). Waterbodies are important habitats for amphibians, as they must remain reasonably moist to prevent dehydration. Like odonates, amphibians are also characterized by a bipartite lifestyle and their diversity is also pre-determined by site-variability in breeding and larval habitats (Berry, 1975). In Singapore where humidity is high, some species may remain away from water, instead inhabiting moist leaf litter and vegetation as adults, and returning to water only to breed. After heavy downpours, depressions and pits on the forest floor as well as phytotelmata get filled up with water, serving as ephemeral breeding grounds, especially for species with a short tadpole phase. In Singapore, all the non-marine turtles require freshwater habitats, and the Saltwater Crocodile (*Crocodylus porosus*) requires marine environments (Baker and Lim, 2012). Lizards and snakes are extremely variable in their habits, with habitat use ranging from subterranean to arboreal environments (Tweedie, 1983; Grismer, 2011).

Herpetofauna site-diversity is largely based on habitat quality and many species are restricted to mature forests. Due to historical site disturbance and lack of connectivity to mature forests, species likely to occur within the forested area of the core study area are those widespread and common. However, given the presence of mangroves, some uncommon or rare mangrove-inhabitants may occur.

The probable species list amounted to 56 species comprising 13 amphibians (all frogs) and 43 reptiles (four turtles, 13 lizards and 26 snakes) (refer to Table 21 and **Appendix E**) (Berry, 1975; Tweedie, 1983; Grismer, 2011). The amphibians expected at the site are mainly species that able to thrive and breed in disturbed habitats with temporary pools of poor water quality (Bickford *et al*., 2010; Baker and Lim, 2012), with the exception of the Copper-cheeked Frog (*Chalcorana labialis) as* discussed below. Similarly, the reptile list included both common and widespread species, but also included several species restricted to forested, mangrove and coastal habitats.

The herpetofauna field assessment recorded 25 species comprising 10 amphibians (all frogs) and 15 reptiles (one turtle, six lizards, and six snakes; refer to Table 21 and **Appendix E**). Of the 14 conservation significant species of probable occurrence, two were recorded (refer to Table 21 and **Appendix F**). The species accumulation curve for amphibians and reptiles showed signs of slight flattening towards the tail-end showing that a considerable number of species were recorded but more are expected with increased effort (refer to Figure 62, Figure 63 and Table 22).

The Malayan Box Turtle (*Cuora amboinensis*) is globally vulnerable, but the two individuals observed within the core study area (A1_03) are likely released and not native. The Singapore Bent-toed Gecko (*Cyrtodactylus majulah)* is a nationally vulnerable species, that is restricted and rare as it was only known to occur within the CCNR until a recent record at Admiralty Park in 2017 (Law, 2017). One individual was sighted along the bankside upstream of Sungei Cina (A3_04), which corroborates the presence of the species at Admiralty Park. While not of conservation significance, the presence of the Copper-cheeked Frog within the core study area is a notable record. It prefers forest streams with running water (Berry, 1975) and is known to occur within the CCNR, Western Catchment and Pulau Tekong until recent records at Admiralty forests from unpublished baseline studies by Camphora Pte Ltd. One individual was recorded along the freshwater stream within the future residential development area (A2_01). Although the stream is ephemeral in nature, these frogs can survive in the presence of small or moist areas along the streams, thus explaining their presence.

There are no clear areas with higher richness of herpetofauna (refer to Figure 61). The highest richness of herpetofauna (n=6) was recorded at Admiralty Park near Sakura carpark in the southern end (T2_02) (refer to Figure 61) Species recorded are widespread and common. While the observed richness of herpetofauna within the future residential development area is low, the site has value in supporting a small population of the Copper-cheeked Frog.

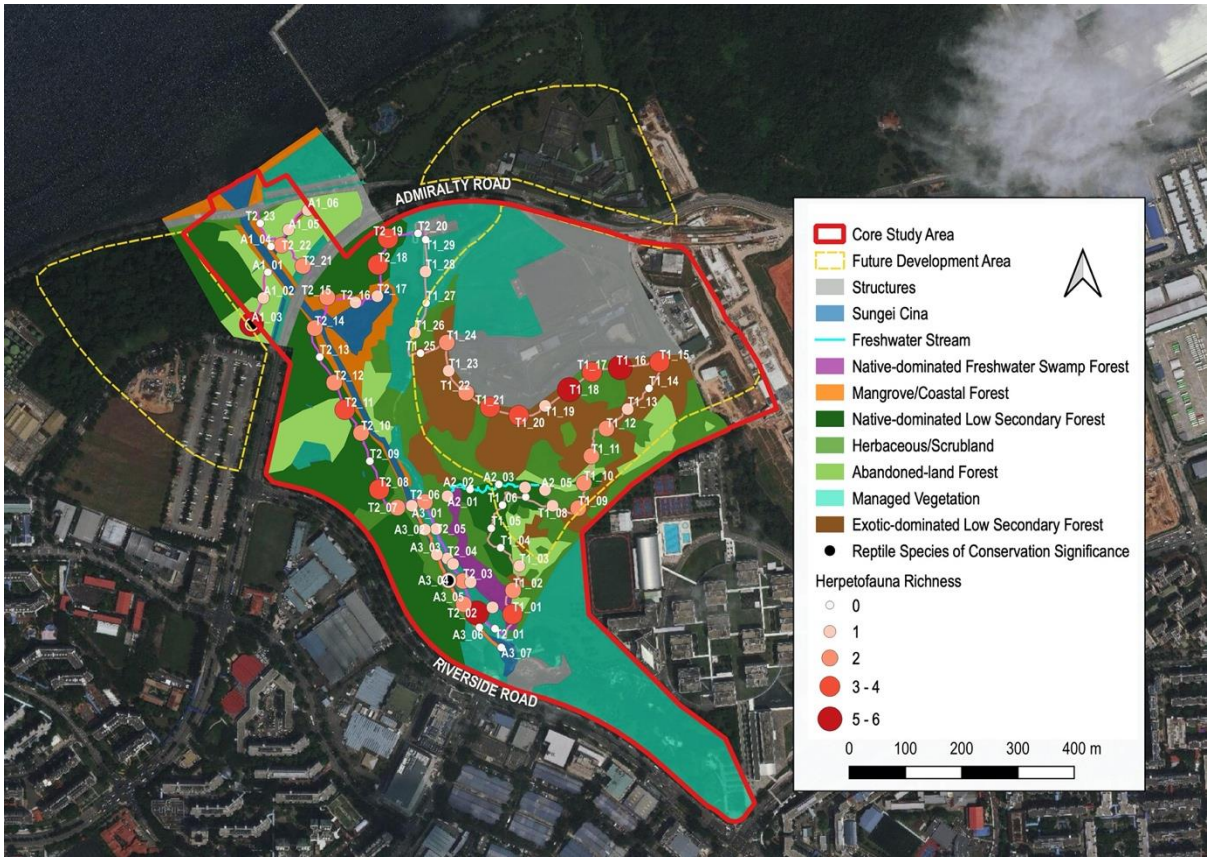


Figure 61: Number of Herpetofauna Species Recorded at Each Sampling Point along the Terrestrial and Aquatic Transects

NOTE: Locations of conservation significant reptile species are indicated.

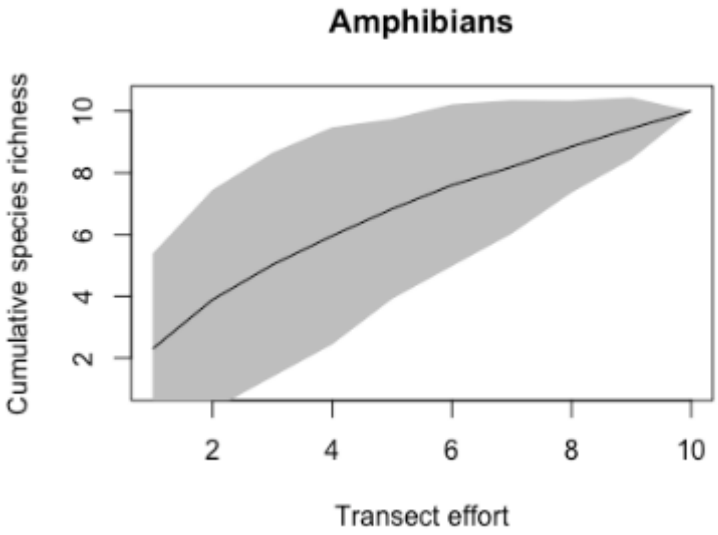


Figure 62: Amphibian Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

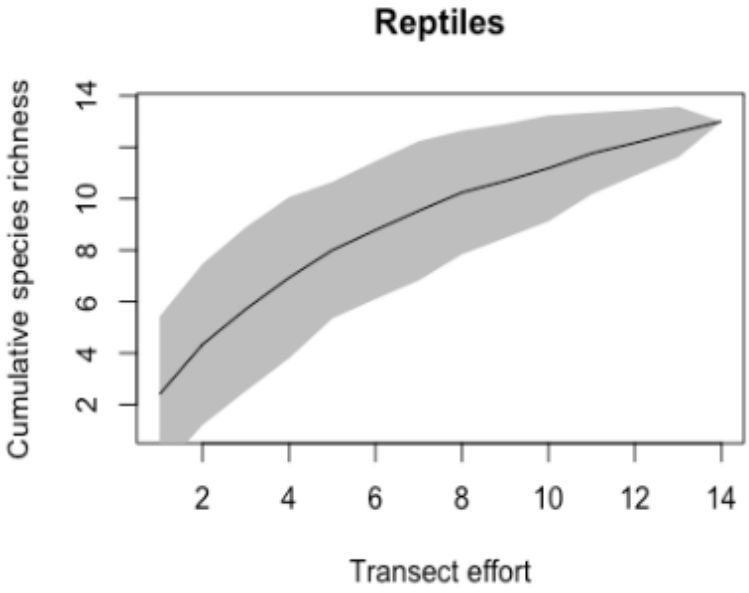


Figure 63: Reptile Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

7.3.3.1.7 Birds

Situated along the East Asian-Australasian Flyway, Singapore receives a high number of migratory bird species (219 species) shifting between northern breeding grounds and southern overwintering haunts from September and March (Yong *et al*., 2016). Many of these winter visitors overwinter in Singapore, whereas others (i.e., passage migrants), stopover before continuing their journey. Therefore, birds are classified into several categories based on resident, migratory and vagrant status. Currently, Singapore has 397 species, of which only 168 are resident species (*ibid*). The remaining 229 species is made up of 93 winter visitors, 29 passage migrants, 97 visitors, and 10 introduced species. An additional 70, mainly forest-dependent, are recognized as extinct (Lim, 1997), with many more continually disappearing (Castelletta *et al*., 2005).

A total of 158 species of birds were deemed of probable occurrence, of which 55 are migratory species, 88 are residents and 15 are introduced (refer to Table 21 and **Appendix E**). This accounts for 40.6% of the 397 species that have been recorded in Singapore. The bird richness is attributed to wide range of habitats including parkland, secondary forest, forest edges, scrubland, and mangrove and coastal, that supports a diversity of bird species utilising the various habitat types. However, species restricted to mature forests were omitted from the list as they are unlikely to be present.

The field assessment recorded 78 species, of which 61 are residents and 11 are migratory species and six introduced species (refer to Table 21 and **Appendix E**). Three recorded species were considered non-probable due to lack of natural distribution records - Mangrove Pitta (*Pitta megarhyncha*), White-rumped Shama (*Copsychus malabaricus*) and Thick-billed Green Pigeon (*Treron curvirostra*). The migratory survey also recorded common migrants such as the Arctic Warbler (*Phylloscopus borealis*), Asian Brown Flycatcher (*Muscicapa dauurica*), and uncommon migrants such as the Yellow-rumped Flycatcher (*Ficedula zanthopygia*) and Brown Shrike (*Lanius cristatus*).

Of the 24 probable conservation significant species, 11 were recorded (refer to Table 21, Table 23, and **Appendix F**). Records of conservation significant species were distributed across the core study area, mainly within the forested future residential development area and mangrove forests at Admiralty Park (refer to Figure 65). The birds of conservation significance were distributed across the forested future residential development area with no distinct hotspot (refer to Figure 65). The species accumulation curve showed signs of flattening towards the tail-end showing that a considerable number of species were recorded (refer to Figure 66 and Table 22).

Amongst the findings, the most significant would be the nationally critically endangered Mangrove Pitta (*Pitta megarhyncha*) that was recorded once within the forest of the future residential development area (T1_12). The rare resident is confined to mangrove forests, and is known to occur in Pulau Ubin, Pulau Tekong, Pasir Ris Park and Singapore Botanic Gardens (Yong *et al*., 2016). It was previously known to be extinct on mainland Singapore for 20 years since 1979 (Lim, 1992), until a sighting at Sungei Buloh Wetland Reserve in 2001 (Francis *et al*., 2009). The record within the core study area thus represents a new location record for the species in Singapore. Within Admiralty Park, the nationally critically endangered White-rumped Shama (*Copsychus malabaricus*) was recorded but is believed to be an escaped pet bird. A pair of Red-wattled Lapwing (*Vanellus indicus*) was regularly sighted and vocalising in the open field of the Admiralty West Prison (T1_28).

Areas of higher richness of birds were recorded within Admiralty Park, with the highest richness (n=26) recorded at mangrove boardwalk (T2_16) (refer to Figure 64). Species recorded were typical of urban,

parks and gardens and forest habitats. Within the future residential development area, the moderate bird records of conservation significant species are indicative of the forest value.

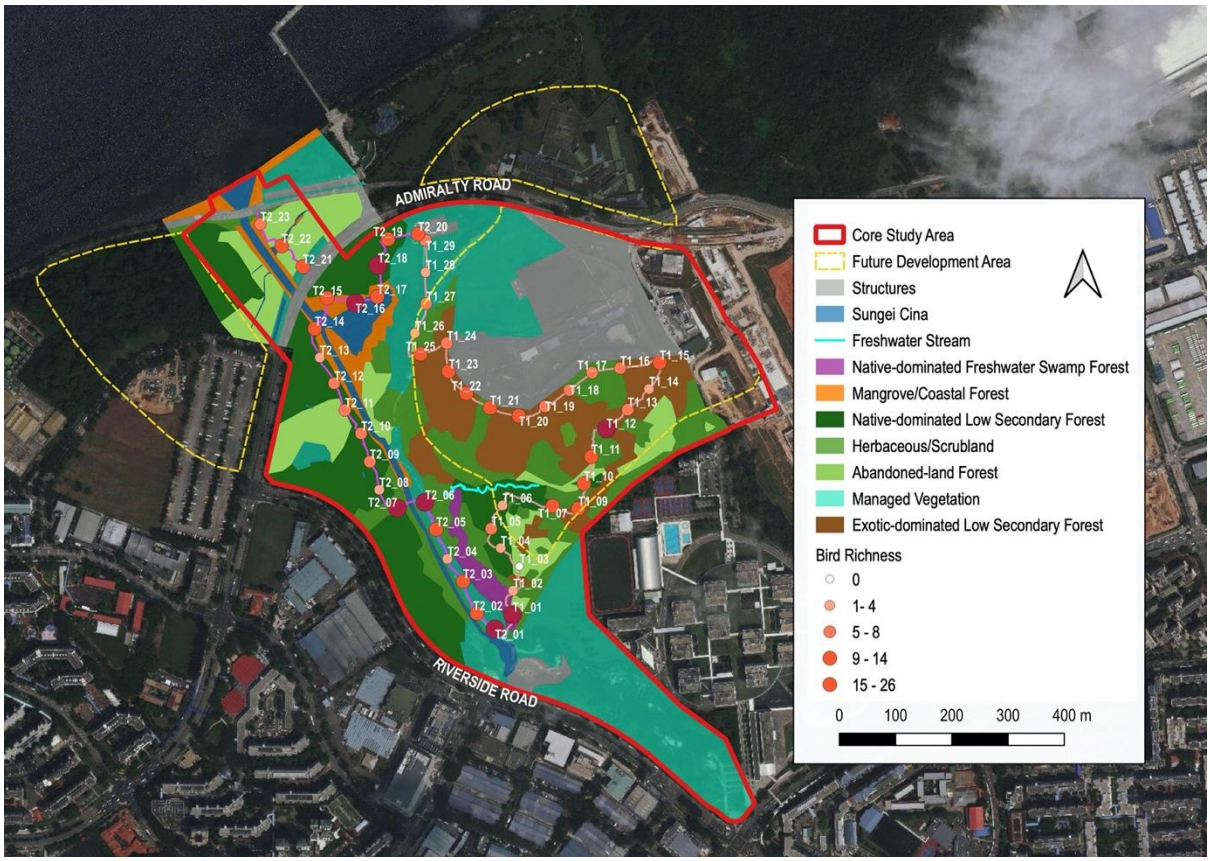


Figure 64: Number of Bird Species Recorded at Each Sampling Point along the Terrestrial Transects

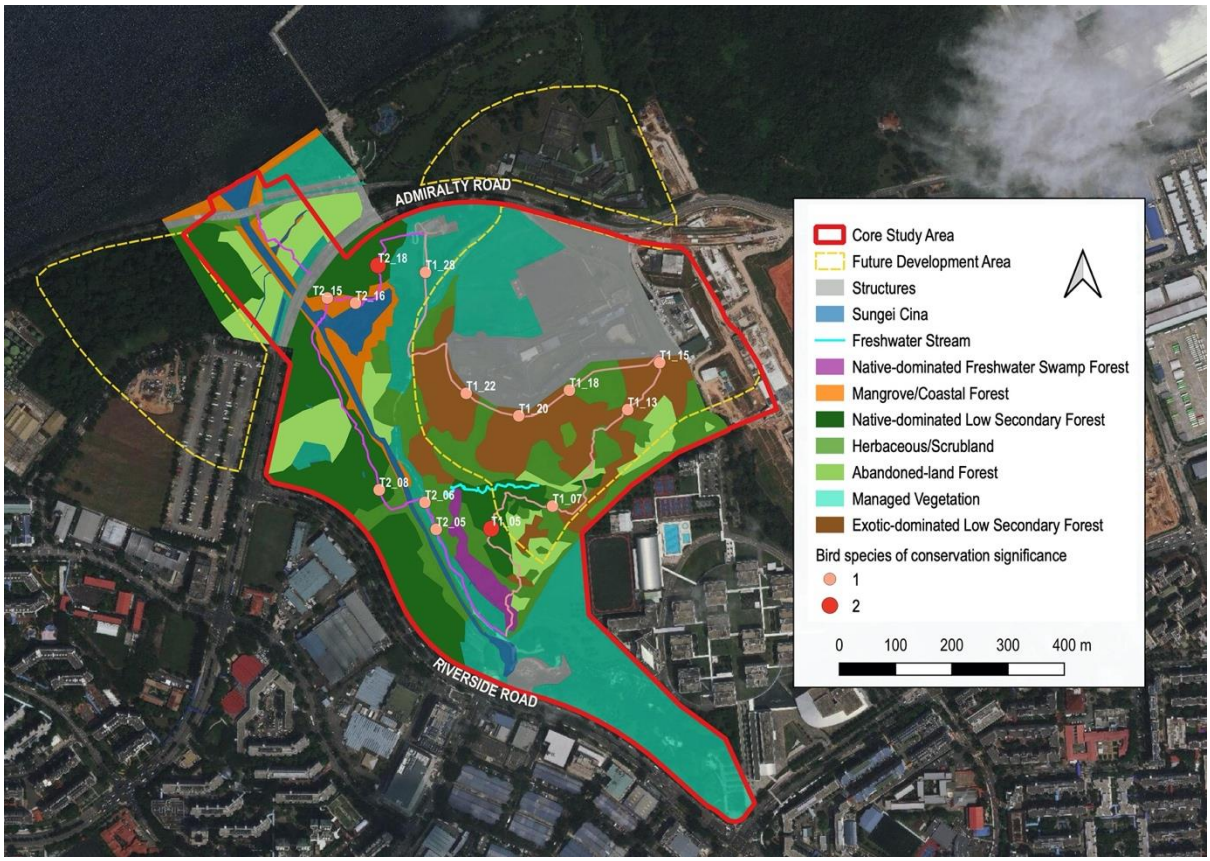


Figure 65: Locations of Conservation Significant Bird Species within the Core Study Area

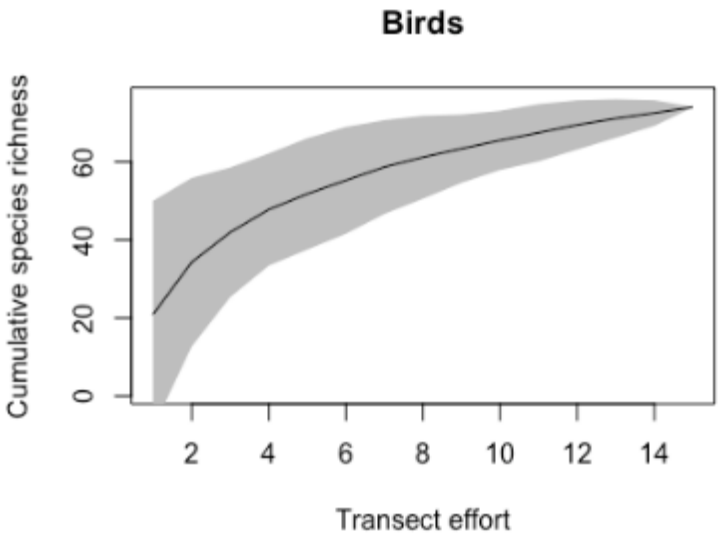


Figure 66: Bird Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

Table 23: List of the 11 Bird Species of Conservation Significance Recorded within the Core Study Area

Scientific name	Common name	Local status	Global status	Location of records
Ardea purpurea	Purple Heron	EN	LC	A3_04
Ardea cinerea	Grey Heron	VUL	LC	Woodlands Waterfront Park
Vanellus indicus	Red-wattled Lapwing	EN	LC	T1_28
Copsychus saularis	Oriental Magpie-Robin	EN	LC	T1_15/22, T2_18
Copsychus malabaricus	White-rumped Shama	CR	LC	A2_07
Pitta megarhyncha	Mangrove Pitta	CR	NT	T1_12
Loriculus galgulus	Blue-crowned Hanging-parrot	EN	LC	T1_05/22, T2_16/18
Rallina fasciata	Red-legged Crake	VUL	LC	T1_05/18, T2_06/08/18
Strix seloputo	Spotted Wood Owl	CR	LC	T1_07/13, T2_15
Nisaetus cirrhatus	Changeable Hawk-eagle	EN	LC	T1_06, T1_22, T2_05
Treron curvirostra	Thick-billed Green Pigeon	EN	LC	T1_08

NOTE: (LC = Least Concern, NT = Near-threatened; VUL = Vulnerable, EN = Endangered, CR = Critically Endangered). The local status follows the Singapore Red Data Book and the global status follows the IUCN Red List.

7.3.3.1.8 Mammals (Non-volant)

Historically, Singapore's mammalian fauna numbered upwards of 86 indigenous terrestrial species (Baker and Lim, 2012). Following deforestation and urbanization, Singapore's mammal assemblage strongly depreciated down to 54 species (*ibid*). Particularly susceptible to extinction were the bats, which constitute the bulk of Singapore's mammalian fauna, and large mammals (Corlett, 1992; Teo and Rajathurai, 1997; Lane *et al*., 2006). As a result, Singapore's mammal assemblage today is comprised largely of small mammals (15 species) and bats (25 species). Since bats were surveyed separately from non-volant mammals, they were treated separately.

Excluding bats, 12 of the 30 species of non-volant mammals were deemed of probable occurrence (refer to Table 21 and **Appendix E**). Terrestrial transects and camera trapping documented the presence of eight species of non-volant mammals (refer to Table 21 and **Appendix E**). This includes the Malaysian Wood Rat (*Rattus tiomanicus*), Common Treeshrew (*Tupaia glis*) and Long-tailed Macaque (*Macaca fascicularis*) that are the common inhabitants of such forests. These species are recorded along both transects and are expected to be using the entire core study area. The results from camera trapping will be discussed in detail in the next section. The species accumulation curve showed signs of flattening towards the tail-end showing that recorded richness is close to the estimated richness, supported by the species estimator of 6 to 9 species (refer to Figure 68 and Table 22).

Only one conservation significant mammal, the Smooth-coated Otter (*Lutrogale perspicillata*), was of probable occurrence but was not recorded (refer to Table 21 and **Appendix F**). It is known to occur in

coastal and mangrove habitats, such as the Sungei Cina. The highest mammal richness (n=8) recorded from the transect surveys is within Admiralty Park at T2_07 (refer to Figure 67).

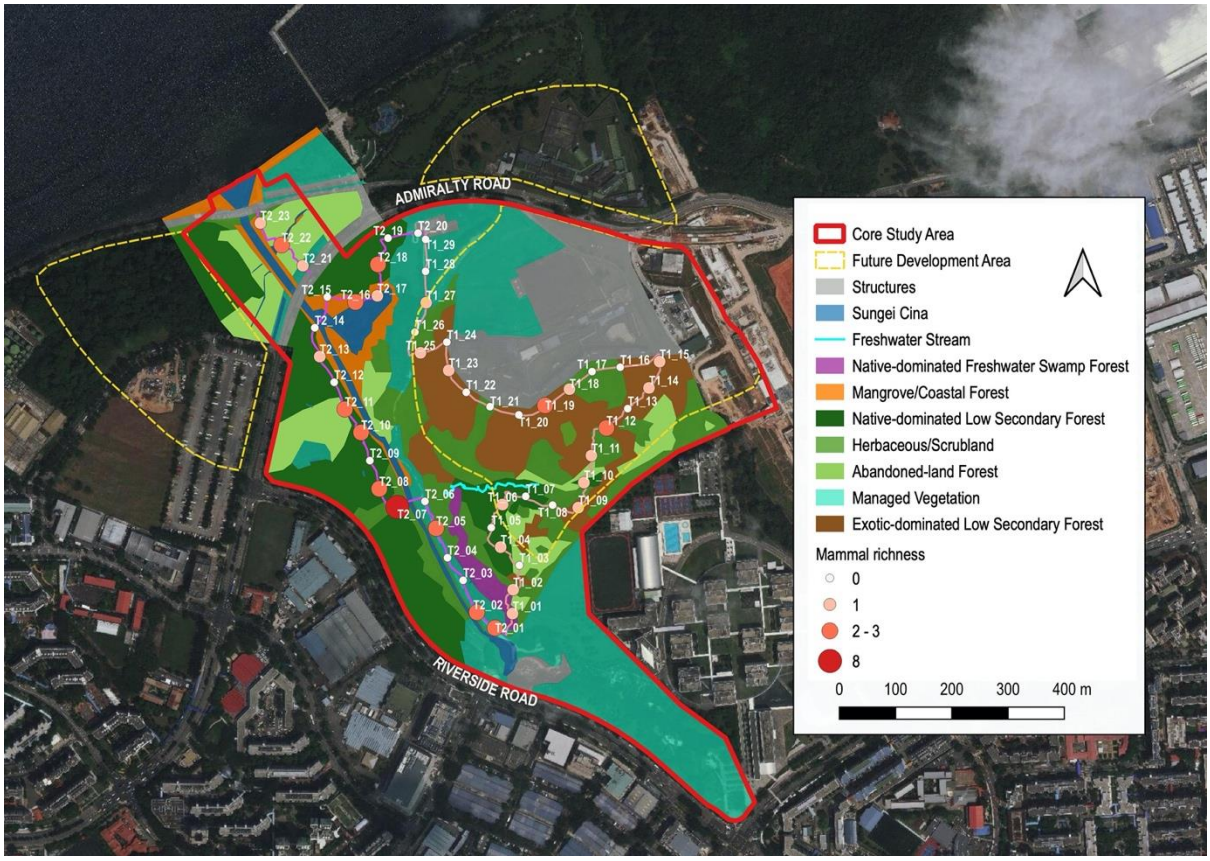


Figure 67: Number of Mammal Species Recorded at Each Sampling Point along the Terrestrial Transects

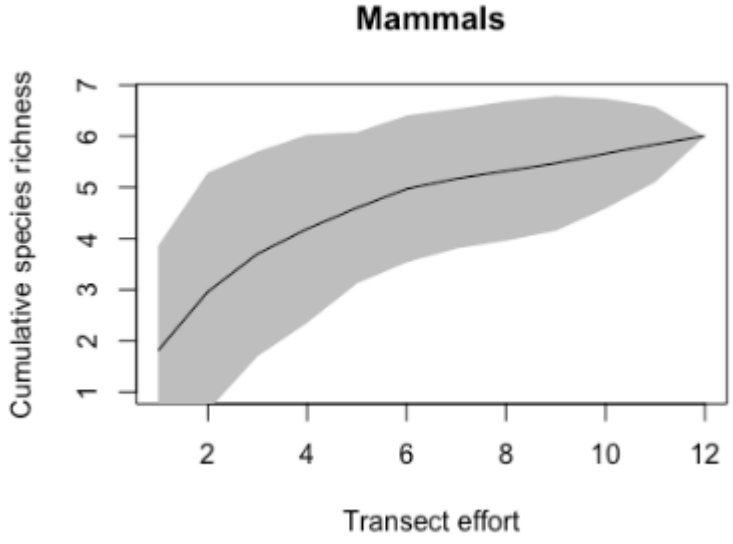


Figure 68: Sample-based Rarefied Species Accumulation Curve and Sampling Effort for the Core Study Area using only Transect Data for Non-volant Mammals

NOTE: Shading indicates the 95% confidence interval for 100 permutations.

7.3.3.1.9 Mammals (Bats)

As mentioned above, bats constitute the bulk of Singapore's mammal assemblage with 25 extant species. The bat assemblage is split between six Megachiroptera (fruit bats) and 19 Microchiroptera(insectivorous bats). Singapore is situated along the centre of bat diversity for the Old World (Lane *et al*., 2006), and it is estimated that Singapore's bat diversity once numbered between 60 and 72 species, prior to British settlement in 1819 (*ibid*). However, only 10 species are known to have gone extinct in Singapore (Lane *et al*., 2006; Leong and Chan, 2011). The Large Flying Fox (*Pteropus vampyrus*) used to exist in large numbers, but presently, only appears occasionally in Singapore as a visitor (Lane *et al*., 2006). Many of the extant bats are rare or occur outside of the CCNR (Pottie *et al*., 2005; Baker and Lim, 2012).

Only seven bats (two fruit bats and five insectivorous bats) were deemed of probable occurrence within the core study area (refer to Table 21 and **Appendix E**). Of these, three species of bats were recorded, comprising of one fruit bat detected via trapping and two insect bats detected via acoustic sampling. All three species are common and widespread in urban Singapore. No bats were trapped within the harp traps while only the Lesser Dog-faced Fruit Bat (*Cynopterus brachyotis*) was trapped in the mist net (refer to Figure 69).

The Lesser Dog-faced Fruit Bat was regularly sighted during transect surveys and two individuals were caught in the mist net during bat trapping. The other two insect bat species, the Whiskered Myotis (*Myotis muricola*) and Asiatic Lesser Yellow House Bat (*Scotophilus kuhlii*), were recorded via acoustic sampling. The Whiskered Myotis are known to roost inside banana plants which are commonly seen in parks and gardens. The Asiatic Lesser Yellow House Bat is known to roost in large colonies in spaces of buildings and are commensal with humans. One conservation significant bat species is of probable occurrence but was not recorded (refer to Table 21 and **Appendix F**). The Black-bearded Tomb Bat (*Taphozous melanopogon*) is found in forest and urban areas but is considered widespread but rare (Baker & Lim, 2012).

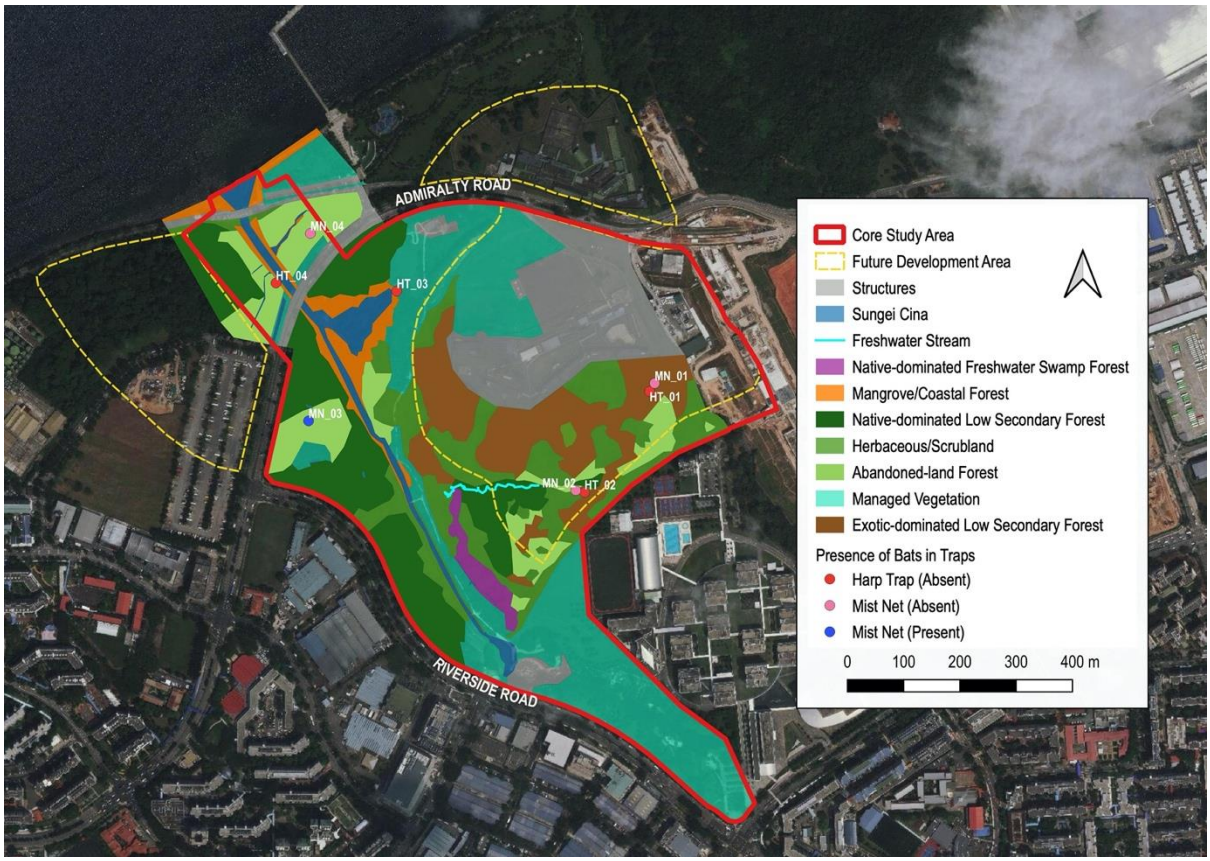


Figure 69: Presence and Absence of Bats Trapped within Harp Traps and Mist Nets during Bat Trapping



Figure 70: Examples of Fauna Recorded at the Core Study Area

NOTE: (A) Red-tailed Sprite (*Teinobasis ruficollis*), Ancyra Blue (*Catopyrops Ancyra*), (C) Marsh Clams (*Polymesoda expansa*), (D) Whitespot (*Aplocheilus armatus*), (E) Reticulated Python (*Python reticulatus*) and (F) Pink-fingered Vinegar Crab (*Episesarma chengtongense*)

7.3.3.2 Camera Trapping

The 10 camera traps yielded 574 independent detections of fauna species over 582 trap-nights (mean per camera trap = 58.2; refer to Table 24). The full set of camera trap data is available in **Appendix H**.

A total of 22 species was recorded, comprising 13 birds, six mammals and three reptiles (refer to Table 24). The Slaty-breasted Rail (*Gallirallus striatus*) was only recorded via camera trapping on five occasions within the future residential development area (WL08).

The most commonly recorded mammal species was the Common Treeshrew (*Tupaia glis;* n=154), followed by Plantain Squirrels (*Callosciurus notatus*; n=39) (refer to Table 26). The majority of the detections (n=64; 41.6%) of the Common Treeshrew was recorded on the camera trap located in the central part of the future residential development area (WL09). This species inhabits secondary forest and are usually active on the forest floor, which may explain its high detection on the camera traps (Baker & Lim, 2008). The less commonly recorded mammal species are the Common Palm Civet (*Paradoxurus hermaphroditus*) and Long-tailed Macaque (*Macaca fascicularis*), which is likely due to their arboreal habits (Baker and Lim, 2012). The least detection for the Oriental House Rat (*Rattus tanezumi*) is likely due to difficulty in identification from camera traps. These species are highly adaptable to the urban environments.

The highest mammal richness (n=6) was recorded within the forest of the future residential development area at WL08 and WL09 located in the central part of the forest (refer to Figure 71). The detection rate of all fauna (i.e. including non-mammals) was the highest at WL09 (refer to Table 25).

Table 24: Number of Independent Detections of Each Species Recorded by Camera Traps in the Core Study Area

Taxon	Scientific name	Common name	No. of independent detections (n)
Mammal	*Paradoxurus hermaphroditus*	Common Palm Civet	3
Mammal	*Tupaia glis*	Common Treeshrew	154
Mammal	*Canis lupus familiaris*	Domestic Dog	13
Mammal	*Macaca fascicularis*	Long-tailed Macaque	6
Mammal	*Callosciurus notatus*	Plantain Squirrel	39
Mammal	*Rattus tanezumi*	Oriental House Rat	1
Mammal	*Rattus sp.*	Rat sp.	5
Bird	*Aplonis panayensis*	Asian Glossy Starling	1
Bird	*Todiramphus chloris*	Collared Kingfisher	7
Bird	*Chalcophaps indica*	Common Emerald Dove	65
Bird	*Dicrurus paradiseus*	Greater Racket-tailed Drongo	2
Bird	*Acridotheres javanicus*	Javan Myna	6
Bird	*Picus vittatus*	Laced Woodpecker	6
Bird	*Rallina fasciata*	Red-legged Crake	116
Bird	*Gallirallus striatus*	Slaty-breasted Rail	5
Bird	*Spilopelia chinensis*	Spotted Dove	6
Bird	*Strix seloputo*	Spotted Wood Owl	2

Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	69
Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	3
Bird	*Geopelia striata*	Zebra Dove	3
Reptile	*Naja sumatrana*	Equatorial Spitting Cobra	1
Reptile	*Varanus salvator*	Malayan Water Monitor	8
Reptile	*Eutropis multifasciata*	Many-lined Sun Skink	12
Reptile	Scincidae	Skink sp.	6
Reptile	Varanus sp.	Monitor Lizard sp.	1
	Unidentified	Unidentified	32
Total			**574**

Table 25: Species Richness and Detection Rates of Fauna and Mammals for Each Camera Trap

Camera trap no.	No. of trap-nights	Detection rate of fauna	Detection rate of mammals	No. of fauna species recorded	No. of mammal species recorded
WL01	62	0.274	0.226	5	3
WL02	64	0.359	0.219	4	2
WL03	51	0.529	0.510	3	2
WL04	54	0.722	0.519	8	3
WL05	62	0.065	0.048	2	1
WL06	62	0.532	0.387	8	3
WL07	62	3.129	0.371	13	2
WL08	62	1.371	0.177	10	2
WL09	41	3.293	1.732	10	4
WL10	62	0.274	0.145	5	2

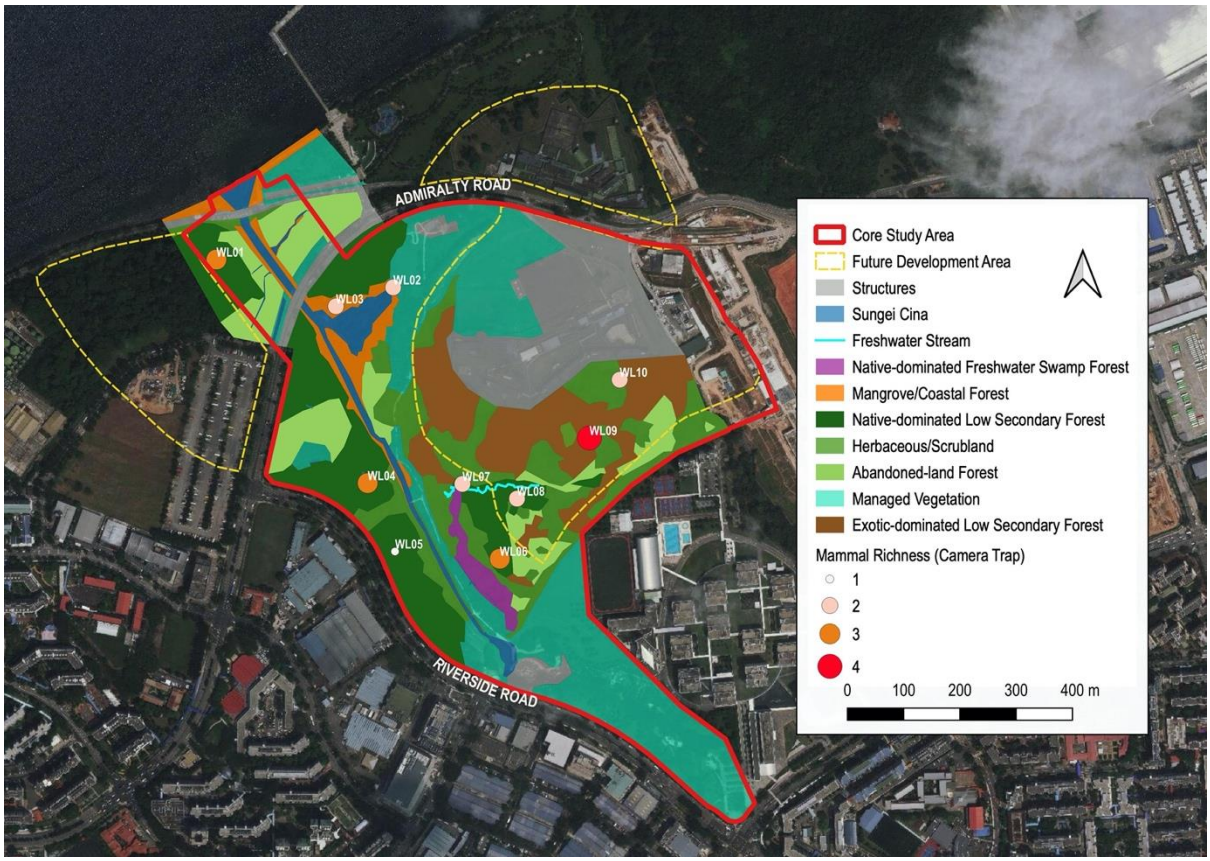


Figure 71: Number of Mammal Species Observed at Each Camera Trap

NOTE: WL09 recorded the highest richness of four mammal species.

Based on the species accumulation curve, the camera trapping effort was sufficient to capture most species potentially detectable by camera trapping over a 2 month period (refer to Figure 72). The species accumulation curve for mammal richness within the core study area is characterised by a spike in species detection, with most species being detected by 20th day (refer to Figure 72). It reaches asymptotic richness at about 60th day for the core study area. The true mammal species richness estimated by the estimators (n=6–7; refer to Table 26) for the core study area approximates the number of species recorded (n=6). This illustrates that camera trapping effort was sufficient to capture most species potentially detectable by camera trapping over a 2 month period.

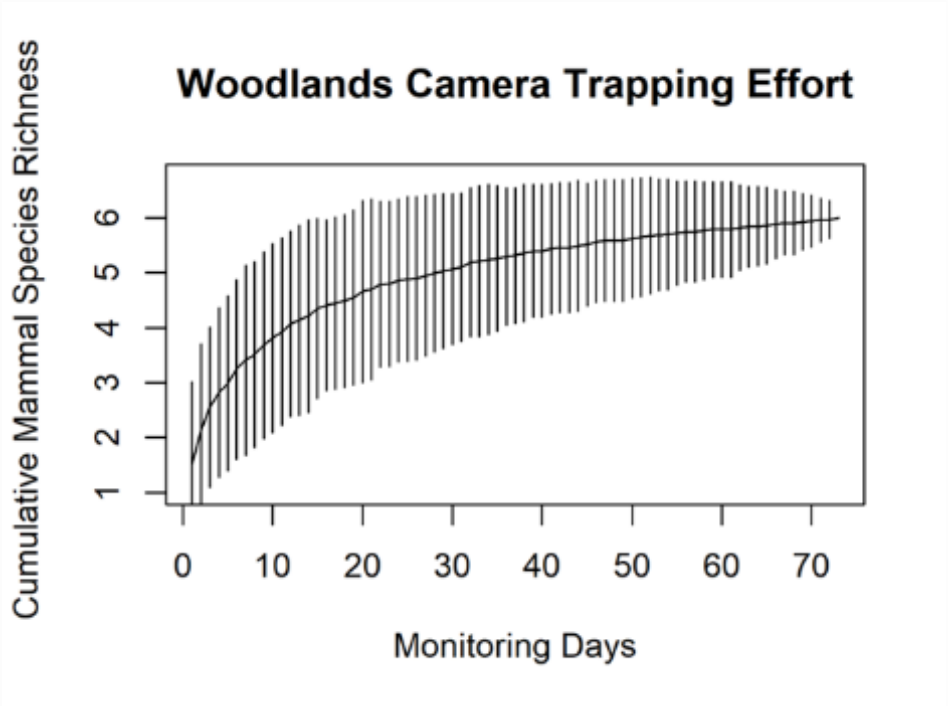


Figure 72: Species Accumulation Curve for Mammal Species Captured in Terrestrial Camera Traps

NOTE: Vertical lines indicate the 95% confidence interval for 100 permutations.

Table 26: Total Number of Species Recorded and Estimated True Species Richness Based on the Number of Monitoring Days

No. of mammal species recorded	Species Estimator				
	Chao	JK1	JK2	Bootstrap	*n*
6	6.49 ± 1.3	6.99 ± 1.0	7.00	*6.49 ± 0.6*	73

NOTE: Values represent estimates ± standard error. n = monitoring days.

7.4 Summary of Baseline Findings and Assessment of Ecological Value

The core study area is composed largely of urban structures, managed vegetation and native-dominated low secondary forest located within Admiralty Park and Woodlands Waterfront Park. This includes mangrove/coastal forest patches that are present along the downstream section and at the mouth of Sungei Cina. Plants of conservation significance are concentrated within the native-dominated low secondary forest in Admiralty Park and in the native-dominated freshwater swamp forest, particularly within or on the edge of the future residential development site.

The highest faunal richness was recorded in the northern Admiralty Park outside the future residential development site, dominated by birds, butterflies and odonates. The core study area is home to several fauna species of conservation significance (e.g. Mangrove Pitta and Red-wattled Lapwing), yet there is no clear hotspot as they are distributed across the site. Species that use the Admiralty Park are also likely to use the future residential development site for resting, breeding and shelter; except for species restricted to the mangrove or freshwater swamp forest.

7.4.1 Rating of Ecological Value

While categorising the receptor sensitivity for flora, fauna species and habitats (as defined in Table 4), the ecological value was evaluated based on 13 characteristics (refer to Table 27). The characteristics are classified based on the receiver of an impact (i.e., site, habitat or species). For example, vegetation loss is a habitat-related impact, whereas roadkill is a species-related impact.

The ecological value of the eight identified habitat types is evaluated individually in the following sections and summarised in Table 28. Overall, they are categorised into four levels of ecological value – low, moderate, moderate-high and high. The Sungei Cina mangrove and native-dominated freshwater swamp forest are deemed of high ecological value. The native-dominated low secondary forest is rated with moderate-high ecological value; followed by abandoned-land forest and waterbody with moderate ecological value. Lastly, the habitats of least ecological value are managed vegetation, exotic-dominated secondary forest and herbaceous/scrubland vegetation.

Overall, the residential development site is assessed to have a moderate ecological value. A large proportion of the future residential development site is comprised of exotic-dominated secondary forest and abandoned-land forest which with low to moderate species diversity, except for the native-dominated freshwater swamp forest and native-dominated low secondary forest in the southern part, where a concentration of conservation significant flora and fauna species lie. Moderate human disturbances already exist in the form of medium visitor-ship in the adjacent park, with noise, light and air pollution. These human disturbances affect the naturalness, thus the habitat quality for wildlife.

7.4.1.1 Ecological Value of Managed Vegetation

The managed vegetation is rated with low ecological value. It is a man-made habitat created from planting of flora species, which is common in parks and along streetscapes. It is made up of a low diversity of native flora species that are highly re-creatable. While the landscape planting supports a diversity of fauna species, the species assemblage is made up largely of common species with very few fauna species of conservation significance. It is an isolated patch, not connected nor near to any more mature forest, hence has low ecological linkage value. It, however, has a high potential value in provision of services to human users in the park as it is highly accessible.

7.4.1.2 Ecological Value of Native-dominated Low Secondary Forest

The native-dominated low secondary forest has a moderate ecological value. It is a human-modified habitat with forest that has regrown after the land was cleared before the 1950s and is dominated by common native tree species. The native-dominated low secondary forest at the study site harbours and supports a moderate diversity of flora and fauna, including flora and fauna species of conservation significance. While it is a young forest, this type of forest is gradually becoming less common in Singapore as any disturbance to such forest will usually result in regeneration of exotic-dominated vegetation, hence its re-creatability is considered medium. Though such forest has the potential to regenerate into more mature native-dominated tall secondary forest, this is unlikely to happen for the native-dominated low secondary forest observed at site. It is an isolated patch, not connected nor near to any more mature forest, hence has low ecological linkage value. As it is present along the park trails, it is considered to have high potential value to park users.

7.4.1.3 Ecological Value of Herbaceous/Scrubland

The herbaceous/scrubland vegetation has a low ecological value. It is a human-modified habitat, formed when secondary forests or farmlands are cleared of vegetation. The herbaceous and scrubland vegetation at the core study area is characterised with spontaneous low vegetation dominated by exotic flora species, which is common and highly re-creatable. It harbours low diversity of native flora and fauna and very low numbers of flora and fauna species of conservation significance. Due to its nature being an isolated patch, it is not connected to a larger forest patch and has low ecological linkage.

7.4.1.4 Ecological Value of Exotic-dominated Secondary Forest

The exotic-dominated low secondary forest has a low ecological value. It is a human-modified habitat with forest regrown on land that was recently cleared, usually after the 1960s, dominated by exotic flora species. A relatively large patch exists within the residential development site, which supports a low diversity of native flora and fauna species and low numbers of species of conservation significance. In comparison to the native-dominated low secondary forest, its potential value is considered lower as it is characterised by an exotic assemblage. Due to its nature being an isolated patch, it is not connected to a larger forest patch and has low ecological linkage. Therefore, it was rated with a low ecological value.

7.4.1.5 Ecological Value of Abandoned-land Forest

The abandoned-land forest has a moderate ecological value. It is a human-modified habitat, with forest regrown from land that was previously used for plantations or kampungs, but which are abandoned largely intact with the mature trees still standing. It harbours a moderate diversity of flora and fauna species, with species of conservation significance present in low numbers. However, the abandoned-land forest at the core study area largely has good forest structure with close canopy; which is also favourable for the fauna species present. Due to its nature being an isolated patch, it is not connected to a larger forest patch and has low ecological linkage. Therefore, it was rated with a moderate ecological value.

7.4.1.6 Ecological Value of Mangrove/Coastal Forest

The Sungei Cina mangrove has high ecological value. Mangrove forests are considered rare habitats in Singapore, occupying only 1% of Singapore's total area of 712 km^2 (Yang et al., 2011). Most of the mangrove forests are located along the western and northern coasts on the mainland, with some on offshore islands (Yang et al., 2011); ranging from isolated strips to medium patches. The 0.8 ha Sungei Cina mangrove is situated close to Sungei Buloh Wetland Reserve, the largest mangrove forest patch in Singapore which is located west of the core study area, thus providing ecological linkage. The Sungei Cina mangrove is important for harbouring conservation significant flora and fauna species that is dependent on mangrove habitats, a disappearing habitat along Singapore's coasts. This includes true

mangrove species such as the Api-api Bulu (*Avicennia rumphiana*) and Large-leafed Mangrove (*Bruguiera gymnorrhiza*), and the Arthur's Midget (*Mortonagrion arthuri*) and Mangrove Marshal

(Pornothemis starrei) which were recorded during the field assessment. Furthermore, it has high potential value for provision of ecosystem services.

7.4.1.7 Ecological Value of Freshwater Swamp Forest

The native-dominated freshwater swamp forest is considered with high ecological value. Freshwater swamp forest is a rare habitat in Singapore. It is extremely sensitive to disturbance and is threatened by changes in drainage regime, soil erosion, development and introduction of exotic species. The freshwater swamp forest at the core study area supports a population of conservation significant swamp forest species and has very low recreatability. While freshwater swamp forests have a high ecological value in Singapore, the patch present within the core study area is small (0.7 ha) and facing competition from non-freshwater swamp flora species. Despite this, the swamp forest provides habitat for a local population of the Red-tailed Sprite (*Teinobasis ruficolis*), which is widespread but uncommon due to rarity of swampy habitats, which only covers 0.11% of Singapore's land area (Yee et al., 2011). There is potential to protect and improve the freshwater swamp forest through habitat enhancement.

7.4.1.8 Ecological Value of Water body

The waterbodies within the core study area are of moderate ecological value. The two waterbodies present are namely, Sungei Cina, the main waterbody flowing through Admiralty Park and the 30 m freshwater stream that partially falls within the residential development site. The Sungei Cina waterbody is a semi-natural habitat that is canalised upstream and naturalised downstream. It receives freshwater discharge from the culvert upstream and tidal inundation from the sea downstream, and feeds into the Sungei Cina mangrove at the mouth. The freshwater stream is a naturalised stream with shallow water level that was observed to dry up frequently. It also feeds into the freshwater swamp forest in the southern part of the site.

The main Sungei Cina water body is of moderate rarity as it feeds into the mangrove of high ecological value, while the forest freshwater stream is of high rarity as such habitats are rare in Singapore. The waterbodies harbour low fauna diversity and fauna of conservation significance in low numbers due to historical disturbances. Flora species of conservation significance are present in moderate numbers.

Table 27: Factors Influencing the Ecological Value of an Ecological Feature and Classification Levels

Criteria	Characteristic	Definition
HABITATS		
Quality	Naturalness	The degree of a habitat/site is free from modification or disturbances from man (i.e. man-made, naturalised and natural).
	Size	The physical extent of the habitat or largest continuous natural area within the site. If all else were equal, larger areas tend to have higher carrying capacity and can support more species and resources, and higher population.
	Diversity	The diversity and type of native species assemblages found within a habitat or number of different habitat types found in a site. An area with higher diversity of native species assemblages or habitat types are more biodiverse, thus, have higher conservation value.
	Fragmentation	The degree of fragmentation or patchiness of the habitat/site. Fragmentation creates more edges and causes edge habitats to increase while decreases the number of interior habitats, which support sensitive forest species. This reduces the ecological function and effectiveness of the natural area.
	Rarity	The degree of how frequently observed a certain habitat type. The less common the habitat, the higher its conservation value.
Resilience	Sensitivity	The ability for the habitat to withstand disturbances or change and/or ease of recreating the habitat type naturally or with human intervention. High sensitivity means low ability to withstand disturbances and difficulty to recreate.
Use	Ecological linkage	The degree of importance of a site in terms of connectivity through being in close proximity with other nearby green spaces, especially with high quality habitats.
	Potential value	The measure of its suitability for social functions. This includes providence of ecosystem goods and services, potential educational, cultural, scientific and recreational value.
SPECIES / POPULATION		
Conservation value	Conservation Status	Species that have local or global conservation status would be prioritised and have higher conservation value.
	Rarity	The degree of how frequently a certain species is found. Rarer species have higher conservation values and, thus, would be prioritised. If it is uncommon locally but common globally, the higher conservation status of the two will be given.
Resilience	Distribution	The measure of extent of distribution of the species within the site, nationally or globally. If species has either restricted global distribution or local distribution, it would still be considered restricted. Species with restricted distribution would be more susceptible to impacts.
	Sensitivity	The ability of species to withstand disturbances or change in environment.

Table 28: Summary of Ecological Value Assessment of Each Habitat Type

Habitat		Managed Vegetation	Native-dominated Low Secondary Forest	Herbaceous / Scrubland	Exotic-dominated Secondary Forest	Abandoned-land Forest	Mangrove / Coastal Forest	Native-dominated Freshwater Swamp Forest	Waterbody
HABITAT									
Quality	Naturalness	Man-made	Naturalised	Naturalised	Naturalised	Naturalised	Natural	Natural	Mixed of naturalised and natural habitats. Semi-natural habitat: canalised upstream & natural downstream. Freshwater stream in forest is naturalised.
	Size (ha)	12.3	8.9	7.3	6.2	5.3	2.0	0.7	2.0
	Diversity	Low (Low flora & moderate fauna diversity)	Medium (Moderate flora & fauna diversity)	Low (Low flora & fauna diversity)	Low (Low flora & fauna diversity)	Medium (Moderate flora & fauna diversity)	Low (Low flora & fauna diversity)	Low (Low flora & fauna diversity)	Low (Low fauna diversity)
	Fragmentation	The core study area is generally contiguous with Admiralty Road West cutting through the northern part.							
	Rarity	Common habitat with mainly cultivated flora species.	Moderate	Common habitat dominated by exotic flora species.	Common habitat dominated by exotic flora species.	Moderate	Rare	Rare	Sungei Cina: Medium (due to connectivity with mangrove). Forest stream: High.
Resilience	Sensitivity	Low	Medium	Low	Low	Medium	High	High	Medium
Use	Ecological linkage	Low	Low	Low	Low	Low	Medium	Low	Low
	Potential value	High	High	Low	Low	High	High	High	High

Habitat		Managed Vegetation	Native-dominated Low Secondary Forest	Herbaceous / Scrubland	Exotic-dominated Secondary Forest	Abandoned-land Forest	Mangrove / Coastal Forest	Native-dominated Freshwater Swamp Forest	Waterbody
SPECIES / POPULATION									
Conservation Value	Conservation status	Very few fauna species of conservation significance.	Presence of flora species of conservation significance in moderate numbers. Presence of fauna of conservation significance in low numbers.	Dominated by exotic flora species. Presence of flora & fauna species of conservation significance, in very low numbers.	Dominated by exotic flora species. Presence of flora & fauna species of conservation significance, in very low numbers.	Presence of flora & fauna of conservation significance, in low numbers.	Presence of flora & fauna of conservation significance, in low and moderate numbers respectively.	Presence of flora & fauna of conservation significance, in moderate & low numbers respectively.	Presence of flora of conservation significance, in moderate numbers. Absence of fauna of conservation significance.
	Rarity	Common	Uncommon	Moderately-common	Moderately-common	Uncommon	Rare	Uncommon	Uncommon
Resilience	Distribution	Widespread	Restricted	Widespread	Widespread	Restricted	Restricted	Restricted	Restricted
	Sensitivity	Low	Medium	Low	Low	Medium	High	High	Medium
ECOLOGICAL VALUE OF THE HABITAT		**LOW**	**MODERATE – HIGH**	**LOW**	**LOW**	**MODERATE**	**HIGH**	**HIGH**	**MODERATE**

7.4.2 Proposed core conservation area

Based on the flora and fauna survey results and subsequent ecological value assessment of the identified habitat types, a 4.39 ha proposed core conservation area (including 15 m buffer) was identified on the southwestern edge of the future residential development site (refer to Figure 73). Approximately 1.21 ha of the proposed core conservation area falls within the proposed residential development area, and this area is proposed to be conserved. It encompasses the native-dominated freshwater swamp forest, freshwater stream, as well as the native-dominated low secondary forest that lies just along the boundary of the future development area, as well as conservation significant flora species and are native habitats for fauna species.

The proposed core conservation area is demarcated on the basis of:

1. Presence of rare and native vegetation types, i.e. native-dominated freshwater swamp forest and native-dominated low secondary forest. The native-dominated low secondary forest was identified to harbour early native pioneer species such as Tiup-tiup (*Adinandra dumosa*) and Silver Back Tree (*Rhodamnia cinerea*), which has potential to transition into a later successional stage.
2. High concentration of flora species of conservation significance such as the nationally vulnerable *Oncosperma tigillaria* and *Cyathea latebrosa*, and critically endangered *Artabotrys maingayi;*
3. Concentration of significant large trees within the native-dominated low secondary forest; and
4. Presence of native vegetation and waterbodies as potential habitat for native fauna (native-dominated freshwater swamp forest, native-dominated secondary forest and freshwater stream); and
5. Presence of stream that feeds into the native-dominated freshwater swamp forest.

The proposed core conservation area provides an additional habitat and connection in the larger ecological network to Central Catchment Nature Reserve and Sungei Buloh Nature Reserve. While it is located beside Admiralty Park, the habitats and species assemblage within the Proposed core conservation area are functionally different and are thus of conservation significance. Given the rapid deforestation occurring in Singapore, it is important that this unique habitat be retained.

Outside of the future residential development area lies the Sungei Cina mangrove which is excluded from the proposed core conservation area as it is not expected to be directly impacted by the future residential developments. It, however, is a rare habitat in Singapore and harbours a diversity of flora and fauna species of conservation significance.

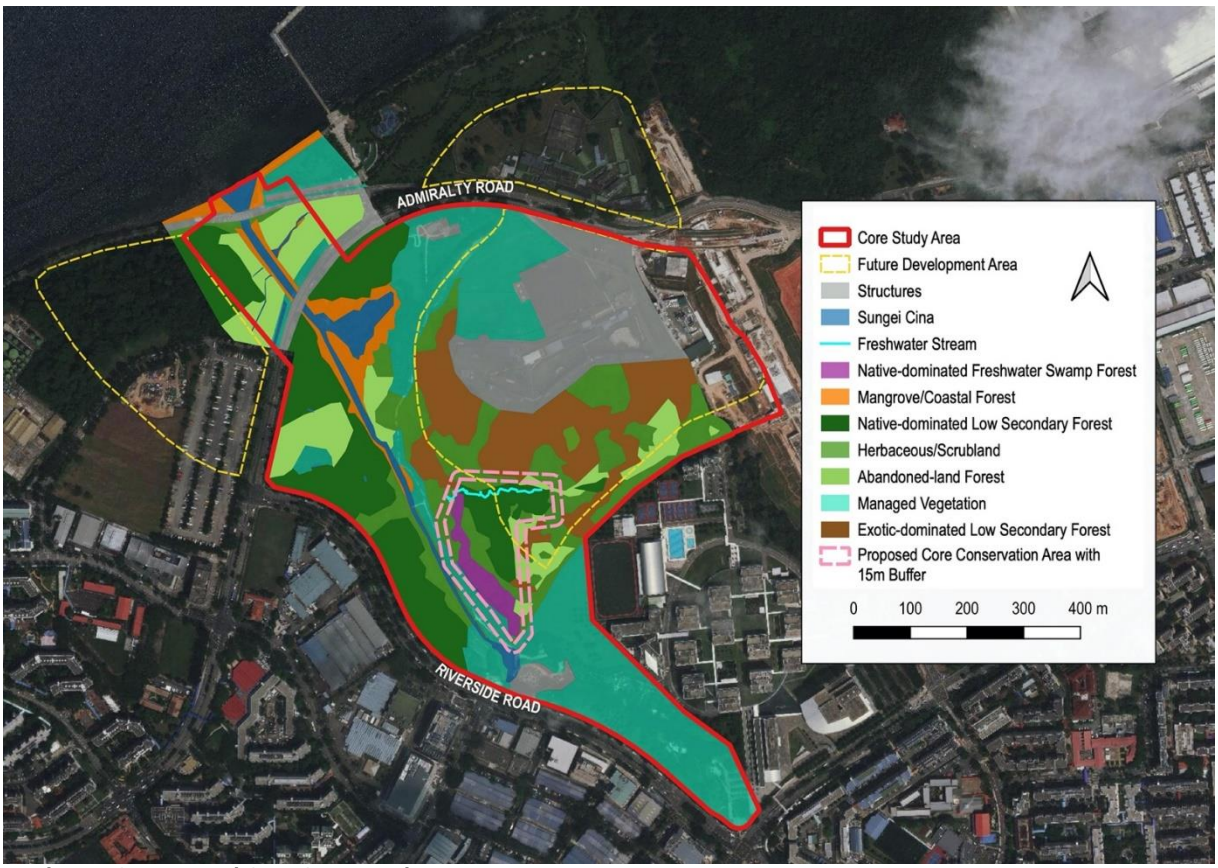


Figure 73: Proposed Core Conservation Area

7.4.2.1 Vegetation Type and Distribution of Flora Species of Conservation Significance

Two important habitat patches were identified based on vegetation type and distribution of flora species of conservation significance (refer to Figure 74). The first is a 0.7 ha patch of native-dominated freshwater swamp forest, which forms the foundation of the core biodiversity area. This is a threatened habitat type in Singapore, which has been largely lost to urban development. The only substantial stand of freshwater swamp forest in Singapore is found in Nee Soon Swamp Forest, which is protected as part of the CCNR (O'Dempsey & Chew, 2011). This unique habitat supports a high diversity of flora and fauna forms where slow-flowing streams feed a low-lying forested area, periodically inundating the soil. Decomposing plant matter also accumulates, and the leeching tannins cause the water to become acidic (pH 5.5) (O'Dempsey & Chew, 2011). Freshwater swamps forests are highly sensitive to disturbance, particularly changes to the hydrological regime. At the core study area, however, the species that make up this vegetation type are not obligate swamp species and are able to tolerate periods of dry conditions. Examples of these species include the critically endangered *L. cantleyanus*, the vulnerable Nibong (*O. tigillaria*) and the vulnerable Tree Fern (*C. latebrosa*). The stream also feeds into the native-dominated freshwater swamp forest and contributes to its survival, thus is of conservation significance And is included in the proposed core conservation area.

The second area is a patch of native-dominated low secondary forest that is found adjacent to the freshwater swamp forest. Although this is not a very rare vegetation type in Singapore, it serves to buffer the freshwater swamp forest area against potential development disturbances. The stream that likely feeds the swamp also runs through this patch of forest so retaining it may better maintain the drainage regime. Through the flora assessment, this patch has also been identified to harbour early native pioneer species such as Tiup-tiup (*Adinandra dumosa*) and Silver Back Tree (*Rhodamnia cinerea*), which has

the potential to transition into a later successional stage. This area also harbours several flora species of conservation significance such as the critically endangered *Artabotrys maingayi* and *Syzygium pseudoformosum*. With active enhancement planting of native forest species, the transition to later successional stage can be accelerated.

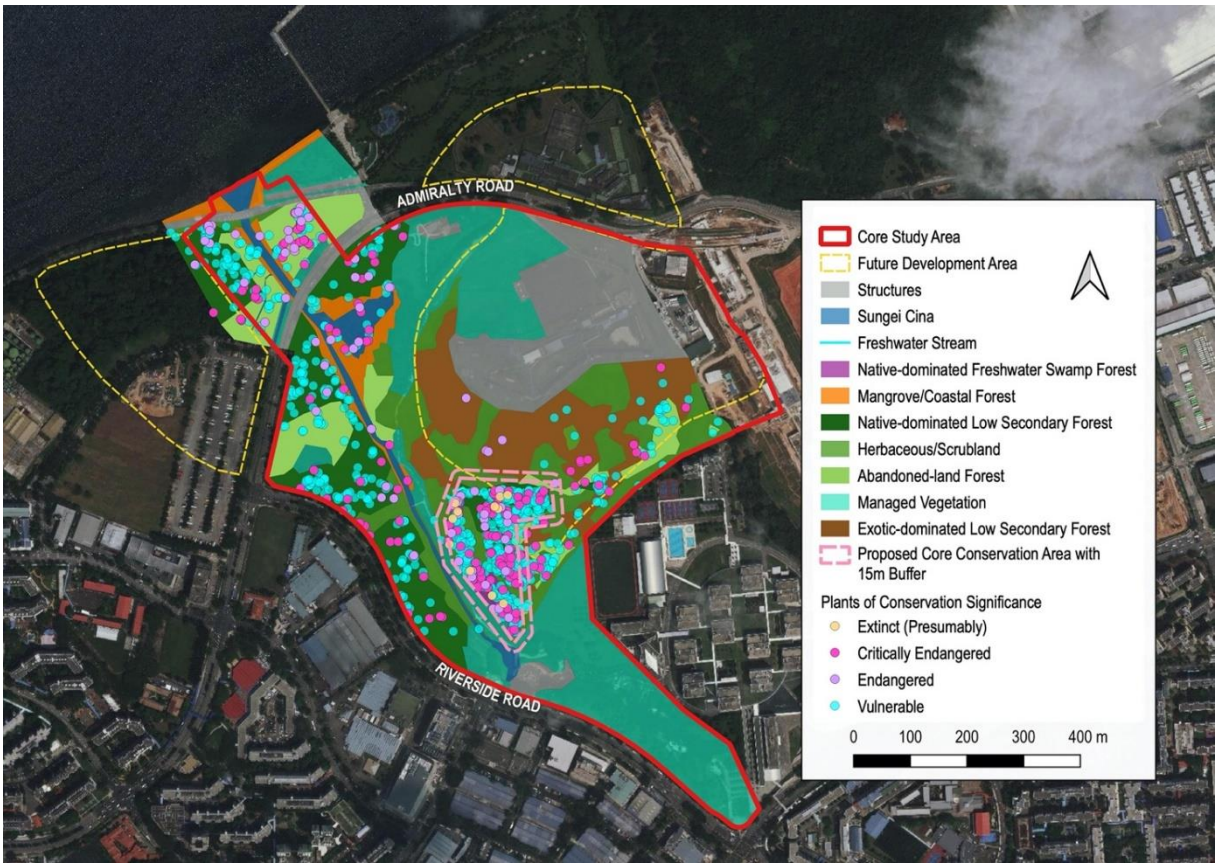


Figure 74: Conservation Areas Based on Vegetation Type and Distribution of Flora Species of Conservation Significance

7.4.2.2 Concentration of Significant Large Trees within Native Vegetation

The patch of native-dominated low secondary forest identified above has the highest concentration of significant large native trees in the core study area (refer to Figure 75) – 47 numbers of individuals with girth up to 4m. More than half the individuals are the Tembusu (*Cyrtophyllum fragrans*), followed by *Ixonanthes reticulata*. There are also a few individuals of *Alstonia angustiloba* and the locally vulnerable *Oncospema tigillaria* and *Oncosperma horridum*.

Large, old trees are a hallmark of late successional forest and achieve a number of ecological functions such as carbon storage and creating habitat for a large suite of flora and fauna. In addition, native tree species have the potential to accelerate biodiversity recovery and enhance natural regeneration, creating a self-sustaining forest ecosystem (Tucker & Murphy, 1997).

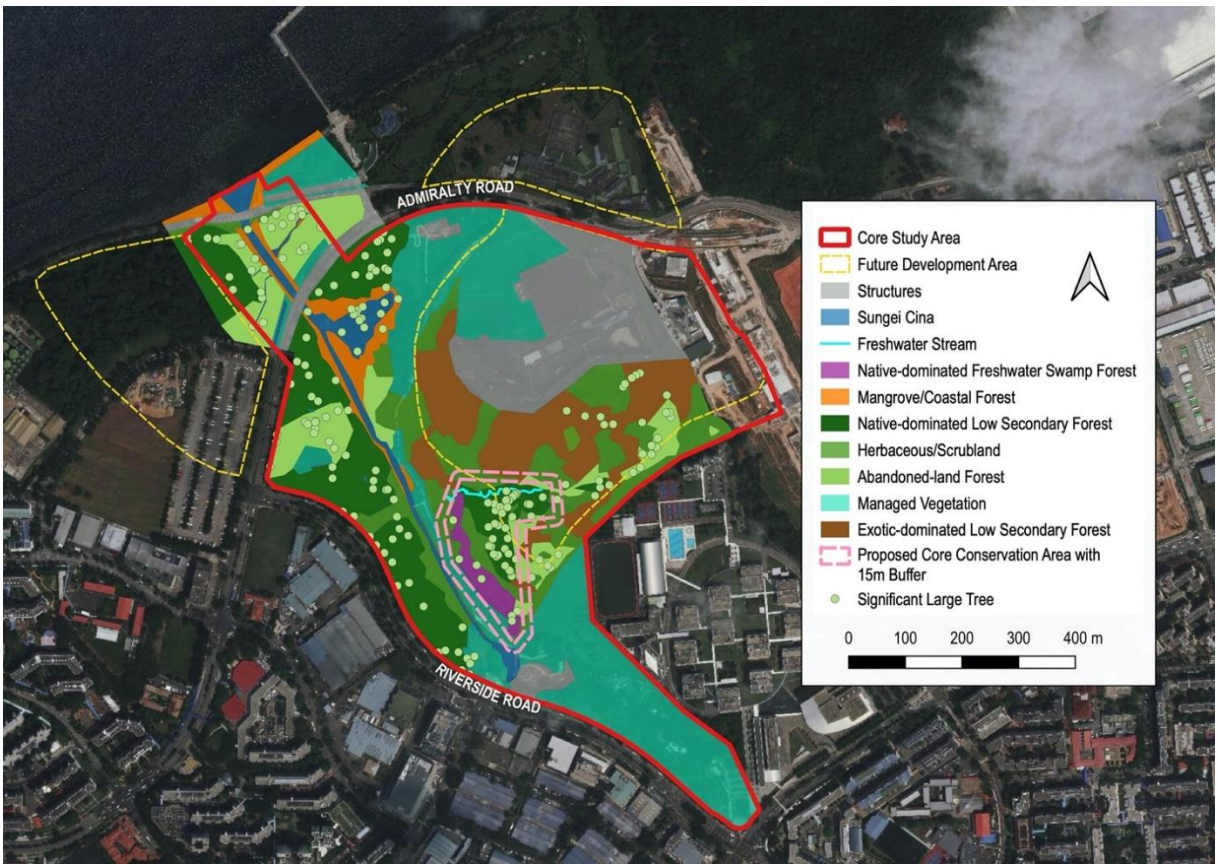


Figure 75: Conservation Areas in the Core Study Area Based on the Distribution of Significant Large Trees

7.4.2.3 Potential Habitat for Fauna

The native-dominated freshwater swamp forest, freshwater stream and native vegetation are potential habitats for fauna. While records of conservation significant fauna species are few in these areas, they have value in supporting a native fauna assemblage. This includes species that are native, common to moderately common, but are adapted to live in forests or parks and gardens. Examples are the Common Treeshrew, Copper-cheeked Frog and Greater-Racket-tailed Drongo. With the increased habitat loss in Singapore, it is important to retain forested patches to provide habitats for native fauna. While they are not threatened locally, cumulative loss of habitats over long term can be detrimental to local populations.

The core study area is also a potential habitat for migratory bird species. It remains as one of the few relatively large forested patches along the northern coast, which is increasingly fragmented by future developments. It is thus of value as a stopover point for migratory birds that enter from the northern Singapore.

7.5 Ecological Impact Assessment

7.5.1 Approach

The objectives of impact assessment are to evaluate potential impacts caused by both construction and operation periods of the proposed housing development based on the development plan. To address these objectives, in the section, we aimed to evaluate the significance these impacts have on the various ecological components (i.e. fauna, habitat, and ecosystem) within the core study area. An impact is thus defined as an entity that alters the integrity and quality of the ecological components. Integrity refers to

the “coherence of ecological structure and function, across the whole area, that enables it to sustain the habitats, complex of habitats and/or the levels of populations of the species for which it was classified” (Leicestershire County Council, 1994).

In particular, the impact assessment serves to guide appropriate mitigation methods to ensure impacts are avoided or minimised (CIEEM, 2016). The hierarchy for strategies is always in the order of avoidance, mitigation, compensation and enhancement (CIEEM, 2016). Where there are negative residual impacts, compensatory measures will be recommended to compensate for the loss of or damage to the ecological features. Finally, ecological enhancement should always be implemented to provide a net gain of benefits for the environment.

There is a range of methods and tools that are used to assess the significance of impacts, including scoping, checklists, matrices, qualitative and quantitative models, literature reviews, and decision-support systems (Kuitunen et al., 2007). In this report, impacts are assessed using a risk-based matrix (refer to Section 6.4 and Table 10).

The assessment is based on a precautionary principle as advised by the Secretariat of the Convention for Biological Diversity (2006). While it is based on the best available scientific evidence, in cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect is assumed. The impact assessment was conducted based on implementation of minimum controls as described in Section 7.5.2.

7.5.2 Ecological Impact Prediction and Evaluation

7.5.2.1 Ecological Impact Prediction

The future residential development area will involve extensive site clearance and construction activities. Overall, ecological impacts expected to arise from the future residential developments can be classified into four types over three stages of development, namely the pre-construction, construction and operation. A summary of the associated impacts during each stage is provided in Table 29.

7.5.2.1.1 Ecological Impact during Pre-construction Stage

At this stage, hoarding and soil investigation works will occur before the clearance of vegetation within the future residential development area. This process involves the use of heavy machineries for the removal of all above-ground vegetation (1 to 2 weeks) and placement of soil control measures (netting). This is followed by earthworks involving excavation of soil (over a few months) within the development area. Examples of the machineries used include excavators, vibro hammer and piling rakes which can weigh up to a few hundred tonnes. This stage also involves the mobilisation of construction equipment and resources and erection of workers’ camps. Minimum controls at pre-construction stage include establishment of Tree Protection Zones for trees to be conserved, placement of soil erosion control measures and execution of fauna response and rescue protocol.

Major impact activities are expected during this stage from vegetation clearance and soil excavation, from species to the ecosystem level. Habitats will be lost as all above, and some under-ground features, may be removed completely. This will result in disturbances to soil, wildlife, thus ecological processes, and exposure of the adjacent forest to edge effects. Often during these activities, fauna communities get displaced and may get killed if they are unable to escape quickly or encounter accidents with fast-moving traffic observed along the adjacent road (i.e. Admiralty Road West) Non-flying fauna (i.e., fishes, herpetofauna and ground mammals) are likely to be the most affected as they would have the most

difficulty in escaping. While flying fauna (e.g., birds, bats, butterflies and other insects) appear to be less vulnerable, many species are at risk if they are unable to find an alternative, suitable habitat. This is particularly true for butterflies, which have short lifespan. Species of conservation significance are also affected because habitat loss will result in them becoming rarer and more endangered. Thus, negative impacts are expected for all fauna groups over both the short and long term. At the development area, improper waste disposal by the contractors and soil pollution will greatly degrade the habitats, particularly for waterbodies, which are sensitive to sedimentation. Any impacts to the waterbodies and Sungei Cina mangrove may be irreversible and extremely detrimental to the aquatic communities.

7.5.2.1.2 Ecological Impact during Construction Stage

At this stage, the installation of hard structures will begin. This will include piling works for the construction of basement and foundation systems, followed by the construction of the building itself. This process will involve the use of heavy machineries, such as vibro hammer, fork lift and cranes. These activities are expected to take place at the designated areas for the construction of buildings.

Minimum controls at pre-construction stage include:

1. Implementation of soil erosion control measures
2. Preventive measures for mosquitoes through good housekeeping practices. Remove sources of stagnant water or water-bearing receptacles. E.g.
    a. Providing well-maintained pitched roof, clearing discarded items daily, store materials appropriately, level up ground depression/uneven surfaces, ensure effective drainage flow.
    b. Daily checks by Environmental Manager on site.
3. Proper storage of materials away from waterbodies, and prevent leaching of harmful materials (e.g. bentonite slurry) into waterbodies.
4. Execution of fauna response and rescue protocol

Moderate impact activities are expected during this stage due to disturbances from the construction activities. Due to the massive scale of construction and size of equipment involved, these activities are likely to result in elevated dust, noise and brightness levels, which can alter behavioural patterns and biological rhythms of fauna. These impacts are likely to expand to the local environment and affect animals in adjacent park (e.g. Admiralty Park, Woodlands Waterfront Park). Furthermore, improper waste disposal by the contractors and soil pollution would greatly degrade the habitats, particularly for waterbodies, which are sensitive to sedimentation. Any impacts to the waterbodies and Sungei Cina mangrove may be irreversible and could be extremely detrimental to the aquatic communities.

7.5.2.1.3 Ecological Impact during Operational Stage

At this stage, the concrete buildings and ground cover would have been completed, causing minor to major changes to the baseflow, groundwater and hydrology conditions. These changes may impact the proposed core conservation area and Sungei Cina mangrove.

This stage will also involve the demolition, removal of construction materials and vehicles, and withdrawal of personnel. It will likely generate the highest level of noise and light pollution from buildings, human activities and vehicles, just like any other man-made environment. The disturbances are likely to be frequent and over a long-term and continue to impact the surrounding forested areas remaining. An additional impact would be bird collisions as more buildings are now located on the forest edges. Landscaping (replanting) will also take place around the buildings, which is considered of positive impact.

Table 29: Summary of Project Stages and Associated Ecological Impacts

Project Stage	Associated impacts on environment
Pre-construction	
Site Investigation	a) Disturbance to soil (e.g. soil compaction) b) Localised loss/change of habitat and vegetation along where the machinery is transported c) Possible fauna mortality or injury d) Disturbance to wildlife due to noise, dust and human presence
Clearing of vegetation and excavation	e) Permanent vegetation and habitat loss and loss of connectivity f) Fauna mortality or injury g) Disruption of ecological processes (e.g. changes in waterbodies' hydrology) h) Disturbance to soil and pollution from soil erosion i) Disturbances to wildlife due to noise, dust, light and human presence j) Habitat degradation due to improper waste disposal or release of hazardous substances k) Drop in surface water quality or water contamination
Construction	
Construction of piling, footing, and retaining wall; Construction of buildings and facilities	l) Loss of connectivity m) Fauna mortality or injury n) Disturbance to soil (soil compaction, soil erosion, soil removal) o) Disturbances to wildlife due to noise, vibration, dust, light and human presence p) Habitat degradation due to improper waste disposal or release of hazardous substances q) Drop in surface water quality or water contamination
Operation	
Operation	r) Disruption of ecological processes (e.g. changes in waterbodies' hydrology) s) Disturbances to wildlife and habitat due to noise, dust, light and human presence t) Habitat degradation and other detrimental effects to fauna due to improper waste disposal (littering from public) or release of toxic substances (insecticides) u) Contamination of surface water v) Introduction of non-native species w) Bird collision with buildings x) Human-wildlife conflict

7.5.2.2 Evaluation of Ecological Impacts on Future Residential Development Area

Habitats that will be directly affected by the future residential development works include native-dominated secondary forest, exotic-dominated secondary forest, herbaceous/scrubland vegetation and freshwater stream (refer to Figure 76, Figure 77 and Figure 78). The future residential development site also comprises habitat of moderate-high ecological value (native-dominated secondary forest) and moderate ecological value (abandoned-land forest).

Within the future residential development area, permanent irreversible impacts are expected from substantial site clearance and earthworks at the pre-construction stage. Habitats of moderate-high

ecological value (native-dominated secondary forest) and moderate ecological value (abandoned-land forest) will also be directly impacted. Other associated impacts from habitat loss include disruption of ecological processes, disturbances to soil and fauna mortality. The rating for the significance of the associated impacts during each activity of the construction stage is provided in Table 30.

Due to substantial site clearance expected during the pre-construction stage, the ecological impacts will not be assessed for the development area during construction and operational stage. Instead, impacts will be assessed to the surrounding sensitive receptors, which are the proposed core conservation area and Sungei Cina mangrove, described in the next section.

7.5.2.3 Evaluation of Ecological Impacts on High Ecological Value Habitats

Other habitats of high ecological value within the project area are the proposed core conservation area which contains the swamp forest, as well as the Sungei Cina mangrove.

At the proposed core conservation area, major impacts are expected from proposed road (Option A). Only minor impacts are expected to the Sungei Cina mangrove since it is not directly impacted.

7.5.2.3.1 Proposed core conservation area, specifically the Native-dominated Freshwater Swamp Forest (also refer to Sections 8.4.5.2, 8.4.6.2.1, 9.4.3.3 and 9.4.5.3)

The development plans provided by HDB (Section 3.3) shows that the proposed core conservation area overlaps with several development features – i) approximately 1.21ha of the proposed core conservation area lies within the proposed residential area (Parcel B) and ii) proposed road that cuts through the southern tip of the proposed core conservation area.

The provisional grading plans provided by HDB show that the proposed regraded area overlap with the proposed core conservation area (refer to Figure 76, Figure 77 and Figure 78). Although the volume of water baseflow feeding into the native-dominated freshwater swamp forest is low (less than 3.3 m^3 per day in average) (refer to Table 75), the mean decreased groundwater baseflow is expected to be 72% in the short-term and 62% in the long-term given the large scale clearance of the future residential development site (refer to Table 83 and Table 88 respectively). The groundwater drawdown is expected to range from 0 to 5 m in the short-term and 0.1 to 5.5 m in the long term (refer to Table 82 and Table 88 respectively). These impacts are considered major as they are likely to affect the survival of the swamp forest (refer to Section 9.4.6). The rating for the significance of the associated impacts during each activity of the construction is provided in Table 31.

Approximately 1.21ha of Parcel B overlaps with the proposed core conservation area. It results in the loss of a portion of the native-dominated secondary forest and freshwater stream which constitute major impacts. In addition, it receives moderate impacts from disturbances to wildlife during construction and operational phases. The rating for the significance of the associated impacts during each activity of the construction is provided in Table 31.

The proposed road (Option A) will encroach into the southern tip of the proposed core conservation area and its 15 m buffer based on the estimated working space provided by HDB in Figure 76. It will impact 0.139 ha of the proposed core conservation area and 0.224 ha of the buffer, which make up 8.3% of the total area (0.36 ha). Furthermore, the southern tip of the native-dominated freshwater swamp forest would be affected. This habitat loss will be permanent and contribute to dwindling forested areas across Singapore, where deforestation is the main factor contributing to local extinctions (Brook et al., 2003).

Within the impacted proposed core conservation area and its buffer, 16 flora specimens of 10 species of conservation significance and two large trees are expected to be affected. Of the flora specimens, 8 are potential transplant candidates (7 species). The 3 other specimens not recommended for transplant are *Oncosperma horridum*, *Pouteria obovata* and *Syzygium polyanthum*, which are deemed difficult to salvage or survive. The two large specimens comprised one swamp forest species (*Oncosperma tigillaria*) which cannot be salvaged, and one oil palms (*Elaeis guineensis)* of low conservation value. Major impacts are expected from habitat loss, disturbance to soil, disruption of ecological processes and fauna mortality during pre-construction (vegetation clearance). Moderate impacts are expected from disturbances to wildlife during construction and operational stages. Overall, the proposed core conservation area, specifically the native-dominated freshwater swamp forest, was assessed to receive major impacts from Option A of the proposed road (Option A). The rating for the significance of the associated impacts during each activity of the construction is provided in Table 32.

7.5.2.3.2 Sungei Cina Mangrove (for more details refer to Section 8.4.6)

The ecological impact of the two options considered by PUB for freshwater discharge outlet along Sungei Cina were assessed (refer to Section 8.4.1 and Figure 98 for more details about each option, i.e. Option 1 and Option 2). Ecological impacts were preliminarily assessed to be lower for Option 2 as it is further downstream from the Sungei Cina mangrove. Hydrological impacts to the mangrove are considered minor in both options (refer to Sections 8.4.6.1). However, it will be important to re-assess the actual impacts based on the final construction working boundary.

The potential change in salinity level within the Sungei Cina mangrove area was assessed after the construction of the proposed development. The two options for freshwater discharge outlet along Sungei Cina were compared. Based on the modelling results presented in Section 8.4.6.1 (refer to Figure 100 and Figure 103), the salinity in the main Sungei Cina (P1 & P3) and upstream of Sungei Cina (P4) showed no major change before and after the proposed development, hence no significant impact on the Sungei Cina mangrove is expected. The salinity in the larger and shallower mangrove patch that pans out from Sungei Cina (P3), however, showed an expected increase after the development. The existing daily salinity ranges between 0 to 14 ppt, while the expected daily salinity after the development ranges between 3 to 16 ppt. Despite an increase, this is within the salinity range found within mangrove (0.5 to 35 ppt) where true mangrove species can tolerate and grow. Thus, the proposed development was assessed to have no major impact of salinity change to the Sungei Cina mangrove area. In fact, an increased salinity from 0 to 3 ppt may have positive impact on the mangrove as it reduces competition from terrestrial plant species that thrive in non-saline condition.

The overall impact of the development construction activities on the Sungei Cina mangrove is expected to be minor. Since the mangrove is not directly impacted, the most significant impacts are expected from the disruption of ecological processes due to changes in baseflow, groundwater and hydrological conditions, habitat degradation and disturbances occurring in proximity due to the development works. However, these are assessed to be of minor impact significance. The rating for the significance of the associated impacts during each activity of the construction is provided in Table 33.

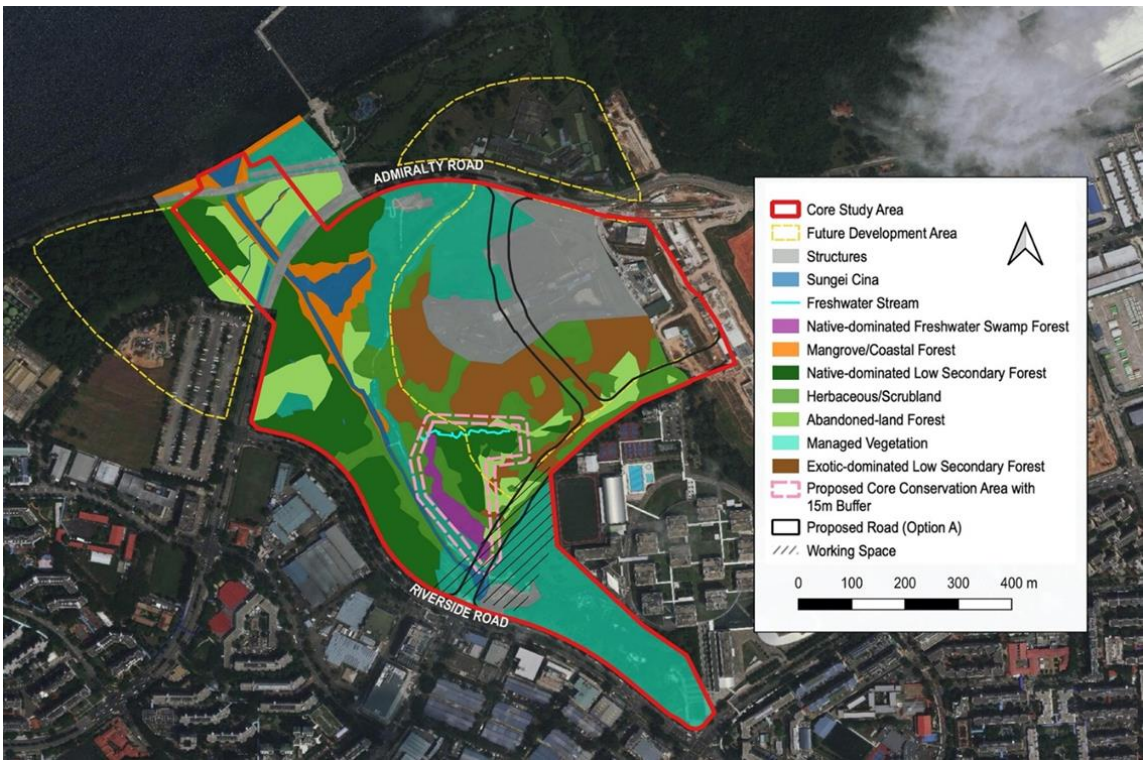


Figure 76: Map of Proposed Core Conservation Area Overlaid with Option A of the Proposed Road , Inclusive of its Working Space

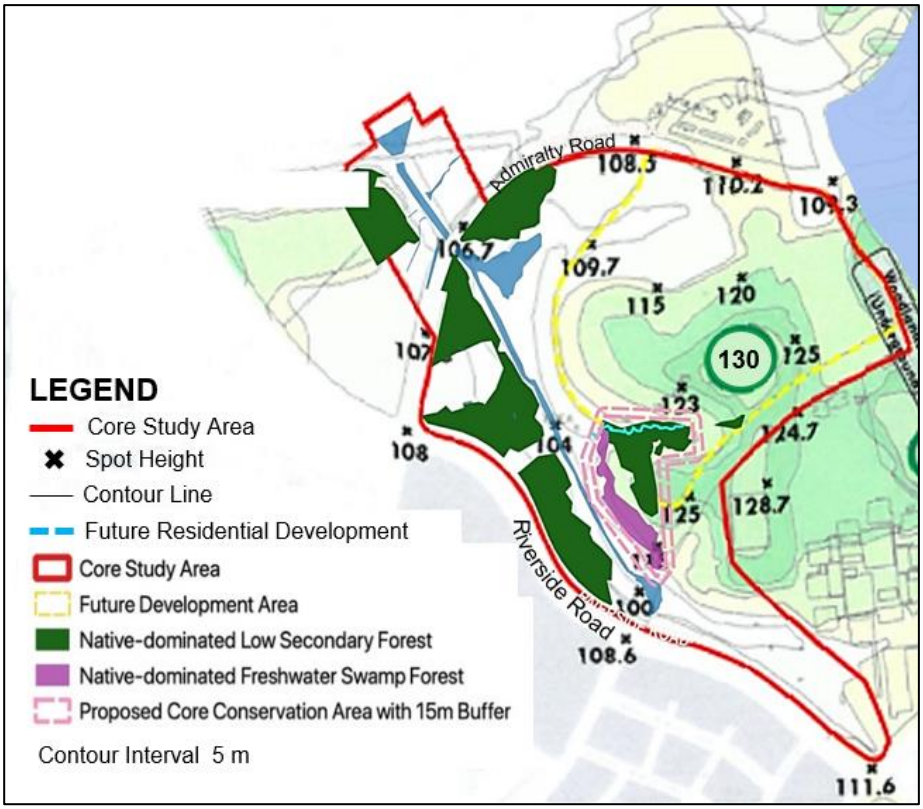


Figure 77: Proposed Core Conservation Area Relative to Existing Platform Levels within Core Study Area

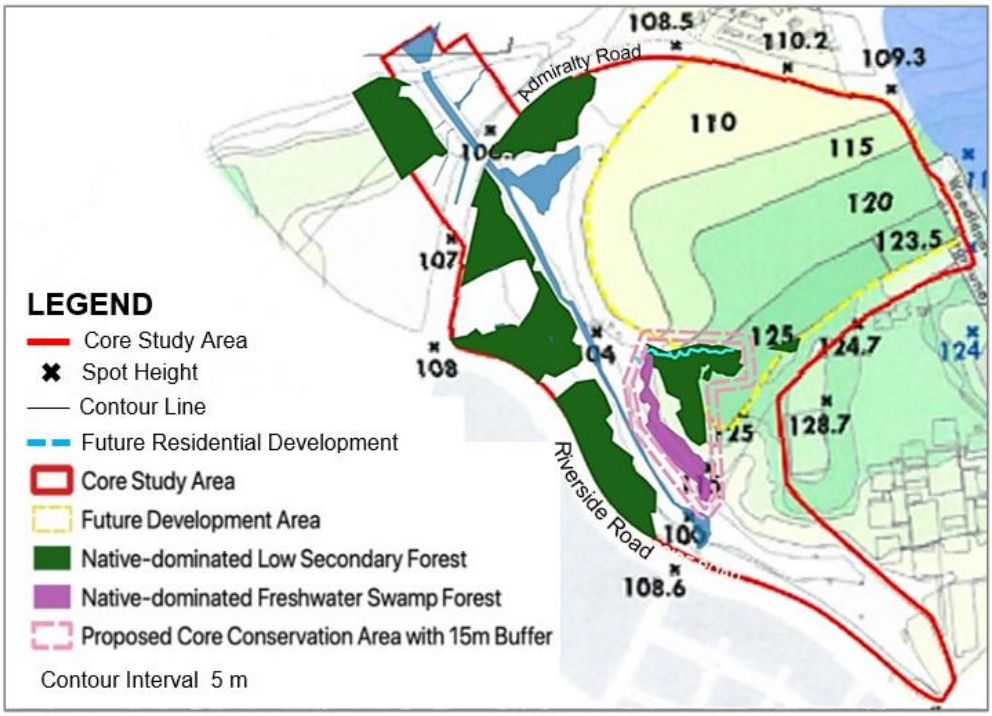


Figure 78: Proposed Core Conservation Area Relative to Proposed Platform Levels within Core Study Area

Table 30: Significance of Ecological Impacts from Each Construction Activity on the Future Residential Development Area

Construction Activities	Receptor Sensitivity (S)	Impact Intensity (I)	Impact Consequence (C= S x I)	Likelihood (L)	Impact Significance (C x L)
OVERALL					**MAJOR**
Pre-construction					**Major**
Disturbance to soil	Priority 2	Medium	Medium	High	**Major**
Disruption of ecological processes (e.g. changes in waterbodies' hydrology)		Medium	Medium	High	**Major**
Habitat loss & loss of connectivity		Medium	Medium	High	**Major**
Fauna mortality or injury (direct or indirect)		Medium	Medium	High	**Major**
Road kills		Low	Low	High	Minor
Disturbance to wildlife due to noise, light and human presence		Medium	Medium	High	**Major**
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor

Table 31. Significance of Ecological Impacts from Each Construction Activity of the Proposed Residential Development Area on the Proposed Core Conservation Area

Construction Activities	Receptor Sensitivity (S)	Impact Intensity (I)	Impact Consequence (C= S x I)	Likelihood (L)	Impact Significance (C x L)
OVERALL					**MAJOR**
Pre-construction					**Major**
Disturbance to soil	Priority 1	Medium	Medium	High	**Major**
Disruption of ecological processes (e.g. changes in waterbodies' hydrology)		Medium	Medium	High	**Major**
Habitat loss & loss of connectivity		Medium	Medium	High	**Major**
Fauna mortality or injury (direct or indirect)		Medium	Medium	High	**Major**
Road kills		Low	Low	High	Minor
Disturbance to wildlife due to noise, light and human presence		Medium	Medium	Medium	**Moderate**
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor
Construction					**Moderate**
Disturbance to wildlife due to noise, light and human presence	Priority 1	Medium	Medium	Medium	**Moderate**
Pollution from soil erosion		Medium	Medium	Low	Minor
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor
Operation					**Moderate**
Disturbances to wildlife due to noise, light and human presence	Priority 1	Medium	Medium	Medium	**Moderate**
Bird collisions		Low	Low	Low	Minor
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor
Road kills		Low	Low	Low	Minor
Human-wildlife conflict		Low	Low	Low	Minor

Table 32: Significance of Ecological Impacts from Each Construction Activity of the Proposed Road (Option A) on the Proposed Core Conservation Area

Construction Activities	Receptor Sensitivity (S)	Impact Intensity (I)	Impact Consequence (C= S x I)	Likelihood (L)	Impact Significance (C x L)
OVERALL					**MAJOR**
Pre-construction					**Major**
Disturbance to soil	Priority 1	Medium	Medium	High	**Major**
Disruption of ecological processes (e.g. changes in waterbodies' hydrology)		Medium	Medium	High	**Major**
Habitat loss & loss of connectivity		Medium	Medium	High	**Major**
Fauna mortality or injury (direct or indirect)		Medium	Medium	High	**Major**
Road kills		Low	Low	High	Minor
Disturbance to wildlife due to noise, light and human presence		Medium	Medium	Medium	**Moderate**
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor
Construction					**Moderate**
Disturbance to wildlife due to noise, light and human presence	Priority 1	Medium	Medium	Medium	**Moderate**
Pollution from soil erosion		Medium	Medium	Low	Minor
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor
Operation					**Moderate**
Disturbances to wildlife due to noise, light and human presence	Priority 1	Medium	Medium	Medium	**Moderate**
Bird collisions		Low	Low	Low	Minor
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor
Road kills		Low	Low	Low	Minor

Human-wildlife conflict Landscaping (replanting)		Low	Low	Low Medium	Minor (positive)

Table 33: Significance of Ecological Impacts from Each Construction Activity of the Proposed Development on the Sungei Cina Mangrove

Construction Activities	Receptor Sensitivity (S)	Impact Intensity (I)	Impact Consequence (C= S x I)	Likelihood (L)	Impact Significance (C x L)
OVERALL					**MINOR**
Pre-construction					**Minor**
Disturbance to soil	Priority 1	Low	Low	Low	Minor
Disruption of ecological processes (e.g. changes in salinity and hydrology)		Low	Low	Low	Minor
Habitat loss & loss of connectivity		Low	Low	Low	Minor
Fauna mortality or injury (direct or indirect)		Low	Low	Low	Minor
Disturbance to wildlife due to noise, light and human presence		Low	Low	Low	Minor
Pollution from soil erosion		Low	Low	Minor	Minor
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor
Construction					**Minor**
Disturbance to wildlife due to noise, light and human presence	Priority 1	Low	Low	Minor	Minor
Pollution from soil erosion		Low	Low	Low	Minor
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor
Operation					**Minor**
Disturbances to wildlife due to noise, light and human presence	Priority 1	Low	Low	Minor	Minor
Habitat degradation due to improper waste disposal		Low	Low	Low	Minor

Construction Activities	Receptor Sensitivity (S)	Impact Intensity (I)	Impact Consequence (C= S x I)	Likelihood (L)	Impact Significance (C x L)
Human-wildlife conflict		Low	Low	Low	Minor
Landscaping (replanting)				Medium	(positive)

7.6 Recommended Mitigation Measures

In this section, mitigation measures for the future residential developments are discussed in order of priority: avoidance, minimisation, compensation and enhancement. The successful implementation of mitigation measures requires the commitment of contractors, arborists and biodiversity specialists.

The design stage of the proposed residential development can significantly influence the extent of the impacts, as the structural design will dictate the location of structures, construction methodology which influence the extent of impact caused during pre-construction, construction and operation stage. The design recommendations are integrated into the mitigation measures proposed in this section. The mitigation measures are summarised in Table 34.

7.6.1 Avoidance

7.6.1.1 Design & Pre-construction Stages

Based on the boundary of the proposed residential development area reflected in the Master Plan 2019, a majority of the core biodiversity area is not directly affected. However, there are concerns on indirect impacts to the hydrology of freshwater swamp forest. As such, the following measures are proposed:

- Retain the proposed core conservation area and a 15 m buffer around it. The area with the concentration of significant large trees can be planned as an extension to Admiralty Park – trails and footpaths may be constructed within, but no large structures should be built in the proposed core conservation area.
- Explore re-aligning the proposed road to avoid the proposed core conservation area (and buffer), adopt Option B as much as possible
- Ensure the survival of the freshwater swamp forest in the proposed core conservation area by:
    - Diverting dry-weather flow from nearby culvert or development where possible into the swamp area to ensure a constant small volume of water (~3m^3/day) to compensate for the reduction in baseflow to ensure the survival of the freshwater swamp forest. During the detailed design stage, hydraulic models should be undertaken to accurately determine how the development and land grade change will affect the existing volume of water flowing from the catchment to the freshwater stream and freshwater swamp. During field surveys, it was observed that the stream was dry three out of the four times. In planning the drainage, some surface flows could be diverted from the proposed development into the stream to ensure that a constant small volume of water flows through the stream and freshwater swamp. Care should also be taken not to drain too much additional catchment area to the existing stream such that it overburdens it. Mitigation measures are presented in detail in Section 8.5.1 and include i) diversion of stormwater run-off from existing drain to freshwater swamp forest (refer to Figure 116 ii) stormwater diversion from the proposed cut-off drain of new development to freshwater stream (refer to Figure 117).
    - Ensure that associated slope stabilisation and grading works will not impact the freshwater swamp forest.
- Ensure no or minimal impacts to the two areas of interest: Sungei Cina mangrove and the proposed core conservation area. For example, ensure no siltation into the waterbodies, ensure no encroachment by development works, no clearance or trampling or vegetation or damage to trees.
- Establish Tree Protection Zones (TPZs) to be conserved.

7.6.2 Minimization

7.6.2.1 Design Stage

Within the proposed core conservation area, lightweight structures such as boardwalk may be considered if they can be constructed manually in the forest with minimal working space. Flora specialist and arborist should also be engaged to review the design plans and method statements to minimise impacts to the trees.

In recent years, there have been calls for a more ecologically sensitive urban planning and design in the face of rapid urbanisation. This helps to reduce the overall adverse impact of the development and reduces urban-related problems to wildlife. Below are some recommendations for bird collisions related issue.

Bird-friendly building design can help significantly reduce the incidences of bird collisions, especially for higher storeys that are above tree canopy height. Some examples are stated here (Sheppard & Phillips, 2015):

- Minimise the quantity or surface area of glass. This could be achieved by reducing the amount of glass façade or installing a decorative cladding over the glass façade so that the reflections on the glass facades would be broken up.
- Incorporate features that increase the visibility of glass (including mirrored and non-mirrored reflective glass, and transparent glass) or dampen reflections to reduce the appearance of clear passage to sky or vegetation. Possible strategies include film coating (E.g. CollidEscape; http://www.collidescape.org), angled glass, interior or exterior shades, decals, fenestration patterns, grilles, sunshades, screens, blinds and netting. Exterior shades confer the freedom of choosing to only use it during periods where bird collisions are expected to be most frequent, e.g. migration seasons.
- When decals or patterns are added to increase the visibility of the glass, it is advised that the pattern should be as dense as possible as it will appear more clearly as a solid object to birds thus more effective (GDS, 2007). For example, for WindowAlert decals, it is recommended for decals to be 5cm apart horizontally and 10 cm apart vertically (FLAP, n.d.)
- Avoid interior vegetation near windows as birds may confuse this with exterior vegetation and fly towards them.
- Avoid planting vegetation close to glass so that reflection of vegetation does not confuse birds, which may fly into the building. If there are sides which are close to the natural vegetation, the façade should have shades installed or netting that are a short distance away from the glass to prevent birds from crashing into it.
- Buildings should not have courtyards or corridors that are enclosed by glass as these may confuse birds to fly through.

Bird-friendly designs do not necessarily add restrictions or cost to the project. References that can be used for designing a bird-friendly building are:

- Sheppard C & Phillips G (2015) Bird-friendly building design (2nd edition). American Bird Conservancy, 1–58. [Retrieved from https://abcbirds.org/wp-content/uploads/2015/05/Bird-friendly-Building-Guide_2015.pdf].
- Green Development Standard (GDS) (2007) Bird-friendly development guidelines. City of Toronto, 1–42. [Retrieved from

https://www1.toronto.ca/city_of_toronto/city_planning/zoning__environment/files/pdf/development_guidelines.pdf].

7.6.2.2 Pre-construction Stage

It is recommended to:

a) Revise method statements by contractor to minimise unnecessary works and reduce fauna impacts (e.g. clearance plan).
b) Tree-felling works to avoid bird breeding and nesting season (Mar–Jul) as much as possible
c) Engage fauna specialist to carry out pre-felling inspection for fauna habitats before clearance.
d) Engage flora specialist to transplant or harvest trees or saplings of conservation significance unavoidably affected by the works.
e) Engage arborist, flora and fauna specialists to monitor site clearance to inspect and ensure preserved areas and vegetation are not affected by the activity.

7.6.2.3 Construction Stage

Mitigation measures should focus on careful execution of construction activities to minimize working space, putting control measures in place to prevent fauna from accessing or being trapped within the construction zone, preventing soil erosion particularly into the waterbodies and reducing disturbances to the adjacent forested areas. The details of these mitigation measures are listed in Table 34. The key measures are also provided below:

a) Monitoring of the water quality at the swamp forest is recommended to ensure the health of the proposed core conservation area.
b) Tree-felling works should be executed outside of bird breeding and nesting season where possible.
c) Regular site inspections for contractor compliance and identify features that may result in fauna mortality and monitor for possible negative impacts to surrounding habitats.
d) Toolbox briefing for workers to raise awareness on biodiversity to minimise human-wildlife conflict (particularly on pigs and macaques) and ecological impacts.
e) Proper storage and disposal of food to minimise human-wildlife conflict.
f) Execute fauna response and rescue protocol when fauna is found on site.
g) No authorised fogging and use of insecticide to prevent decimation of insect populations. It should only be used in areas that are inaccessible for management or when there is a mosquito nuisance problem or disease outbreak. Minimum control measures to be adhered to. Note that it is not mandatory to conduct fogging at construction sites.
h) Ensure proper disposal of construction waste.

7.6.2.4 Operational Stage

Resident macaque troops are known to be present within and around the core study area. When the development becomes operational, human traffic in the area is expected to increase. With humans and macaques coming into proximity, interactions are expected, and this may lead to conflict when food is involved. In managing human-macaque conflict, management of food availability and enforcement of no feeding by humans are crucial:

1) Use macaque-proof bins and erect educational signs on no feeding of macaques; and
2) Plant species such as *Caryota mitis* and *Ficus fistulosa* within the Admiralty Park forest to ensure sufficient natural food source for macaques.

7.6.3 Compensation

Replanting of trees at least 1:3 ratio to compensate for unavoidable tree felling. Plant more trees along edge of Admiralty Park that can serve as a natural barrier to light, noise and filter vehicular emissions that may be harmful to animals. Enhancement planting to be focus within the 15 m buffer of the proposed core conservation area. Planting outside of the 15 m buffer and along lightweight structures within the proposed core conservation area can also be considered, but subjected to detailed design at later stage.

7.6.4 Enhancement

7.6.4.1 Enhance Landscape Connectivity

HDB's Biophilic Town Framework outlines the strategies needed to plan and design urban landscapes, to achieve the larger urban development goals of sustainability, liveability and resilience (HDB, 2018). Of the 17 ecosystem services listed, eight are applicable to the development area :

- Nutrient recycling (Soil)
- Provision of Wildlife Habitat (Flora and Fauna)
- Heat Mitigation (Outdoor Comfort)
- Sense of Place (People)
- Aesthetic Values (People)
- Social Relations (People)
- Education Values (People)
- Recreation (People)

With the recommended strategies to conserve an approximately 1.21ha of the proposed core conservation area that overlaps with the proposed residential development area that is about 23ha, the conserved area may serve not only to contribute to the 60:40 landscape to building ratio for HDB estates but also contribute to preserving our fauna heritage.

Based on the development plans, part of the green spaces within the core study area will be cleared, leaving Admiralty Park and the Woodlands Waterfront Park as the main green spaces in this part of Singapore. Therefore, it is important to maintain a some connectivity via landscaping and planting to the Admiralty Park, to facilitate movement of fauna between patches and maintain the ecological health of the habitat. Native plant species are highly recommended because being genetically representative of the region's biodiversity; these plants themselves have higher conservation value.

Landscaping through ground and skyrise greenery (e.g. rooftop gardens and green walls) are beneficial to both biodiversity and humans. Considerations include:

- Select a diversity of nectaring, flowering and fruiting plant species. Planting palette (**Appendix I**) should be planned for continuous flowering and fruiting throughout the year in order to provide food and improve ecological processes.
- Plant keystone flora species such as fig trees. These trees have uncoordinated fruiting periods but fruit abundantly when in season. Fig trees are important food source for avian fauna and small mammals.
- Increase vertical vegetation structures (i.e. ground cover, shrub, understory and canopy layers) and forms (e.g. epiphytes, shrubs, ferns, trees).
- Select a diversity of native and non-invasive plants. Native plant species are preferred as they have higher conservation value.

- Prioritise greening along streets or in areas with low disturbances (e.g. low traffic volumes and speeds, low human activities).
- Prioritise greening in areas with greater proximity and connectivity to Admiralty Park.

Another way to improve the biodiversity value is through enhancing the existing waterbodies within the core study area to make it more attractive for the aquatic fauna such as odonates (dragonflies and damselflies), amphibians, reptiles and even birds. Considerations are listed below for both the freshwater swamp and stream:

- Maintain a natural soft bank along water ways and bankside vegetation with gentle slope of at least 1:4 gradient for fauna to move in and out of the water.
- Keep leaf litter and organic debris around the water bodies to act as a base food source for detrital feeders, which in turn are a food source for other fauna. Twigs and branches also act as perching points for fauna.
- Maintain forested areas around the waterbodies as much as possible, plant up to add buffers and areas of refuge – a 15m set back is recommended from the top edge of the slope of the water body.
- Remove rubbish.
- Carry out a stream restoration programme to improve hydrological processes.

As the water bodies are existing, these considerations may be applied at specific areas which require enhancement so as not to disrupt the existing habitats.

Table 34: Recommended Mitigation Measures during the Construction Phase of the Projects

Construction Activity	Ecological Impact	Impact Significance	Description of the Recommended Mitigation Measures
Site clearance and excavation involving: a) Use of heavy machineries to remove all above-ground vegetation; b) Placement of soil control measure; c) Soil excavation; and d) Mobilisation of construction equipment, resources and erection of workers' camps.	• Habitat loss & loss of connectivity • Disturbance to soil • Disruption of ecological processes • Fauna mortality or injury (direct or indirect) • Road kills	**Major** (Irreversible permanent site clearance)	• Careful planning to reduce working space of machinery, access roads and avoid unnecessary and excessive vegetation clearance. E.g. To allow access of machinery from areas that are already disturbed and to be cleared. • Preserve areas with conservation value as much as possible. These areas are identified as important habitats that have either conservation significant flora and fauna, mature trees, higher density of native species, or contain more fauna. • Avoid site clearance during bird breeding season (March to July). • Engage arborist, flora and fauna specialists to clearly mark out areas and plants with conservation value clearly before construction works. • During site clearance, contractors are to ensure that equipment stay within development site and not exceed the boundary limits • Engage arborist and ecologist to monitor site clearance to inspect and ensure preserved areas and vegetation are not affected by the activity. • Implement soil erosion control measures. Retain ground cover as long as possible before removal. When ground cover is removed, Earth Control Measures (ECM) is to be installed. Use only fully biodegradable ECM mats to reduce the likelihood of trapping small animals such as snakes. • Daily toolbox for briefing construction personnel and sub-contractors to remind them to practise caution during work. If any animal is encountered, especially those of conservation status, they must stop work and inform HDB or the attending ecologist-in-charge
	• Disturbances to wildlife due to noise, light and human presence	**Moderate**	• Implement dust control measures to suppress dust to reduce its impact. This includes using dust screens and water suppression systems to control the amount of dust. • Avoid carrying out any work at night and minimise noise even in daytime. Adhere to NEA's noise control guidelines. • To source for quieter construction equipment as far as possible. E.g. through use of silent piler. • Daily toolbox for briefing construction personnel and sub-contractors to brief them on procedure. E.g. informing ecologist if they encounter any fauna.
	• Habitat degradation due to improper waste disposal and release of harmful substances	**Moderate**	• Establish and maintain proper construction waste and debris disposal system. This involves establishing clearly the standard operating procedure of waste management and training the personnel so that they are familiar with the procedure. • Daily toolbox for construction personnel and sub-contractors on mitigating actions, proper waste disposal and equipment storage.

Construction Activity	Ecological Impact	Impact Significance	Description of the Recommended Mitigation Measures
			• Practise due diligence in proper storage and handling of machineries to prevent leaching of oil or harmful materials such as bentonite slurry. • Reduce the use of insecticide so that insects in forest would not be affected by it, which in turn harms insectivorous birds. Inspection for mosquito larvae is required while regular preventive application of BTI is not required. BTI is a non-specific larvicide and its constant use will result in loss of butterflies and odonates larvae. BTI should only be applied in areas where its inaccessible and typical solutions have not been able to resolve stagnant water. • Practise due diligence in proper storage and handling of machineries to prevent leaching of oil or harmful materials such as bentonite slurry. Store and handle harmful materials well away from waterbodies. • Engage a Qualified Erosion Control Professional to formulate and implement an Earth Control Measures Plan in accordance with PUB requirements. • Ensure silt fence at hoarding are installed and maintained properly.
Piling and installation of super structures involving: e) Use of heavy machineries; f) Piling for the construction of basement and foundation systems; and g) Installation of buildings and super structures.	• Disturbances to wildlife due to noise, light and human presence • Habitat degradation due to improper waste disposal and release of harmful substances including insecticide • Pollution from soil erosion	**Moderate**	1) Implement dust control measure to suppress dust to reduce its impact. 2) Reduce the use of insecticides during the construction as it may spread to nearby areas and kill insects which are food for insectivorous birds. 3) Avoid carrying out any work at night and minimise noise even in daytime. 4) To source for quieter construction equipment as far as possible. 5) Plant more trees along the edge of the forest can serve as a natural barrier to light, noise and filter dust that comes from the construction site. 6) Daily toolbox for construction personnel and sub-contractors on mitigating actions, proper waste disposal and equipment storage. 7) Practise due diligence in proper storage and handling of machineries to prevent leaching of oil or harmful materials such as bentonite slurry. Store and handle harmful materials well away from waterbodies. 8) Engage a Qualified Erosion Control Professional to formulate and implement an Earth Control Measures Plan in accordance with PUB requirements. 9) Ensure silt fence at hoarding are installed and maintained properly.
Construction of the development completed and involving: • Demolition, removal of construction materials and vehicles, and	• Habitat degradation due to improper waste disposal and release of harmful substances including insecticide	**Moderate**	• Plant more trees along the edge of Admiralty Park can serve as a natural barrier to light, noise and filter vehicular emissions that may be harmful to animals. • To ensure that the construction waste has been properly disposed. • Reduce the use of interior and exterior lights to reduce light pollution. E.g. Dim or switch off lights once daily operation cease.

Construction Activity	Ecological Impact	Impact Significance	Description of the Recommended Mitigation Measures
withdrawal of personnel; • Human presence; and • New Buildings.	• Disturbances to wildlife due to noise, light and human presence		
	• Bird collisions	**Minor**	• Incorporate bird-friendly features for building design. E.g. Presence of overhangs, replace continuous glass facades with decorative facades and grilles, UV patterned glass.
	• Human-wildlife conflict	**Minor**	• Ensure proper food disposal and enforcement of no feeding of wildlife to avoid human-wildlife conflicts, particularly with macaques.

7.7 Residual Impact Assessment

Measures were developed to mitigate the impacts identified to have moderate or major significance.

Residual impact assessment was conducted taking in consideration of the implementation of suggested mitigation measures. The residual impact significance of each construction activity on sensitive receptorsis listed in the Table 35 and Table 36.

Table 35. Significance of Ecological Impacts from Each Construction Activity of the Residential Development Area on the Proposed Core Conservation Area.

Construction Activities	Impact Significance (C x L)	Receptor Sensitivity (S)		Impact Intensity (I)	Impact Consequence (C= S x I)	Likelihood (L)	Residual Impact Significance (C x L)
OVERALL							**Minor**
Pre-construction							**Minor**
Disturbance to soil	**Major**	Priority 1		Negligible	Imperceptible	High	Minor
Disruption of ecological processes (e.g. changes in waterbodies' hydrology)	**Major**			Low	Low	Medium	Minor
Habitat loss & loss of connectivity	**Major**			Low	Low	Medium	Minor
Fauna mortality or injury (direct or indirect)	**Major**			Low	Low	Medium	Minor
Road kills	Minor			Low	Low	Low	Minor
Disturbance to wildlife due to noise, light and human presence	**Moderate**			Low	Low	Medium	Minor
Habitat degradation due to improper waste disposal	Minor			Low	Low	Low	Minor
Construction							**Minor**
Disturbance to wildlife due to noise, light and human presence	**Moderate**	Priority 1		Low	Low	Medium	Minor
Pollution from soil erosion	Minor			Low	Low	Low	Minor
Habitat degradation due to improper waste disposal	Minor			Low	Low	Low	Minor
Operation							**Minor**
Disturbances to wildlife due to noise, light and human presence	**Moderate**	Priority 1		Low	Low	Medium	Minor
Bird collisions	Minor			Low	Low	Low	Minor
Habitat degradation due to improper waste disposal	Minor			Low	Low	Low	Minor
Road kills	Minor			Low	Low	Low	Minor
Human-wildlife conflict	Minor			Low	Low	Low	Minor

Table 36. Significance of Ecological Impacts from Each Construction Activity of the Proposed Road (Option B) on the Proposed Core Conservation Area.

Construction Activities	Impact Significance (C x L)	Receptor Sensitivity (S)	Impact Intensity (I)	Impact Consequence (C= S x I)	Likelihood (L)	Residual Impact Significance (C x L)
OVERALL						**Minor**
Pre-construction						**Minor**
Disturbance to soil	**Major**	Priority 1	Negligible	Imperceptible	High	Minor
Disruption of ecological processes (e.g. changes in waterbodies' hydrology)	**Major**		Low	Low	Medium	Minor
Habitat loss & loss of connectivity	**Major**		Low	Low	Medium	Minor
Fauna mortality or injury (direct or indirect)	**Major**		Low	Low	Medium	Minor
Road kills	Minor		Low	Low	Low	Minor
Disturbance to wildlife due to noise, light and human presence	**Moderate**		Low	Low	Medium	Minor
Habitat degradation due to improper waste disposal	Minor		Low	Low	Low	Minor
Construction						**Minor**
Disturbance to wildlife due to noise, light and human presence	**Moderate**	Priority 1	Low	Low	Medium	Minor
Pollution from soil erosion	Minor		Low	Low	Low	Minor
Habitat degradation due to improper waste disposal	Minor		Low	Low	Low	Minor
Operation						**Minor**
Disturbances to wildlife due to noise, light and human presence	**Moderate**	Priority 1	Low	Low	Medium	Minor
Bird collisions	Minor		Low	Low	Low	Minor
Habitat degradation due to improper waste disposal	Minor		Low	Low	Low	Minor
Road kills	Minor		Low	Low	Low	Minor
Human-wildlife conflict	Minor		Low	Low	Low	Minor

7.8 Environmental Monitoring and Management Programme for Flora and Fauna

7.8.1 Objectives

The Environmental Monitoring and Management Programme (EMMP) details the implementation and deliverables of the recommended mitigation measures identified from the impact assessment (refer to Section 7.6). The EMMP progressively scrutinizes construction activities as they ensue and applies flexible monitoring and management procedures to protect flora and fauna throughout the construction phase. Since construction activities evolve over time, the EMMP is an adaptive document meant to be amended when necessary. The objective of the EMMP is twofold:

- Environmental monitoring focuses on overseeing that impacts to flora and fauna from construction are within the anticipated level and tackle unforeseen impacts that may arise. It also tracks the effectiveness of the recommended mitigation measures to allow amendment or review of the mitigation measures to better address any issues faced during construction.
- Environmental management employs a more active approach to ensure that impacts to flora and fauna are directly avoided through documentation, auditing and enforcement.

7.8.2 Proposed EMMP for Flora, Arboriculture and Fauna

Flora, arboriculture and fauna monitoring is proposed to take place within and on the edge of the future residential development boundary. This includes the proposed area of conservation (native-dominated secondary forest and native-dominated swamp forest) (refer to Section 7.4.2). A summary detailing the environmental objectives, monitoring parameters, methods, location, and frequency of how the EMMP is to be implemented is provided in Table 37.

A key focus of the EMMP is the impacts of the future residential developments on the aquatic environment. While the flora and fauna monitoring focuses on biotic factors, the results from the monitoring need to be consolidated with the abiotic factors from the water quality studies to provide a more holistic view of the health of the aquatic environment.

Table 37: Flora and Fauna Monitoring and Management Plan

Objectives	Strategy	Monitoring parameters	Method	Location	Frequency
Flora and arboriculture					
Establish tree protection zones (TPZ) (including area of conservation) (refer to Section 7.8.2.3).	Management and Monitoring	• TPZ hoarding must be intact. • Tree physiological health and vigour should not decline. • No mechanical damage to trees that may impair stability.	• Visual assessment of tree condition including physiological health and presence of mechanical damages to trees. • Refer to the Tree Protection and Conservation Guidelines (refer to **Appendix J**).	Development boundary	Once every 2 weeks with monthly reporting
Mark / Identify trees to be transplanted.	Management	• Identify locations of transplant candidates that are affected by construction. • Site setting out on site.	Visually identify trees and tag trees clearly on site with corresponding plan numbers.	Site clearance areas	Prior to tree removal
Mark / Identify saplings to be transplanted / harvested.	Management	Identify locations of saplings with conservation significance that are affected by construction.	Visually identify saplings of conservation significance.	Site clearance areas	Prior to tree removal
Conduct site inspections at construction area for contractor compliance and negative impacts to surrounding habitats.	Management and Monitoring	Document condition of aquatic environment in relation to degradation of fauna habitats.	Visual inspection of features within and around work areas, including mangrove area.		Once every 2 weeks with monthly reporting
Fauna					
Conduct transect surveys to monitor for fauna presence in and around work areas for site awareness.	Monitoring	• Identify features that may result in fauna mortality. • Document trapped/injured/dead fauna within work areas. • Identify types and locations of animals around construction site. • Record activities if possible.	Transect surveys in and around work areas.	Development boundary	Once every month with monthly reporting

Conduct site inspection surveys to monitor for fauna presence in and around work areas for site awareness.	Management and Monitoring	a) Document condition of aquatic environment in relation to degradation of fauna habitats.	Visual inspection of features within and around work areas.	Development boundary	Once every month with monthly reporting
Conduct tree-felling inspection for fauna habitats in accordance with Tree-felling Protocol (refer to Figure 82).	Management	Visual inspection to identify locations of nest and other habitats.	Vegetation sites surveyed by at fauna specialist prior to site clearance. Where necessary, fauna rescue will be attempted.	Site clearance areas	Prior to tree removal
Provide regular toolbox briefing to site team to inform them: 1) Of their responsibilities on-site towards fauna; 2) On how to minimize ecological impacts; and 3) On how to identify key fauna.	Management	Number of occurrences	Visual monitoring	Development boundary	Daily monitoring and record-keeping. Monthly reporting
Execute fauna response and rescue protocol when animals are found on site.	Management	Number of occurrences	Refer to Fauna Response Plan in **Appendix K**.	Development boundary	Report per event

7.8.2.1 Flora Monitoring Programme

The flora monitoring aims to assess the impacts of construction to vegetation and habitats, such as tree health, unauthorised and/or excessive vegetation removal, edge effects, habitat degradation from soil erosion and rubbish dumping. The main objectives are as follow:

- Monitor health of the mangrove habitat.
- Assess impact of construction on the physiological health and structural stability of vegetation and trees at proximity to the development.
- Determine whether there has been excessive and unauthorized removal of vegetation and trees beyond the development boundary.
- Monitor and assess potential edge effects (e.g. predictable failures, accelerated growth of climbers on canopy, change in species composition at the edge) within vegetation adjacent to the development. Make recommendations on mitigating measures where necessary.
- Determine occurrence of mechanical damage to the trees beyond the development boundary from nearby construction. These would include damage to the canopy, trunk or roots that may impair the structural stability of the trees.
- Visual inspection for soil erosion locations that resulted from construction activities.
- Determine if there was unauthorized dumping of rubbish (e.g. food materials), construction debris and materials, oil/chemical leakage that may contaminate soil and waterbodies.

7.8.2.2 Flora Management Programme

The responsibilities of the contractor's flora and arborist team are to monitor and manage all matters related to the adequate and successful conservation of trees and flora vegetation within and adjacent to the contract boundary (into flora vegetation and trees up to 10 m from the contract boundary). These responsibilities include:

1) Conduct fortnightly inspections at construction sites to: ensure tree conditions have not deteriorated; check that integrity of the Tree Protection Zone (TPZ) has not been compromised; verify no mechanical damage to trees has occurred, and; monitor for edge effects at new forest edge.
2) Conduct fortnightly inspections at sensitive aquatic areas (mangrove and coastal) to ensure that the state of environment have not deteriorated.
3) Provide brief monthly report with recommendations of mitigating measure(s) if any. Reports should include photos of tree and TPZs conditions.
4) Assessment to determine need for additional tree removal due to construction constraints and liaise with NParks for permission to remove roots where necessary.
5) Review method statements from builders for construction at proximity to trees.
6) Liaise and coordinate with selected tree works contractor to carry out tree pruning works and carry out inspection to ensure that works is carried out to NParks standards.
7) Work with architects and structural engineer on design changes and structural solutions at proximity to the trees that will meet NParks guidelines and help justify the works within the tree protection zone if necessary.
8) Flora specialist and arborist team should have at least 10 years' relevant experience and demonstrate experience in developments of similar forested context, size, and construction complexity.

9) The Arboriculture Contractor should meet NParks' safety requirements for work at height and LTA's requirements for temporary works along roadsides. All arboriculture workers engaged by the Arboriculture Contractor to perform tree climbing and chainsaw work shall possess a valid basic tree climbing certification based upon demonstrated competence in the Workforce Skills Qualifications (WSQ) module conducted by CUGE or an equivalent WSQ-approved training organisation.
10) The arboriculture crew deployed by the Arboriculture Contractor for the Contract shall possess the following valid competences:
1) Operation of chainsaw for ground work (LS-MT-103E-1)
2) Chainsaw safety and maintenance (LS-MT-102E-1)
3) Perform formative pruning of young trees (LS-MT-114E-1)
4) Provide Arboriculture support on site (LS-MT-116E-1)
5) Workplace safety and health – operators (ES-WSH-101G-1)
6) Respond to Emergency (LS-HM-208E-1)
7) Perform advance rigging and climbing techniques (LS-HM-308S-1)
8) Perform aerial tree access and aerial rescue skills (LS-HM-204S-1)
9) Implement and apply appropriate risk and safety management to sector practices (LS- BP-301S-1)
10) Prepare risk assessment report (LS-HM-406S-1)
11) Operate and work from an elevated work platform (CUGE-ARB-3501)
11) The Contractor and the attending arborist shall complete the 'Verification of Tree Protection Checklist' prior to the start of site clearance (refer to **Appendix J: Annex A**).
12) The Contractor shall instil discipline and raise awareness amongst all personnel on measures and mitigations to prevent damage to retained and protected trees throughout construction by including reminders on tree conservation guidelines within their daily toolbox briefings to workers and crane/excavator operators.

7.8.2.3 Tree Protection Zones

1) The Contractor shall identify and mark out plants for retention on site based on approved plans and set up TPZs individually or in clusters according to the Tree Protection and Conservation Guidelines (refer to **Appendix J**).
2) In addition, as this is a forested site, attention is also given to trees less than 1 m girth and not highlighted within plans. Of particular importance are small plants with conservation status (e.g., Critically Endangered [CR], Endangered [EN], and Vulnerable [VU]). Where identified, these trees should be assessed for transplanting (trees > 0.2 m girth) or harvesting (saplings < 0.2 m girth) potential (refer to Sections 7.8.2.3.2 and 7.8.2.3.3).
3) Any proposal to remove any trees > 1 m girth (regardless of native or SRDB status), or flora which are listed as EN, CR, or VU in SRDB will need approval from NParks.
4) The TPZ, developed in accordance with NParks TPZ guidelines, shall be installed around each tree identified for retention, prior to any site clearance works and/or works involving soil disturbance according to the distances in Table 38.
5) No removal of the TPZ shall be permitted under any circumstances during the duration of the project.
6) All other necessary tree protection measures and work requirements at proximity to trees shall be referenced from the Tree Protection and Conservation Guidelines (refer to **Appendix J**).

Table 38: Recommended Tree Protection Zone Distances Based on Tree Girth

Tree Girth (m)	Recommended Tree Protection Zones
< 0.5 m	1 m radius
> 0.5 m but less than 1 m	2 m radius
> 1 m but less than 1.5 m	3 m radius
> 1.5-m but less than 2 m	4 m radius
> 2 m	5 m radius
Fig trees and trees with critically endangered status	Prescribed individually on a case by case basis

7.8.2.3.1 Site Clearance and Tree Felling

1) Flora specialist and Arborist to review tree felling method statement and proposed schedule of works.
2) Only directional felling methods with a hinge and back cut shall be deployed. Trees SHALL NOT be felled by pushing over with heavy machinery.
3) Tree removal is to be carried out according to the method statement to be submitted and approved by the Superintendent Officer (SO).
4) The Contractor shall ensure that TPZs are set up for trees designated to be conserved prior to any site clearance work.
5) Tree removal must be carried out in a manner that will not affect conserved trees at proximity. On occasions where adjacent TPZ and/or root-balls of retained trees would be affected, the attending Arborist will make an assessment and furnish the necessary recommendation to the SO and receive approval prior to proceeding.
6) Where a tree to be felled is found to have an animal nest, hollow, or burrow within, the ecologist and NParks are to be notified immediately and the tree shall be tagged accordingly. Thereafter, ecologist may carry out fauna rescue or recommend other measures before removal can restart.

7.8.2.3.2 Tree Transplanting

1) Arborist to verify suitability of transplant candidate proposed by NParks arborist. Transplant candidates need to exhibit good physiological health and vigour and be free from structural defects that would reduce their transplant value. They will also be free from disease infestation.
2) Method statement and transplanting schedule to be submitted at least two (2) weeks prior to commencement of any transplanting work. Transplanting to proceed only upon approval of method statement by the SO.
3) Pruning for candidates to be transplanted is to be prescribed by attending arborist so as to reduce undue stress to the tree and prevent asymmetric trunk formation.
4) Prepare ball of soil at roots to be removed with each tree based on the recommended sizes (refer to Table 39). Actual size of root-balls is to be proposed by attending Arborist and approved by SO prior to works.
5) Contractor shall furnish method statement to show how weight of transplant is calculated and therefore deploy adequate machinery to carry out the lift for the transplant. Extraction methods vary according to tree girth (refer to Table 40). The Contractor shall consider this AND his calculated weight of transplant in his proposal.

6) The Contractor shall provide documentation of trees, including photographs, before and after transplanting. Photographs should show intact root balls at the different stages (i.e., during generation of root ball; when tree is lifted, and; when tree is installed into the receiving site).

Table 39: Recommended Root-ball Size to be Extracted with Tree during Transplanting

Girth	Root Ball diameter to extract
< 0.1 m	Minimum 0.4 m diameter
0.1 – 0.2 m	Minimum 0.6 m diameter
0.2 – 0.3 m	Minimum 0.8 m diameter
0.3 – 0.4 m	Minimum 1.2 m diameter
0.4 – 0.5 m	Minimum 1.5 m diameter
> 0.5 m	Size determined in consultation with attending arborist

Table 40: Extraction Methods to be Employed during Tree Transplanting based on Tree Girth

Girth Size	Extraction
< 0.3 m	Manual labour
0.3 – 1.5 m	Heavy machinery or mobile crane up to 200 tonnes
> 1.5 m	Large/Mobile crane (up to 500 tonnes)

7.8.2.3.3 Sapling Harvesting

The Contractor shall observe the following guidelines during the planning and execution of works and reflect these considerations in his submissions:

- Engage flora specialist/arborist to identify and locate species of conservation significance to be harvested.
- Method statement and harvesting schedule to be submitted at least two (2) weeks prior to commencement of any transplanting work. Harvesting to proceed only upon approval of method statement by the SO.
- Document (with photographs) condition of saplings before and after harvesting. Photographs of a sample of saplings shall clearly show intact root balls at the different stages, during generation of root ball, and when sapling is installed into the receiving site.
- Operations shall be planned and coordinated so that the amount of time that the sapling spends in any position other than standing upright with its roots in the ground is kept to a minimum.

Contractor shall ensure that appropriate equipment, machinery, and manpower resources are deployed for the adequate execution of the harvesting works.

Transport of Saplings

a) All saplings shall be manually extracted unless directed otherwise by the Employer and Flora specialist/attending Arborist.
b) Plants to be transported or moved are to be thoroughly wrapped and tied with polythene bags and protected prior to transporting. Exposed trunks are to be wrapped including the lower parts of the branch system and the upper branch system, especially if well-furnished with leaves and twigs during transport (refer to Figure 79).

c) Saplings shall be covered and not left exposed under the sun during the transportation process (refer to Figure 80-A). Otherwise, damaged plant material will automatically be rejected on arrival at site.
d) An inventory list should be kept during the harvesting event (refer to Figure 80-B).

Planting of Saplings

Prior to planting saplings, the Contractor shall consult the Employer and the Flora specialist/attending Arborist for identified locations to plant the samplings, and conduct combined site walks to assess the following:

1) Structure of existing vegetation cover to determine the ideal planting locations. Planting should be carried out to species suitability (e.g., shade-tolerant species will be planted in shaded areas and vice versa).
2) Areas utilised by existing wildlife to avoid unnecessary impact.
3) If necessary, for waterlogging conditions, methods for subsoil drainage should be formulated in consultation with the attending Arborist and Landscape Architect and approved by the SO prior to execution.

Contractor shall propose a maintenance regime to include application of bio-stimulants (humic acid, high EC molasses, fish kelp, mycorrhizae or equivalent) application and watering frequencies and upon approval, carry out the maintenance as agreed.



Figure 79: Example of Photographs of Sampling Harvesting and Transport

NOTE: A) Small saplings being extracted manually; and B) saplings being wrapped completely to reduce desiccation loss and transplant shock.



Figure 80: A) Example of Harvested Saplings Not Covered during Transport and Exposed to Sun which Increase Mortality Rates & B) Example of an Inventory List Generated during Harvesting Event

7.8.2.4 Fauna Monitoring Programme

The objectives of fauna monitoring are as follow:

a) Minimize negative impacts to terrestrial and aquatic fauna, particularly to species of conservation significance.
b) Prevent human-wildlife conflicts.
c) Monitor presence of targeted fauna groups within and outside of work areas.

Fauna monitoring surveys will comprise of transect surveys and site inspection surveys conducted together, at within and outside of hoarded areas. Below is a workflow for performing the fauna monitoring surveys:

a) Perform reconnaissance surveys to become familiarised with the core study area and to identify sensitive habitats and habitat features in relation to the proposed construction.
b) Conduct monthly diurnal and nocturnal fauna and site inspection surveys beginning one month prior to construction and ending two months after reinstatement. This includes both fauna surveys and site inspections.
c) Refer to Fauna Response and Rescue Plan for how to deal with significant wildlife detections (**Appendix K**).
d) Fill out Wildlife Incident Form (**Appendix L**)

7.8.2.4.1 Fauna surveys

Fauna surveys will be conducted along terrestrial and aquatic transects and will target the following fauna groups: odonates (dragonflies and damselflies); butterflies; decapod crustaceans (shrimps and crabs); fishes; herpetofauna (amphibians and reptiles); birds; and mammals. Comparison of species presence can be made with the baseline studies, where appropriate, to provide an indication of the changes in fauna diversity.

Timing and frequency for transect surveys for each targeted fauna group is provided in Table 41. Transect surveys are to cover the bird migratory season (September to March). Diurnal and nocturnal surveys are to be performed by a minimum of two surveyors. All fauna encountered are to be identified to species-level, or to the lowest taxonomic level possible. In addition, the location of each individual is to be recorded using a handheld GPS. Where a species was recorded, the number of individuals observed is to be documented. Lastly, significant incidental observations are to be documented.

Further details of the surveys (type, numbers, length and location) should be determined in consultation with NParks and should take into account construction phases, final construction footprint, final development hoarding plan and baseline studies. Camera trapping is not considered here as ground-dwelling mammal species that are expected and recorded at the core study area are common and widespread, adaptable to urban environments, and of low conservation significance.

Table 41: Timing and Frequency for Transect Surveys for each Targeted Fauna Group

Fauna group	Survey timing (h)	Survey method
Molluscs	Tide level of 0.0m to 0.1m	Quadrat sampling along at mollusc sampling points in the day
Odonates (dragonflies and damselflies)	09.00–16.00	Diurnal visual surveys along aquatic transect (freshwater streams; mangrove and mudflat).
Butterflies	09.00–16.00	Diurnal visual surveys along the terrestrial transect.
Fishes	Low tide between 0.8m to 1.5m	Visual surveys and fish trapping (including tray netting and cast netting) along aquatic transects.
Decapod crustaceans and horseshoe crabs	Tide level of 0.0m to 0.1m	Diurnal and nocturnal visual surveys along aquatic transects.
Herpetofauna (reptiles and amphibians)	07.00–16.00, 20.00–00.00	Diurnal and nocturnal visual and auditory surveys, along both terrestrial and aquatic transects.
Birds	07.00–10.00, 20.00–00.00	Diurnal and nocturnal visual and auditory surveys along the terrestrial transect.
Mammals	07.00–10.00, 20.00–00.00	Diurnal and nocturnal visual and auditory surveys along the terrestrial transect.

7.8.2.4.2 Site inspections

Site inspections involve visual inspection of areas within and outside of the hoarding areas for contractor compliance, fauna mortality or entrapment and habitat degradation resulting from the construction activities. For instance, of minimizing fauna mortality, contractor should adopt biodegradable erosion control blankets that uses coconut husks which is a soft material to prevent snakes from being trapped. Site inspections involve also visual inspections for degradation of the proposed Core Conservation Area, and Sungei Cina w and mangrove possibly from development. In particular, site inspection shall include written and photo documentation of the following parameters:

1) Presence of rubbish and chemical pollution resulting from the construction;
2) Presence of nutrient enrichment or algae blooms;
3) Presence of fauna mortality, particularly mass die-off of aquatic fauna (fish and frogs);
4) Appearance of water;
5) Odour of water, if any; and
6) Velocity of water (slow or fast).

7.8.2.5 Fauna Management Programme

Fauna management will consist of managing fauna within and around all designated work areas. It consists of site orientation and continued biodiversity awareness training for the site team, tree felling inspections, and fauna response plan in event of animal encounters. The objectives of fauna management are as follow:

- Minimize negative impacts to fauna, particularly to species of conservation interest.
- Inspect hoarded areas for any compromises that may allow smaller-sized animals to enter.
- Prevent human-wildlife conflicts.
- Monitor presence of trapped/injured/dead fauna inside hoarded areas.
- Monitor and compare presence of targeted fauna groups within and outside of hoarded areas. During each survey, fill out Fauna Inspection Form (**Appendix M**).

7.8.2.5.1 Tree-Felling Inspections

The aim of tree-felling inspections is to ensure that trees slated to be felled, transplanted or harvested are free of wildlife that are unable to escape, specifically fledgling birds and bird eggs. Accordingly, tree-felling should be executed outside of bird breeding and nesting season where possible.

Tree-felling inspections includes scanning all parts of trees for fauna, active nests, epiphytic ferns, and tree cavities. In addition, surrounding vegetation and burrows are also inspected. In the event that animals are found, the tree is not to be felled. Instead, the animal is to be given 48 hours to leave the tree on its own and the tree is to be reinspected. For active nests, the nests are to be removed prior to felling and the eggs given to the Jurong Bird Park for care. If epiphytic ferns, tree cavities, and fresh burrows are found, then the tree is to be felled under supervision. If no significant findings are made, then the tree can be felled. Tree-felling inspection are to be completed within seven days prior to felling. If trees are not felled within the seven-day period, then the tree is to be reinspected.

The ecologists should also work with the contractors to devise a passive wildlife shepherding through directional vegetation clearance from the eastern part of the site towards the Admiralty Park. The vegetation clearance should plan in phases/parcels and this allows time for the animals to slowly move away from the site clearance (as shown in Figure 81). This means there needs to be a gap to allow animals to exit from one parcel to another prior coordination between ecologists and the contractors.

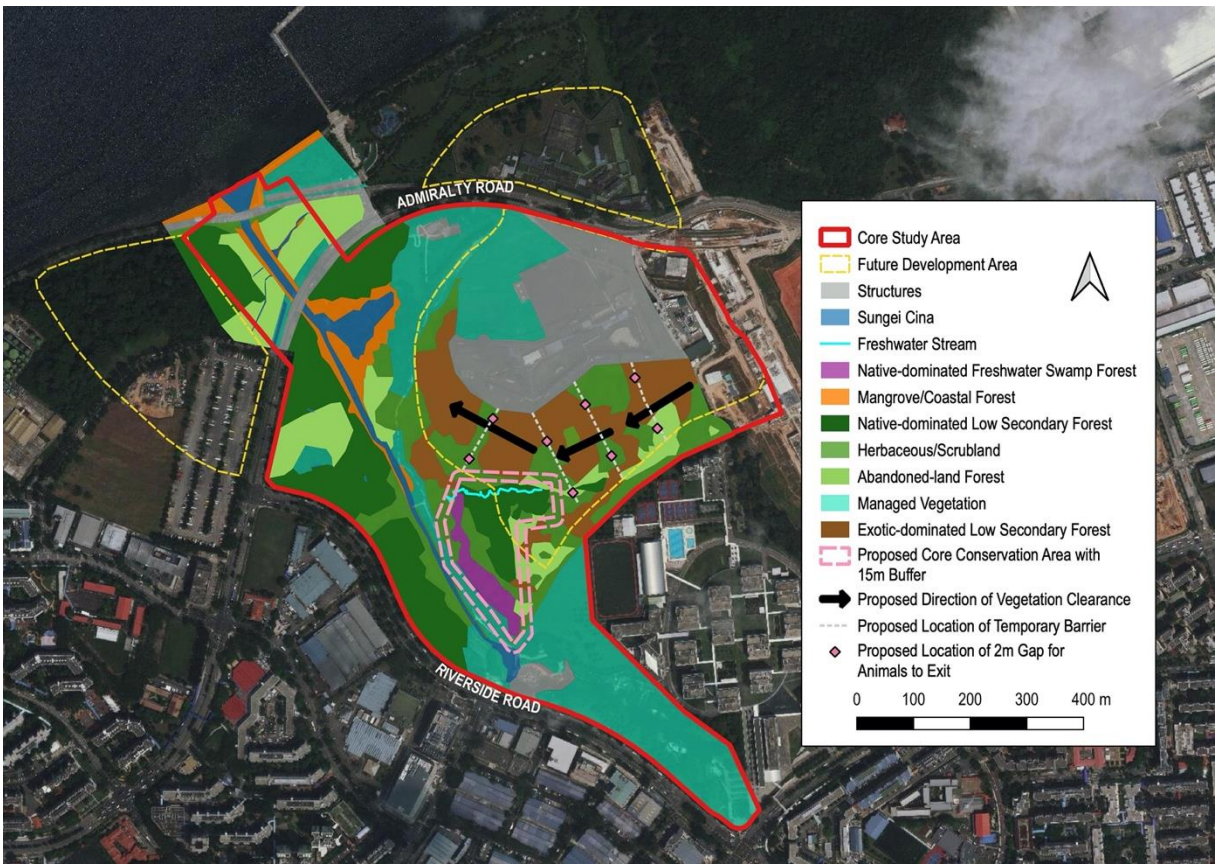


Figure 81: Directional Vegetation Clearance Across Phases

Below is a workflow for performing tree felling inspections; (refer to Figure 82):

- Prior to tree-felling, transplanting, harvesting, and site-clearance, survey designated work site.
- Obtain tree-felling, transplanting, and harvesting schedule from contractor for when these activities will take place.
- Inspect trees within seven days prior to removal to ensure absence of wildlife and active bird nests.
- During each survey, fill out Pre-felling Tree Inspection From (**Appendix N**).
- Refer to Fauna Response and Rescue Plan for how to deal with significant wildlife detections (**Appendix K**).
- Fill out Wildlife Incident Form (**Appendix L**).

7.8.2.5.2 Fauna Response and Rescue Plan

Whenever fauna is encountered in or around work areas by construction personnel, all work activity in the immediate areas is to be suspended and the Fauna Response and Rescue Plan is to be followed (**Appendix K**). The workers are to contact their immediate supervisor who will notify the Ecologist. The Ecologist is to decide whether the encountered fauna is to be given time to leave the site on their own accord or whether it must be captured. All wildlife encounters are to be documented within 24 hours using the Wildlife Incident Form (**Appendix L**).

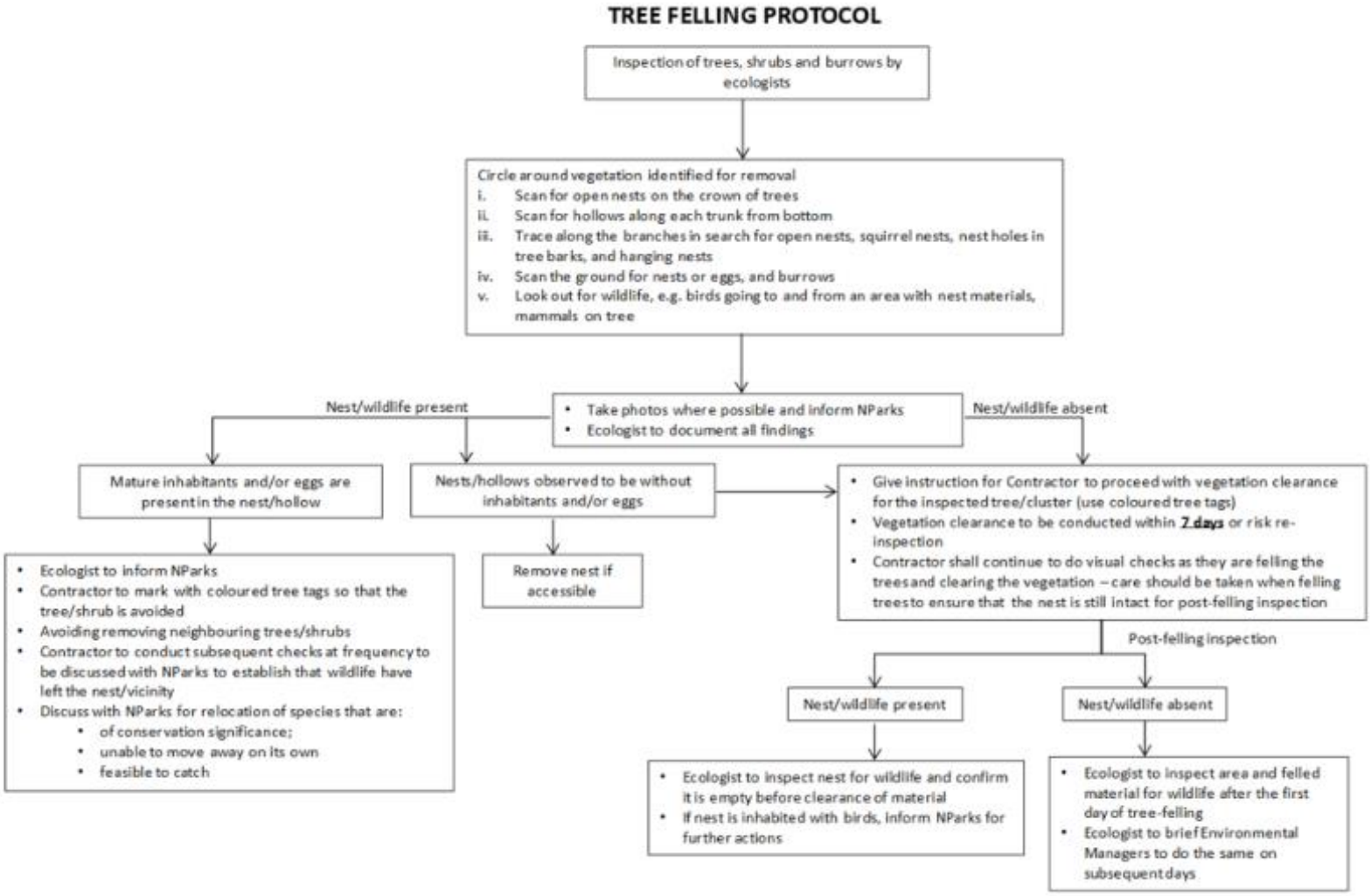


Figure 82: Tree-felling Protocol

8 Hydrological and Water Quality Impact Assessment

8.1 Introduction

This section includes the identification of water quality and stream characteristics within the core study area, as well as the evaluation of the impacts from the future development's construction and operational phases on the waterbodies and hydrology of the overall study area as shown in Figure 83. Referring to Section 3.1, Parcel A was included in the hydrological impact assessment carried out in this section, as requested by HDB and NParks. Besides, surface run-off impact was also assessed for the future development in Parcel C as requested by PUB.

Results from site surveys are presented to establish the baseline conditions which are used to analyse the subsequent changes due to construction and operational activities associated with the projects. It should be noted that no baseline hydrological survey was undertaken for the Parcel A and Parcel C. The topography data for Parcel A and core study area was provided by HDB. Sensitive receptors were identified and classified according to the sensitivity categorization defined in Section 6.2.2. Potential sources of impact from the developments that could affect the identified sensitive receptors and the minimum controls put in place to reduce them are also described to allow for impact prediction. Thereafter, an impact evaluation was carried out to assign significance to predicted impacts and where necessary, mitigation measures are proposed. An EMMP was also developed to specify methods and measures to be included during construction of the projects which are necessary to reduce the environmental impacts to minimal levels.

The scope of work of the hydrological and water impact assessment consisted of:

- Reviewing data provided by HDB to understand the topographic and hydrographic area of the core study area;
- Site reconnaissance survey for a better understanding of the core study area's topography, hydrology, land cover and existing waterbodies;
- Identification of sampling locations for *in-situ* and *ex-situ* water quality analysis of existing waterbodies located within the core study area;
- Hydrological impact analysis to assess the potential impacts of the projects during construction and operational phases;
- Water quality impact analysis to assess the potential changes in salinity concentration within the mangrove area in Sungei Cina caused by the changes in land use due to the future developments;
- Sediment plume analysis to assess the potential changes in Total Suspended Solids (TSS) concentration in Sungei Cina due to the construction of the future developments and its impact to aquafauna present within the river.

To study the viability of diverting storm run-off from adjacent sub-catchments to Sungei Cina, AECOM also conducted a flooding analysis to examine the potential impacts of this storm run-off diversion on flow capacity of Sungei Cina. Indeed, if the flow capacity of the river is less than the required capacity, the additional diverted run-off may cause flooding to the surrounding areas of river. In addition, as the diverted run-off is mainly made of freshwater with relatively lower salinity compared with the brackish water present within Sungei Cina (especially at river mouth), it is also crucial to assess the impacts of the water catchment discharge on the salinity level along Sungei Cina.



Figure 83: Overall Study Area for the Hydrology and Water Impact Assessment and Footprint of the Future Developments

8.2 Baseline Assessment Methodology

The activities performed as part of the baseline assessment included the following:

- To assess the accessibility of the waterbodies within the core study area;
- To verify the information collected from the available topographic survey and satellite images;
- To identify and map out the location of existing waterbodies within the core study area;
- To determine the drain and stream flow conditions and bank characteristics; and
- To assess current water quality conditions in existing waterbodies within the core study area.

8.2.1 Personnel

The personnel who carried out the site surveys consisted of Dr. Hoai Thanh Nguyen, AECOM's water specialist and Dr. Liang Liang, AECOM's environmental consultant.

8.2.2 Desktop Assessment

Desktop research aided in determining the location of existing waterbodies within the core study area. Using the topography survey data, Geographic Information System (GIS) was applied to develop elevation and slope maps for the core study area to support the findings of the hydrological survey. HDB also provided to AECOM the existing catchment map of Sungei Cina which was used for catchment analysis. Owing to these maps, the catchment area (i.e. source of water flow to Sungei Cina) was identified and analysed to further support the modelling work required for this environmental impact study.

8.2.3 Water Quality Baseline Assessment

As mentioned in the section above, waterbodies in the core study area were identified during site surveys. Suitable locations were identified within the identified waterbodies for collection of water sampling in order to assess the baseline *in-situ* and *ex-situ* water quality of existing waterbodies within the core study area. This allowed to establish the baseline conditions of the surface waters at the core study area.

The site surveys were carried out on the following dates:

- 7th and 14th March 2018 (site reconnaissance);
- 26th April 2018 (dry weather conditions);
- 30th April 2018 (dry weather conditions);
- 9th May 2018 (dry weather conditions);
- 16th May 2018 (dry weather conditions);
- 1st June 2018 (wet weather conditions);
- 13th June 2018 (wet weather conditions);
- 27th June 2018 (wet weather conditions);
- 4th September 2018 (wet weather conditions);
- 12th September 2018 (dry weather conditions); and
- 21st September 2018 (dry weather conditions).

As detailed in Figure 84, samples were collected at four water quality stations along the main stream of Sungei Cina (WQ1, WQ2, WQ3 and WQ4), one location at marine area near the river mouth (WQ5), and eight other stations distributed within Sungei Cina catchment (WQ6-1, WQ6-2, WQ6-3, WQ6-4, WQ7, WQ8, WQ9 and WQ10) to monitor the quality of water discharging from its tributaries. These sampling stations represent the upstream, midstream and downstream water quality conditions of the Sungei Cina (refer to Table 42 for the rationale behind location selection).

The dates and numbers of sampling events are summarized in Table 46 and Table 49. Dry weather and wet weather sampling events were surveyed for the purpose of this EIS. Dry weather conditions are defined as after a continuous 48-hour period of no-rain, while wet weather conditions are defined as a rainfall event having more than 10mm of rainfall, with samples to be collected within 3 hours after the rain stops.

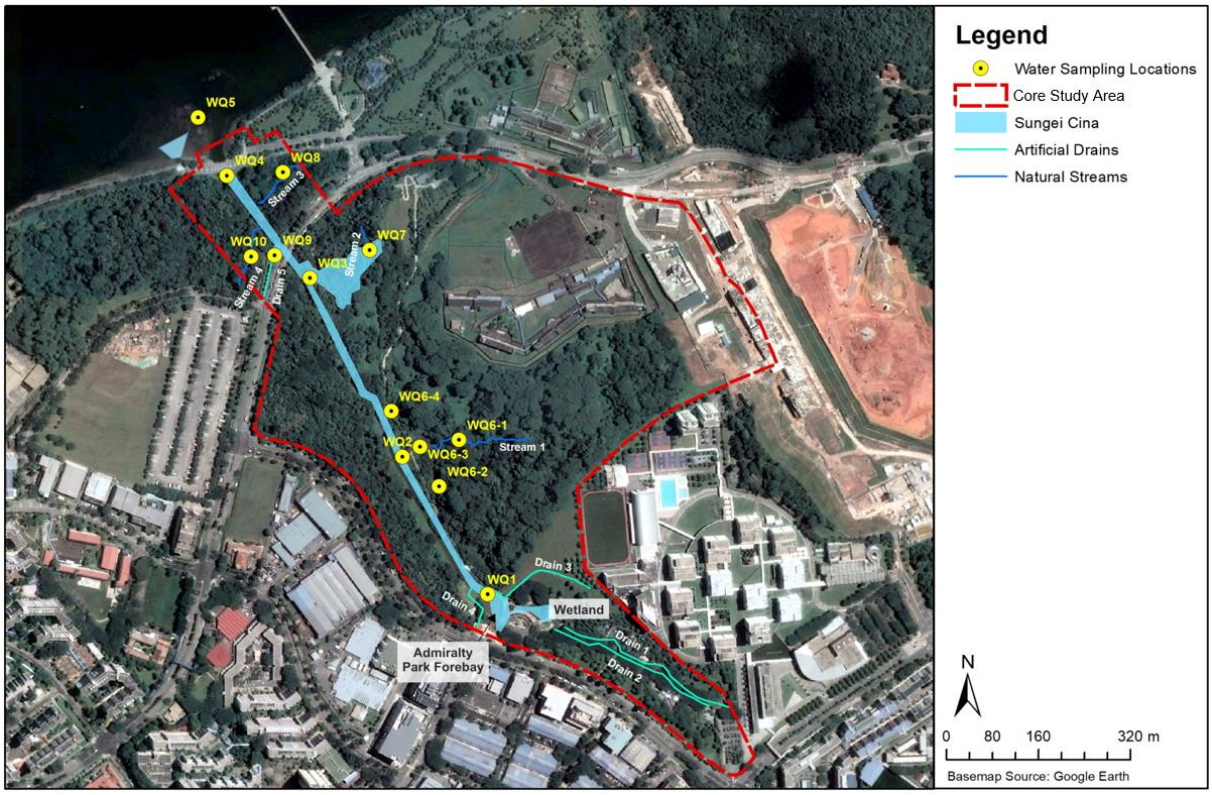


Figure 84: Water Quality Sampling Locations along Sungei Cina and its Outlet

Table 42: Rationale for the Selection of the Water Quality Assessment Locations

Survey Locations	Rationale
WQ1	A major upstream control point channelling stormwater run-off from the dense urban area
WQ2	Starting point for the mixing of saline water and freshwater due to tidal effect
WQ3	Downstream of natural section of Sungei Cina before conversion into an underground concrete culvert and concrete bank channel after Admiralty Road West
WQ4	Intersection point between Sungei Cina (i.e. freshwater) and the ocean (i.e. saline water)
WQ5	Distinct marine environment receiving discharge from Sungei Cina
WQ6-1	A major natural stream collecting run-off within the inland forest to Sungei Cina
WQ6-2 (In-situ data only)	Representative water quality of the swampy area at the downstream of WQ 6-1
WQ6-3	Representative water quality of the swampy area at the downstream of WQ 6-1 where continuous baseflow to Sungei Cina has been observed
WQ6-4 (In-situ data only)	Representative water quality of the downstream of WQ 6-1 where freshwater passes through the culvert to Sungei Cina
WQ7	Major tributary drains to mangrove area within Sungei Cina floodplain
WQ8	Major tributary drains to mangrove area within Sungei Cina floodplain
WQ9	A major downstream control point channelling stormwater run-off from the dense urban area
WQ10	Major tributary drains to mangrove area within Sungei Cina floodplain

8.2.3.1 *In-situ* Water Quality Baseline Assessment

In-situ water quality parameters assessed in this study includes turbidity, conductivity, temperature, salinity, density, pH and dissolved oxygen (DO) and were measured using a multi-parameter sensor SmarTROLL (In-Situ Inc. U.S.A.).

8.2.3.2 *Ex-situ* Water Quality Baseline Assessment

The following *ex-situ* parameters were analysed by Marchwood Laboratory Services Pte Ltd (MLS) using American Public Health Association (APHA) standard methods:

- Total Nitrogen (TN)
- Total Phosphorus (TP)
- Nitrates
- Nitrite
- Ammonia
- Total Dissolved Solids (TDS)
- Orthophosphates
- Total Suspended Solids (TSS)
- Chemical Oxygen Demand (COD)
- Biological Oxygen Demand (BOD_5)
- Total Organic Carbon (TOC)
- Chloride (as chloride ion)
- Grease and Oil
- Enterococcus
- Chlorophyll-a
- Heavy metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg)
- Iron (Fe)

8.2.4 Hydrology Baseline Assessment

Hydrology baseline assessment was first carried out through the review of topographic survey data to development an elevation and drainage map, as well as a slope map. Satellite images from online source were also used as sources of information.

The hydrological survey was conducted by casual exploration methods to identify and outline existing major streams and waterbodies within the core study area. The surface water body conditions, such as stream bank characteristics (e.g. natural bank or artificial bank), were estimated based on visual observations and the water specialist's technical experience; while the width of the waterbodies was determined using a measuring tape and flow velocity was assessed through the use of a Global Water Flow Probe (Xylem Inc. U.S.A). A GPS device was used to track the hydrology survey route. The GPS data were then synchronised with the photos taken on-site to identify the exact location of identified waterbodies.

8.3 Baseline Environment

8.3.1 Existing Hydrological Environment

Within the core study area, stormwater is collected through a comprehensive network of drains and streams which then channelled to Sungei Cina before it is released to the Straits of Johor.

Based on the baseline assessment carried out, four natural streams (i.e. Stream 1, Stream 2, Stream 3 and Stream 4), five concrete drains (i.e. Drain 1, Drain 2, Drain 3, Drain 4 and Drain 5), ten culverts (i.e. C1, C2, C3, C4, C5, C6, C7, C8, C9 and C10) and the Sungei Cina (i.e. the main river) were identified within the core study area, as shown in Figure 85 below. Admiralty Park Forebay and a man-made wetland were located at the upstream of Sungei Cina and the downstream of Drain 1 and Drain 2 as labelled in Figure 85.

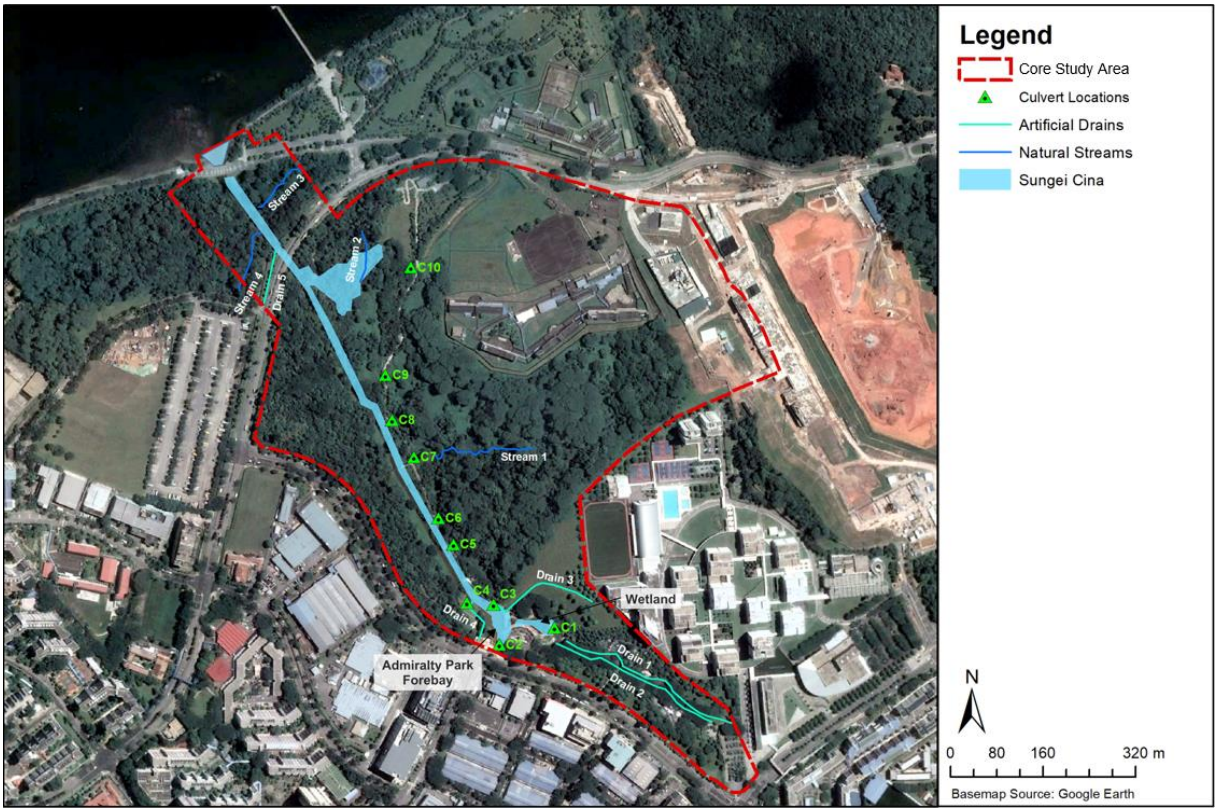


Figure 85: Existing Waterbodies and Culverts within the Core Study Area

Table 43 provides details of the observed bank features and water flow conditions in the identified waterbodies during dry and wet weather conditions. It was observed that all streams have continuous low-flow when no rain occurred on-site or at surrounding area. No flow condition was observed at certain drains during dry weather conditions. Most of the natural streams and drains flow to Sungei Cina through existing concrete culverts located at their downstream as shown in Table 44.

.

Table 43: Description of Existing Streams and Drains within the Core Study Area

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="3">Photos</th></tr>
<tr><td rowspan="4">Stream 1
(Originating from the core study area)</td><td rowspan="4">• Natural bank with vegetation at upstream and midstream (surrounding area has been severely eroded)
• Natural bank with swamp vegetation at the downstream area
• The stream is not tidal influenced</td><td rowspan="4">• Baseflow was observed from upstream to downstream during dry weather</td><td colspan="3">DRY TIME</td></tr>
<tr><td>Upstream</td><td>Midstream</td><td>Downstream</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td colspan="3">Indication of Swamp Vegetation Area at Downstream with very soft ground</td></tr>
<tr><td colspan="2"> 
Testing the ground softness (before)</td><td> 
Testing the ground softness (after)</td></tr>
</table>

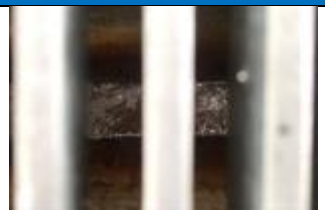
<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th>Photos</th></tr>
<tr><td></td><td></td><td></td><td>Eroded Condition at Surrounding of Midstream
   </td></tr>
<tr><td>Stream 2
(Originating from the core study area)</td><td>• Natural earth bank
• Water in Stream 2 is originated from two sources, i.e. Upstream 1 which is a small sub-catchment and Upstream 2 which is a major sub-catchment.
• Downstream of the stream is affected by tidal change</td><td>• Dry weather flow observed at Upstream 1 and Upstream 2
• During spring tide, the downstream section of Stream 2 is submerged by saline water mixed with freshwater drained from</td><td>DRY TIME
Upstream 1 
Upstream 2 
Downstream 
Overview of Downstream during Neap Tide
Overview of Downstream during Spring Tide</td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="2">Photos</th></tr>
<tr><td rowspan="4"></td><td rowspan="4"></td><td rowspan="4">Upstream 1 and Upstream 2
Wet weather flow observed at Upstream 1 and Upstream 2.</td><td>  </td><td>  </td></tr>
<tr><td colspan="2">WET TIME</td></tr>
<tr><td>Upstream 2</td><td>Downstream</td></tr>
<tr><td>  </td><td>  </td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="2">Photos</th></tr>
<tr><td rowspan="4">Stream 3
(Originating from the core study area)</td><td rowspan="4">• Natural bank with vegetation
• The stream is affected by tidal change</td><td rowspan="4">• Stagnant water was observed in the stream during dry weather condition.
• During spring tide, downstream section of Stream 3 is submerged by saline water.</td><td colspan="2">DRY TIME</td></tr>
<tr><td>Upstream during Neap Tide</td><td>Downstream during Neap Tide</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Upstream during Spring Tide</td><td>Downstream during Spring Tide</td></tr>
<tr><td>  </td><td>  </td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="2">Photos</th></tr>
<tr><td></td><td></td><td rowspan="2">• Wet weather flow was observed during wet weather with a slight increase in its water level.</td><td colspan="2">WET TIME
Downstream during Neap Tide
  </td></tr>
<tr><td>Stream 4</td><td>• Natural bank with vegetation</td><td colspan="2">DRY TIME
Midstream | Downstream (Spring Tide)</td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="3">Photos</th></tr>
<tr><td rowspan="4">(Originating from the core study area)</td><td rowspan="4">• Only the outlet to Sungei Cina is affected by tidal change</td><td rowspan="4">Midstream during dry weather
• Wet weather flow observed at Midstream and Downstream</td><td>  </td><td>  </td><td>  </td></tr>
<tr><td colspan="3">WET TIME</td></tr>
<tr><td colspan="2">Midstream</td><td>Downstream (Neap Tide)</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Drain 1</td><td></td><td></td><td colspan="3">DRY TIME</td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="3">Photos</th></tr>
<tr><td rowspan="6">&
Drain 2
(Originating from the core study area)</td><td rowspan="6">Concrete roadside drains along the paths within Admiralty Park</td><td rowspan="6">• No dry weather flow observed at Drain 1 and Drain 2
• Baseflow observed at the culvert C1
• Stormwater flows from Drain 1 and Drain 2 to the wetland
• Stormwater flow observed during wet weather</td><td>Upstream</td><td>Mid-stream</td><td>Downstream</td></tr>
<tr><td>Entrance of Admiralty Park</td><td>Drain 1 and Drain 2</td><td>Admiralty Park Forebay and Wetland</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td colspan="3">WET TIME</td></tr>
<tr><td colspan="3">Upstream to Wetland</td></tr>
<tr><td colspan="3">  </td><td>  </td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="3">Photos</th></tr>
<tr><td rowspan="4">Drain 3
(Originating from the core study area at higher elevation as compared to other identified drains)</td><td rowspan="4">Concrete drain with grassland surrounding it</td><td rowspan="4">• No flow observed during dry weather
• Stormwater flow observed during wet weather flow</td><td colspan="3">DRY TIME</td></tr>
<tr><td>Upstream</td><td>Mid-stream</td><td>Outlet</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td colspan="3">WET TIME</td></tr>
<tr><td>Upstream</td><td>Mid-stream</td><td>Outlet</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="3">Photos</th></tr>
<tr><td rowspan="6">Drain 4
(Originating from the core study area)</td><td rowspan="6">Concrete drain with grassland surrounding it</td><td rowspan="6">• Dry weather flow observed at Upstream
• High flow rate was observed during wet weather at Upstream</td><td colspan="3">DRY TIME</td></tr>
<tr><td>Upstream</td><td>Mid-stream</td><td>Outlet</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td colspan="3">WET TIME</td></tr>
<tr><td>Upstream</td><td>Mid-stream</td><td>Outlet</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th>Photos</th></tr>
<tr><td rowspan="5">Drain 5
(Originating outside the core study area)</td><td rowspan="5">Concrete Drain</td><td rowspan="5">Dry weather flow observed with flow rate ranging from 0.012m^3/s – 0.015m^3/s
Water level increased, and high-water flow observed during wet weather</td><td>DRY TIME</td></tr>
<tr><td>Midstream | Outlet</td></tr>
<tr><td>    </td></tr>
<tr><td>WET TIME</td></tr>
<tr><td>Midstream | Outlet
   </td></tr>
</table>

<table>
<tr><th>Waterbodies</th><th>Bank Characteristic</th><th>Water Flow Conditions</th><th colspan="3">Photos</th></tr>
<tr><td rowspan="4">Sungei Cina
(Originating within the core study area)</td><td rowspan="4">• Concrete culvert C2 at the freshwater pond
• Earth bank with managed grassland patch and vegetation within Sungei Cina
• Concrete lined bank after Admiralty Road West.
• Concrete Culvert at Outlet
• Midstream and downstream are affected by tidal change</td><td rowspan="4">• Baseflow observed at culvert C2 during dry weather
• Continuous flow observed at midstream to downstream
• During spring tide, saline water mixed with freshwater along Sungei Cina and outlet
• Increased flow observed during and after storm event at Upstream
• Strong water flow observed from the midstream to Outlet during wet weather, hindering saline water intrusion by spring tide</td><td colspan="3">DRY TIME</td></tr>
<tr><td>Upstream (Freshwater Pond)</td><td>Midstream (Neap Tide)</td><td>Outlet (Neap Tide)</td></tr>
<tr><td> 
 
  </td><td>  </td><td>  </td></tr>
<tr><td></td><td>Midstream (Spring Tide)</td><td>Outlet (Spring Tide)</td></tr>
<tr><td></td><td>  </td><td>  </td></tr>
</table>

Waterbodies	Bank Characteristic	Water Flow Conditions	Photos		
			WET TIME		
			Upstream (Freshwater Pond)	Midstream (Spring Tide)	Outlet (Spring Tide)
			 	 	

Table 44: Description of Existing Culverts within the Core Study Area

Culvert No.	Water Flow Conditions	Photos	
		Dry Time	Wet Time
C1	• Baseflow was observed during dry weather • Stormwater flow was observed during wet weather		
C2	• Baseflow was observed during dry weather • Stormwater flow was observed during wet weather		
C3	• Baseflow was observed during dry weather • Stormwater flow was observed during wet weather		
C4	• Baseflow was observed during dry weather • Stormwater flow was observed during wet weather		
C5	• Baseflow was observed flowing into C5 during dry weather		(Not available)

Culvert No.	Water Flow Conditions	Photos	
		Dry Time	Wet Time
C6	• Baseflow towards the west into C6 (covered by the plants) was observed during dry weather		(Not available)
C7	• Swamp area with stagnant water was observed during both dry and wet weather • Swamp area has a higher water level during wet weather	 East side of the visitor walkway	 West side of the visitor walkway
C8	• Low flow was observed during dry weather at the location on the east side of visitor pathway • Stronger flow was observed during wet weather at the same location		
C9	• No water flow was observed during dry weather • Stormwater flow was observed during wet weather		

Culvert No.	Water Flow Conditions	Photos	
		Dry Time	Wet Time
C10	• Baseflow was observed		(Not available)

8.3.2

8.3.3 Water Quality Assessment Results

The results of the *in-situ* and *ex-situ* water quality analysis were assessed based on relevant guideline and criteria as described in the section below.

8.3.3.1 Relevant Guidelines and Criteria for Water Quality

The baseline water quality of the waterbodies located within the core study area was analysed against the Allowable Limits for Trade Effluent Discharge to uncontrolled watercourse regulated by the NEA. The guideline is hereinafter referred as 'NEA Trade Effluent Discharge'. This comparison supports the impact assessment as it allows for the understanding of whether the existing water quality of the identified waterbodies complies with NEA limits or already exceeds these limits. It should also be noted that water quality of the wastewater discharged from construction sites should comply with these limits. Therefore, the stormwater and wastewater generated from the construction site of the future residential developments should comply with NEA Trade Effluent Discharge limits.

The monitored salinity of the water quality along Sungei Cina indicates that it has brackish water characteristics which is closer to that of marine water than freshwater. As the NEA Trade Effluent Discharge criteria is only applicable for freshwater drains or streams (i.e. WQ6), the ASEAN Marine Water Quality Criteria (ASEAN MWQC) is used to assess non-freshwater bodies as it provides guidelines for the protection of aquatic life.

The results of the assessment exercise of the *in-situ* water quality of the waterbodies against the relevant limits and guidelines are summarised in Table 45.

Table 45: Referenced Guidelines and Criteria

Parameter	NEA Trade Effluent Discharge Limits [1]	ASEAN Marine Water Quality Criteria (ASEAN MWQC)
pH	6 -9	-
Salinity (ppt)	-	-
Conductivity (µS/cm)	-	-
Dissolved Oxygen, DO (mg/L)	-	> 4.0
Temperature (°C)	45	≤ 2 °C increase over maximum ambient

Parameter	NEA Trade Effluent Discharge Limits [1]	ASEAN Marine Water Quality Criteria (ASEAN MWQC)
Turbidity (NTU)	-	-
Total Suspended Solids, TSS (mg/L)	50	≤ 10% increase over seasonal average
Total Dissolved Solids, TDS (mg/L)	-	-
Chloride (mg/L)	-	-
Total Nitrogen, TN (mg/L)	-	-
Nitrate, NO_3-N (mg/L)	-	0.06
Nitrite, NO_2-N (mg/L)	-	0.055
Ammonia, NH_4-N (mg/L)	-	0.07
Total Phosphorous, TP (mg/L)	-	-
Phosphate, PO_4 (mg/L)	5	0.015 (coastal) 0.045 (estuarine)
Chemical Oxygen Demand, COD (mg/L)	100	-
Biological Oxygen Demand, BOD_5 [2] (mg/L)	50	-
Enterococcus (cfu/100mL)	-	35 (human health protection)
Chlorophyll-a (mg/m^3)	-	-
Total Oil & Grease (mg/L)	10	0.14
Total Organic Carbon, TOC (mg/L)	-	-
Arsenic, As (µg/L)	100	-
Cadmium, Cd (µg/L)	100	10.0
Chromium, Cr (µg/L)	1000	50
Copper, Cu (µg/L)	100	8.0
Iron, Fe (µg/L)	10000	-
Mercury, Hg (µg/L)	50	0.16
Nickel, Ni (µg/L)	1000	-
Lead, Pb (µg/L)	100	8.5
Zinc, Zn (µg/L)	1000	-

[1] *Limits for discharge into a watercourse other than a controlled watercourse.*
[2] *BOD_5 is the amount of dissolved oxygen needed by aerobic biological organisms to break down organic material per litre of sample during 5 days of incubation at 20 °C.*

Notes:

Where 2 or more of the metals – Cd, Cr, Cu, Pb, Hg, Ni, Zn – are present in the trade effluent, the concentration of the metals shall not be more than 1 mg/L where the trade effluent is discharged into a watercourse other than a controlled watercourse.

The ASEAN MWQC has 16 key physical and chemical parameters adopted for aquatic life protection and 1 human health protection parameter (bacteria).

8.3.3.2 *In-situ* Water Quality Results

The *in-situ* water quality monitoring schedule is provided in Table 46 and the results of the *in-situ* water quality analysis at the different monitoring locations are summarized in Table 47 and Table 48.

Table 46: *In-situ* Water Quality Monitoring Dates

SAMPLING EVENT		DRY WEATHER						WET WEATHER			
DATE / ASSESSMENT LOCATION		26 Apr 2018	30 Apr 2018	9 May 2018	16 May 2018	12 Sep 2018	21 Sep 2018	1 Jun 2018	13 Jun 2018	27 Jun 2018	4 Sep 2018
Sungei Cina	WQ1	√	√	√	-	-	-	√	-	-	-
	WQ2	√	√	√	-	√	-	√	-	-	√
	WQ3	√	√	√	-	√	-	-	-	√	√
	WQ4	√	√	√	-	√	√	-	-	√	-
Outlet	WQ5	-	-	-	√	√	√	-	-	-	-
Stream 1	WQ6-1	-	√	√	-	-	-	-	-	-	√
	WQ6-2	√	-	√	-	-	-	-	-	-	-
	WQ6-3	-	-	√	√	-	-	√	-	-	√
	WQ6-4	-	-	√	√	-	-	√	-	-	-
Stream 2	WQ7	√	√	√	-	√	-	-	√	-	-
Stream 3	WQ8	√	√	√	-	√	-	-	√	-	-
Stream 4	WQ10	-	√	√	√	√	-	-	√	-	-
Drain 5	WQ9	-	√	√	-	√	-	-	√	-	-

Table 47: Summary of *In-situ* Water Monitoring Results

PARAMETERS \ LOCATIONS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-2	WQ6-3	WQ6-4	WQ7	WQ8	WQ9	WQ10	Overall
Density (g/cm^3)		0.994 – 1.014													
Temperature (°C)	Max	29.0	29.8	31.0	32.0	31.6	27.5	28.7	29.3	28.6	30.6	31.4	33.9	31.2	**33.9**
	Min	27.4	27.4	25.5	25.0	31.6	25.6	27.9	25.2	27.5	29.5	27.0	26.9	27.0	**25.0**
	Avg	28.4	28.9	29.5	30.0	31.6	26.7	28.3	26.7	28.0	30.1	29.4	30.8	29.0	**29.0**
pH	Max	8.30	7.90	7.70	7.99	8.03	7.60	6.31	7.50	7.50	7.85	7.20	9.02	7.30	**9.02**
	Min	6.68	6.60	6.87	7.07	7.08	6.63	5.81	6.93	7.32	6.80	6.90	6.90	6.60	**5.81**
	Avg	7.21	7.21	7.22	7.38	7.63	7.04	6.06	7.22	7.41	7.27	7.00	7.68	6.88	**7.17**
Salinity (ppt)	Max	0.33	10.91	19.84	23.6	25.5	0.27	0.26	0.22	0.38	11.6	13.0	0.18	0.39	**25.48**
	Min	0.07	0.06	0.29	0.39	19.5	0.10	0.06	0.17	0.37	0.07	2.27	0.09	0.22	**0.06**
	Avg	0.17	5.78	11.4	15.5	23.1	0.21	0.14	0.20	0.38	2.44	6.74	0.13	0.30	**5.11**
Conductivity (µS/cm)	Max	725	19600	31000	37400	44300	560	538	474	809	21200	21700	790	690	**44300**
	Min	143	136	594	793	31000	207	136	354	806	168	4390	197	383	**136**
	Avg	379	10400	17500	26200	37700	447	308	429	807	4520	12200	369	570	**8600**
Dissolved Oxygen (mg/L)	Max	7.53	7.73	6.91	7.87	2.70	7.29	3.02	4.89	4.98	7.16	2.69	8.37	3.22	**8.37**
	Min	0.21	2.77	1.48	1.24	2.70	4.94	2.77	0.90	2.89	3.03	0.08	4.63	0.42	**0.08**
	Avg	3.54	4.28	3.46	3.99	2.70	5.83	2.90	2.66	3.64	5.66	1.71	6.49	1.74	**3.74**
Turbidity (NTU)[1]		1.23	1.00	2.35	3.40	3.70	0.60	-	0.55	-	2.70	3.10	1.00	16.0	**3.24**

[1] Only one-time sampling event is available

Table 48: Wet & Dry Weather Comparison of *In-situ* Average Results

PARAMETERS \ LOCATIONS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-2	WQ6-3	WQ6-4	WQ7	WQ8	WQ9	WQ10
Temperature (°C)	Wet Avg	27.4	27.4	25.5	25.0	[N/A]	26.0	[N/A]	25.7	27.9	29.5	27.0	28.3	27.0
	Dry Avg	28.7	29.4	30.8	31.5	31.6	27.4	28.3	27.7	28.1	30.3	30.2	33.3	29.7
pH	Wet Avg	8.30	7.75	7.29	7.20	[N/A]	7.23	[N/A]	7.37	7.50	6.80	6.90	7.05	6.60
	Dry Avg	6.84	6.94	7.18	7.41	7.63	6.76	6.06	7.17	7.37	7.39	7.03	8.11	6.94
Salinity (ppt)	Wet Avg	0.07	0.09	1.19	0.38	[N/A]	0.21	0.26	0.19	0.38	0.07	2.27	0.10	0.33
	Dry Avg	0.21	8.62	16.06	18.46	21.91	0.21	0.09	0.21	0.38	3.03	7.86	0.15	0.30
Conductivity (µS/cm)	Wet Avg	143	194	3777	793	[N/A]	442	538	394	806	168	4388	214	690
	Dry Avg	457	15577	27831	31231	37717	455	192	464	808	5608	14150	473	540
Dissolved Oxygen (mg/L)	Wet Avg	7.53	7.73	6.91	7.87	[N/A]	6.58	[N/A]	2.42	4.98	7.16	1.78	6.50	0.76
	Dry Avg	2.22	3.13	2.31	2.69	2.70	5.08	2.90	0.90	3.04	5.16	1.69	6.48	2.07

Note: [N/A] – No available data

With reference to Figure 86, the water from the streams and drains of the core study area was found to be neutral with an average pH of 7.17. The pH of the water within the core study area did not vary significantly with either spatial or temporal variation. However, WQ6-2 has a consistently lower pH compared to the rest of the locations. This is potentially due to the nature of the waterbody at which WQ6-2 is located (i.e. swampy with low-flowing water and decomposing plant parts). The average pH at all monitored locations was within the allowable limits stated in the NEA Trade Effluent Discharge criteria during dry and wet weather conditions. The temperature of along Sungei Cina was also found to be within the discharge limit of 45°C.

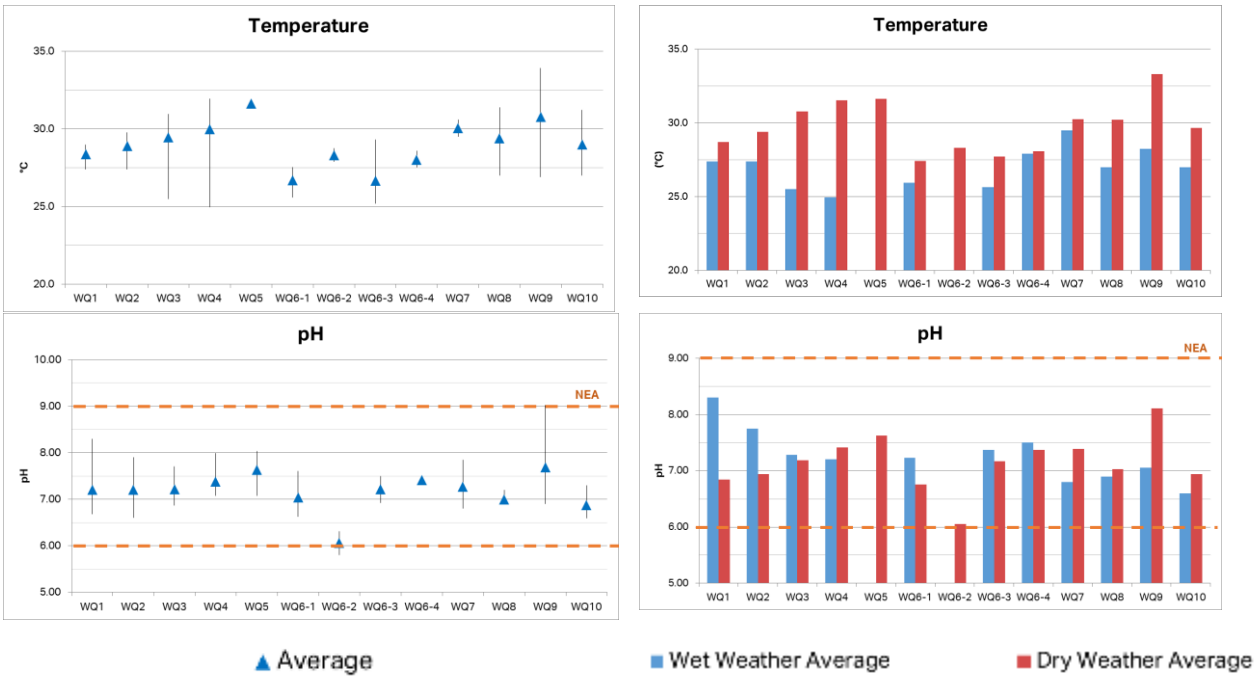


Figure 86: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of T˚C and pH

The water in the core study area had an average dissolved oxygen concentration of 3.74 mg/L, ranging from 0.08 mg/L to 8.37 mg/L (refer to Figure 87). In accordance to the ASEAN MWQC, the average DO concentration required for favourable growth of aquatic life is 4 mg/L. The study results indicate that the average DO concentrations at WQ5, WQ6-2, WQ6-3, WQ8 and WQ10 were considerably low, ranging from 1.71 mg/L to 2.9 mg/L, which was potentially caused by low water flow (i.e. 0.1 m/s) and stagnant water conditions with low aeration rate, the dying off of microorganisms and the decomposition of dead plants. The low flow velocity may be due to the low elevation and gentle slopes of these monitoring locations. These monitoring locations are located at natural waterbodies with earth beds suitable for microorganisms' growth and die-off and deposition of dead plants from the surrounding vegetation. For WQ6-1, WQ7 and WQ9, DO concentrations were found to be higher than 3 mg/L. Higher flow rates at these locations may have flushed off the dead plants deposited from their surroundings to the downstream. In addition, higher flow rate renders mixing of water which allows for the DO to be well-mixed in these water bodies. The DO during wet weather conditions were also found to be generally higher at each location, which might be due to aeration caused by water disturbance during storm events. Overall, DO concentration did not meet the criteria specified in the ASEAN MWQC at most locations, particularly during dry weather conditions.

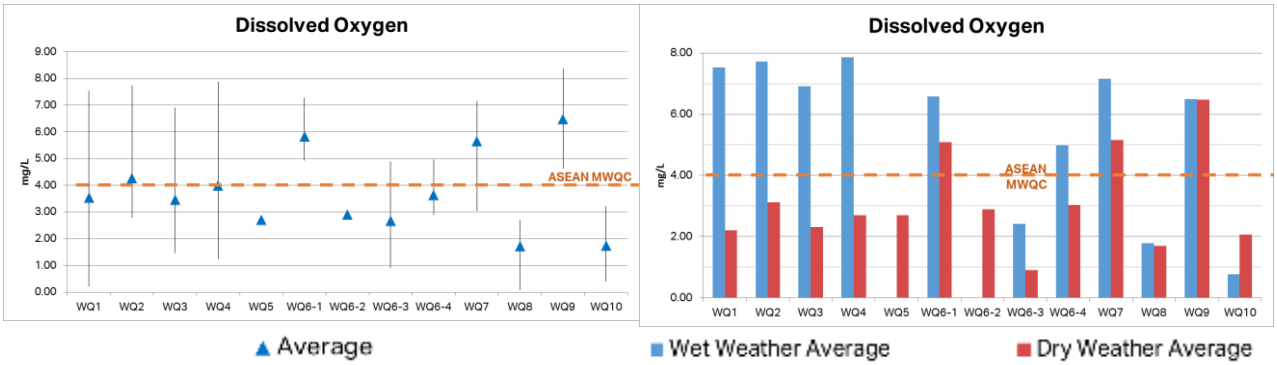


Figure 87: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of Dissolved Oxygen

Salinity measures the amount of salts dissolved in water. This parameter is positively correlated to conductivity, which is a measure of the ion content in the water available to participate in the conduction process.

With reference to Figure 88, the average salinity results ranged from 0.17 PSU to 23.1 PSU, while the conductivity results ranged from 136 µS/cm to 44,300 µS/cm. The wide variation in salinity and conductivity is due to the wide variety of the nature of waterbodies, ranging from freshwater streams to coastal seawater. As expected, the salinity and conductivity increased in the Sungei Cina as it goes towards the coast, increasing from WQ1 to WQ5. At stations WQ7 and WQ8, both parameters were significantly higher than other locations due to saline water intrusion during high tide.

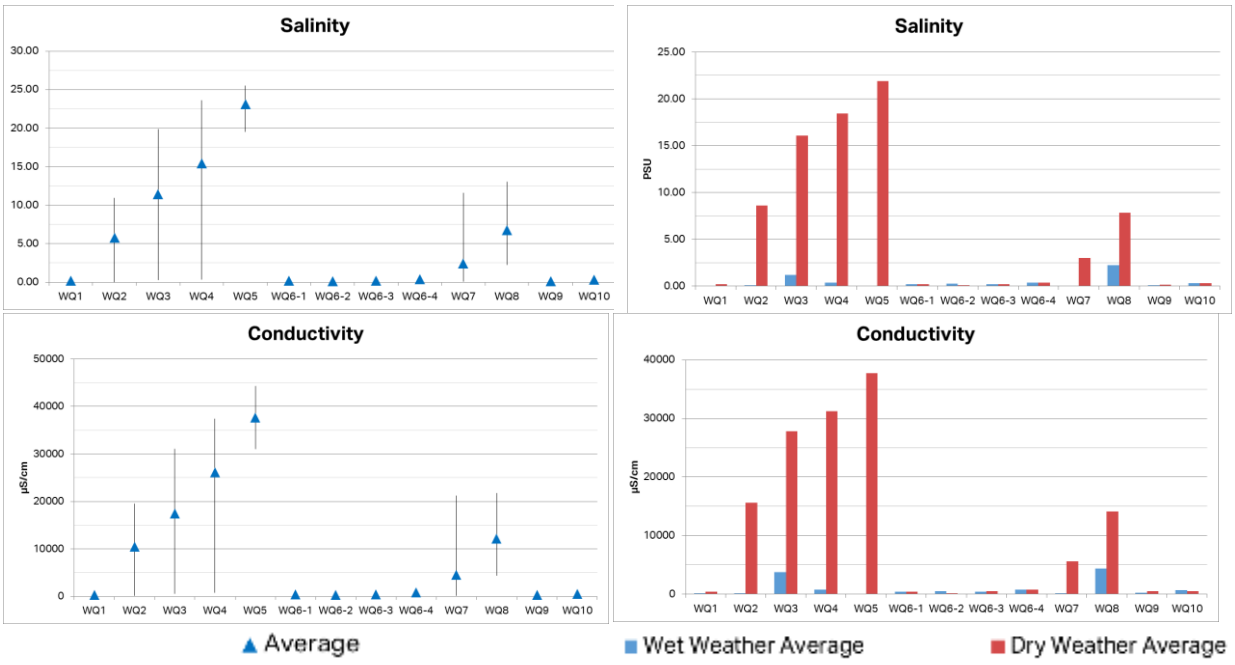


Figure 88: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of Salinity and Conductivity

8.3.3.3 Ex-situ Water Quality Results

The *ex-situ* water quality sampling schedule is provided in Table 49 and the results of the *ex-situ* water quality analysis at the different monitoring locations are summarized in Table 50 and Table 51.

Table 49: *Ex-situ* Water Quality Monitoring Dates

SAMPLING EVENT		DRY WEATHER						WET WEATHER			
DATE / ASSESSMENT LOCATION		26 Apr 2018	30 Apr 2018	16 May 2018	12 Sep 2018	21 Sep 2018	21 Sep 2018	1 Jun 2018	13 Jun 2018	27 Jun 2018	4 Sep 2018
Sungei Cina	WQ1	√	√	-	-	-	-	√	-	-	-
	WQ2	√	√	-	√	-	-	√	-	-	√
	WQ3	√	√	-	√	-	-	-	-	√	√
	WQ4	√	√	-	√	√	-	-	-	√	-
Outlet	WQ5	-	-	√	√	√	√	-	-	-	-
Stream 1	WQ6-1	-	√	-	-	-	-	√	-	-	√
	WQ6-2	-	-	-	-	-	-	-	-	-	-
	WQ6-3	√	-	-		-	-	-	-	-	√
	WQ6-4	-	-	-		-	-	-	-	-	-
Stream 2	WQ7	√	-	-	√	-	-	-	√	-	-
Stream 3	WQ8	√	-	-	√	-	-	-	√	-	-
Stream 4	WQ10	-	-	√	√	-	-	-	√	-	-
Drain 5	WQ9	-	√	-	√		-	-	√	-	-

Table 50: Summary of *Ex-situ* Water Monitoring Results

LOCATIONS / PARAMETERS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-3	WQ7	WQ8	WQ9	WQ10	Overall
Turbidity (NTU)	Max	1.90	150	167	34.0	15.7	97.0	42.0	32.9	35.2	1.90	16.0	**167**
	Min	0.55	0.20	1.80	2.20	3.61	0.60	0.55	1.60	3.10	1.00	3.00	**0.20**
	Avg	1.35	33.0	40.8	14.1	7.50	33.5	21.3	12.4	15.8	1.45	10.5	**17.4**
Total Suspended Solids, TSS (mg/L)	Max	14.3	37.7	55.3	49.0	61.3	13.0	88.0	28.3	37.0	53.3	53.0	**88.0**
	Min	10.7	<10	11.3	25.7	42.7	<10	<10	<10	10.3	<10	10.0	**<10**
	Avg	12.2	-	31.6	37.9	51.9	-	-	-	24.2	-	31	**-**
Total Dissolved Solids, TDS (mg/L)	Max	467	20000	21100	25800	25900	364	323	308	13700	177	374	**25900**
	Min	88.0	85	374	473	21700	306	100	101	1111	122	171	**85.0**
	Avg	256	6970	11200	17500	23800	336	211	234	5940	157	297	**6085**
Chloride (mg/L)	Max	128	10400	12050	14400	13800	51.6	63.7	76.3	7080	153	118	**14400**
	Min	4.07	15.7	145	178	10892	16.8	3.03	6.06	121	11.6	19.5	**3.03**
	Avg	47.3	3520	6050	9220	12200	34.2	33.4	52.7	2540	59.4	78.3	**3080**
Total Nitrogen, TN (mg/L)	Max	2.32	1.70	1.78	1.98	1.87	1.40	1.60	2.11	1.90	3.93	3.4	**3.93**
	Min	1.01	0.85	0.71	0.76	1.27	0.37	0.70	1.76	1.30	0.63	1.27	**0.37**
	Avg	1.77	1.31	1.37	1.33	1.65	0.76	1.15	1.94	1.65	2.65	2.60	**1.65**
Nitrate, NO_3-N (mg/L)	Max	4.43	1.77	2.05	1.44	1.35	0.93	0.60	4.54	0.1	1.61	2.92	**4.54**
	Min	0.73	0.079	0.10	0.10	0.15	0.06	0.18	1.09	<0.015	0.045	<0.015	**<0.015**
	Avg	1.99	1.01	0.94	0.60	0.80	0.37	0.39	2.26	-	0.985	-	**-**
Nitrite, NO_2-N (mg/L)	Max	0.45	0.61	0.34	0.44	0.46	0.06	0.03	0.04	0.09	0.27	0.17	**0.61**
	Min	<0.02	0.06	<0.02	<0.02	0.14	0.03	0.01	<0.02	<0.02	<0.02	<0.02	**<0.02**

LOCATIONS / PARAMETERS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-3	WQ7	WQ8	WQ9	WQ10	Overall
	Avg	-	0.25	-	-	0.37	0.04	-	-	-	-	-	-
Ammonia, NH_4-N (mg/L)	Max	0.54	0.63	0.83	1.2	1.09	1.31	0.031	0.84	1.43	3.65	3.01	**3.65**
	Min	0.01	0.012	0.055	0.078	0.23	<0.01	0.018	0.52	0.79	0.16	0.087	**<0.01**
	Avg	0.36	0.37	0.43	0.62	0.64	-	0.02	0.66	1.08	1.52	1.95	-
Total Phosphorous, TP (mg/L)	Max	0.13	0.51	0.11	0.21	0.19	0.18	0.14	0.11	0.25	0.15	0.085	**0.51**
	Min	0.09	0.04	<0.025	<0.025	0.06	0.07	0.10	0.04	0.06	<0.025	<0.025	**<0.025**
	Avg	0.11	0.18	-	-	0.13	0.11	0.12	0.08	0.14	-	-	-
Phosphate, PO_4 (mg/L)	Max	0.060	0.085	0.086	0.150	0.140	0.100	0.048	0.034	0.130	0.031	0.022	**0.150**
	Min	0.041	0.017	<0.01	<0.01	0.041	0.030	0.011	0.012	0.016	<0.01	0.013	**<0.01**
	Avg	0.049	0.043	-	-	0.086	0.054	0.030	0.023	0.056	-	0.018	-
Chemical Oxygen Demand, COD (mg/L)	Max	27.0	22.0	38.0	40.0	<20	<20	53.0	21.0	50.0	46.0	<20	**53.0**
	Min	<20	<20	<20	<20	<20	<20	36.0	<20	<20	<20	<20	**<20**
	Avg		-	-	-	-	-	44.5	-	-	-	-	-
Biological Oxygen Demand, BOD_5 (mg/L)	Max	<2	2.39	3.11	3.91	6.36	<2	<2	<2	<2	4.89	2.71	**6.36**
	Min	<2	<2	<2	<2	2.31	<2	<2	<2	<2	<2	<2	<2
	Avg	-	-	-	-	3.78	-	-	-	-	-	-	-
Enterococcus (cfu/100mL)	Max	2700	6500	18000	26000	240	510	34000	200	7300	2500	21000	**34000**
	Min	1000	310	82	80	6	150	200	110	300	500	800	**6**
	Avg	1670	1920	5160	5370	80	287	17100	170	3060	1730	7930	**4040**
Chlorophyll-a (mg/m^3)	Max	<5	22.0	50.5	88.6	90.6	<5	5.39	<5	9.64	6.49	8.86	**90.6**
	Min	<5	<5	<5	<5	23.2	<5	<5	<5	<5	<5	<5	**<5**

LOCATIONS / PARAMETERS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-3	WQ7	WQ8	WQ9	WQ10	Overall
	Avg	-	-	-	-	51.33	-	-	-	-	-	-	-
Total Oil & Grease (mg/L)	Max	0.54	0.36	0.32	0.26	0.32	<0.1	0.28	0.24	<0.1	<0.1	<0.1	**0.54**
	Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**<0.1**
	Avg	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon, TOC (mg/L)	Max	4.68	4.82	4.15	6.68	3.52	4.51	7.37	6.31	9.24	10.3	2.85	**10.3**
	Min	2.49	3.36	3.03	2.45	2.91	1.81	5.24	1.31	4.48	1.94	1.91	**1.31**
	Avg	3.81	3.94	3.65	3.68	3.08	3	6.31	3.83	6.65	5.12	2.32	**4.13**
Arsenic, As (µg/L)	Max	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Min	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Avg	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium, Cd (µg/L)	Max	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Min	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Avg	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, Cr (µg/L)	Max	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Min	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Avg	-	-	-	-	-	-	-	-	-	-	-	-
Copper, Cu (µg/L)	Max	<5	7.94	6.61	10.8	<5	7.13	<5	17.8	<5	7.05	<5	**17.8**
	Min	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Avg	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Fe (µg/L)	Max	1473	668	901	1592	204	1217	464	1030	258	123	1647	**1647**
	Min	<5	<5	7.74	<5	9.22	<5	23.1	<5	25.1	17.2	28.3	**<5**

LOCATIONS / PARAMETERS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-3	WQ7	WQ8	WQ9	WQ10	Overall
	Avg	-	-	196	-	59.9	-	244	-	167	57.1	588	**-**
Mercury, Hg (µg/L)	Max	<0.1	<0.1	0.25	0.33	0.46	<0.1	<0.1	0.11	0.13	<0.1	0.32	**0.46**
	Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**<0.1**
	Avg	-	-	-	-	-	-	-	-	-	-	-	-
Nickel, Ni (µg/L)	Max	13.1	7.26	9.96	9.05	6.61	<5	<5	<5	<5	<5	11.8	**13.1**
	Min	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Avg	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Pb (µg/L)	Max	<5	<5	5.76	10.8	<5	<5	<5	<5	<5	<5	<5	**10.8**
	Min	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**
	Avg	-	-	-	-	-	-	-	-	-	-	-	-
Zinc, Zn (µg/L)	Max	55.9	40.3	41.5	78.2	9.53	10.3	9.61	41.2	7.21	53.7	17.9	**78.2**
	Min	<5	7.28	8.44	5.33	5.33	<5	9.44	<5	5.11	<5	<5	**<5**
	Avg	-	22.8	23.7	24.0	7.3	-	9.53	-	5.86	-	-	

Table 51: Wet & Dry Weather Comparison of *Ex-situ* Average Results

LOCATIONS / PARAMETERS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-3	WQ7	WQ8	WQ9	WQ10
Turbidity (NTU)	Wet Avg	1.6	75.7	96.5	34.0	[N/A]	50.0	42.0	1.6	9.2	1.9	3.0
	Dry Avg	1.23	4.58	3.70	9.10	7.50	0.60	0.55	17.80	19.17	1.00	14.28
Total Suspended Solids, TSS (mg/L)	Wet Avg	14.3	15.3	22	44.7	[N/A]	13	4.7	BDL	25.3	BDL	30
	Dry Avg	11.2	29.23	38.00	36.25	51.85	BDL	88	15.82	23.65	53.30	31.5
Total Dissolved Solids, TDS (mg/L)	Wet Avg	88	112	490	473	[N/A]	351.5	323	101	1111	122	374
	Dry Avg	340.5	11544	18367	21797	23768.5	306	100	301	8351	174	283.5
Chloride (mg/L)	Wet Avg	4.07	19.5	189	178	[N/A]	42.9	63.7	6.06	412	13.5	118
	Dry Avg	68.85	5850	9957	11481	12221	16.8	3.03	76.05	3599	82.3	58.45
Total Nitrogen, TN (mg/L)	Wet Avg	1.01	0.98	0.98	0.76	[N/A]	0.89	0.7	1.76	1.3	3.39	3.4
	Dry Avg	2.15	1.533	1.64	1.47	1.65	0.5	1.6	2.03	1.83	2.28	2.21
Nitrate, NO_3-N (mg/L)	Wet Avg	0.8	1.11	1.14	0.23	[N/A]	0.09	0.18	1.09	0.07	1.3	BDL
	Dry Avg	2.58	0.95	0.80	0.69	0.80	0.93	0.6	2.84	0.1	0.83	1.47
Nitrite, NO_2-N (mg/L)	Wet Avg	BDL	0.14	0.13	BDL	[N/A]	0.04	0.03	BDL	0.09	0.27	BDL

LOCATIONS / PARAMETERS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-3	WQ7	WQ8	WQ9	WQ10
	Dry Avg	0.39	0.33	0.21	0.31	0.37	0.04	BDL	0.03	0.04	0.08	0.17
Ammonia, NH_4-N (mg/L)	Wet Avg	0.01	0.07	0.13	0.08	[N/A]	1.31	0.03	0.52	0.79	0.74	3.01
	Dry Avg	0.54	0.58	0.63	0.75	0.64	0.22	0.018	0.73	1.22	1.91	1.41
Total Phosphorous, TP (mg/L)	Wet Avg	0.11	0.08	0.05	0.05	[N/A]	0.13	0.10	0.11	0.12	0.15	0.09
	Dry Avg	0.11	0.25	0.11	0.14	0.13	0.08	0.14	0.06	0.15	0.07	0.04
Phosphate, PO_4 (mg/L)	Wet Avg	0.05	0.03	0.02	0.02	[N/A]	0.07	0.05	0.02	0.02	0.031	0.022
	Dry Avg	0.05	0.05	0.08	0.10	0.09	0.03	0.01	0.02	0.07	0.02	0.02
Chemical Oxygen Demand, COD (mg/L)	Wet Avg	BDL	22.0	32.5	40.0	[N/A]	BDL	36.0	BDL	39.0	46.0	BDL
	Dry Avg	27.0	BDL	BDL	BDL	BDL	BDL	53.0	21.0	50.0	BDL	BDL
Biological Oxygen Demand, BOD_5 (mg/L)	Wet Avg	BDL	BDL	BDL	BDL	[N/A]	BDL	BDL	BDL	BDL	4.89	BDL
	Dry Avg	BDL	2.39	2.75	3.84	3.78	BDL	BDL	BDL	BDL	2.79	2.71
Enterococcus (cfu/100mL)	Wet Avg	1300	4100	12550	26000	[N/A]	330	34000	200	1600	2200	800
	Dry Avg	1850	470	227	212.5	80	200	200	155	3800	1500	11500
Chlorophyll-a (mg/m^3)	Wet Avg	BDL	BDL	6.37	BDL	[N/A]	BDL	BDL	BDL	9.64	BDL	8.86

LOCATIONS / PARAMETERS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-3	WQ7	WQ8	WQ9	WQ10
	Dry Avg	BDL	18.1	33.1	35.88	51.33	BDL	5.39	BDL	BDL	6.49	6.7
Total Oil & Grease (mg/L)	Wet Avg	BDL	BDL	BDL	BDL	[N/A]	BDL	BDL	BDL	BDL	BDL	BDL
	Dry Avg	0.54	0.36	0.32	0.26	0.32	BDL	0.28	0.24	BDL	BDL	BDL
Total Organic Carbon, TOC (mg/L)	Wet Avg	4.07	19.5	189	178	[N/A]	42.9	63.7	6.06	412	13.5	118
	Dry Avg	3.38	3.79	3.55	3.695	3.08	1.81	5.24	3.81	7.73	2.54	2.05
Arsenic, As (µg/L)	Wet Avg	BDL	BDL	BDL	BDL	[N/A]	BDL	BDL	BDL	BDL	BDL	BDL
	Dry Avg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Cadmium, Cd (µg/L)	Wet Avg	BDL	BDL	BDL	BDL	[N/A]	BDL	BDL	BDL	BDL	BDL	BDL
	Dry Avg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium, Cr (µg/L)	Wet Avg	BDL	BDL	BDL	BDL	[N/A]	BDL	BDL	BDL	BDL	BDL	BDL
	Dry Avg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Copper, Cu (µg/L)	Wet Avg	BDL	5.13	5.76	10.8	[N/A]	7.13	BDL	17.8	BDL	7.05	BDL
	Dry Avg	BDL	7.94	6.61	7.88	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Iron, Fe	Wet Avg	1473	357.4	475.25	1592	[N/A]	1217	464	1030	217	123	28.3

LOCATIONS / PARAMETERS		WQ1	WQ2	WQ3	WQ4	WQ5	WQ6-1	WQ6-3	WQ7	WQ8	WQ9	WQ10
(µg/L)	Dry Avg	10.9	15.345	10.15	19.49	59.93	5.94	23.1	29.4	141.55	24.15	868.3
Mercury, Hg (µg/L)	Wet Avg	BDL	BDL	0.25	0.33	[N/A]	BDL	BDL	0.11	0.13	BDL	0.12
	Dry Avg	BDL	BDL	BDL	BDL	0.46	BDL	BDL	BDL	BDL	BDL	0.32
Nickel, Ni (µg/L)	Wet Avg	BDL	BDL	BDL	BDL	[N/A]	BDL	BDL	BDL	BDL	BDL	11.8
	Dry Avg	13.1	7.73	8.25	7.86	6.04	BDL	BDL	BDL	BDL	BDL	BDL
Lead, Pb (µg/L)	Wet Avg	BDL	BDL	5.76	10.8	[N/A]	BDL	BDL	BDL	BDL	BDL	BDL
	Dry Avg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc, Zn (µg/L)	Wet Avg	55.9	37.35	36.3	78.2	[N/A]	8.375	9.44	41.2	5.25	53.7	BDL
	Dry Avg	6.93	13.17	11.07	10.43	7.2775	BDL	9.61	BDL	6.16	BDL	17.7

Notes:
BDL – All monitored results are below detection limits
[N/A] – No available data

The clarity of waterbodies was measured by the turbidity and total suspended solids (TSS) concentration in water with the former measuring the cloudiness of water and the latter measuring the number of particulates causing the murkiness. With reference to Figure 89, the recorded turbidity of water in the core study area ranged from 0.20 NTU to 167 NTU, averaging at 17.4 NTU. The recordings were especially high at WQ2, WQ3, WQ6-1 and WQ6-3, where the maximum recorded turbidity was above 40 NTU and occurred on the same day of 4th September 2018 (during wet weather conditions). The turbidity values were within expectations, probably due to the suspension of channel bed sediments generated during the storm event that happened just before sample collection. Overall, the turbidity recorded during wet weather conditions was generally higher compared to the one recorded during dry weather conditions.

The average TSS concentration generally increased in the downstream direction of Sungei Cina (from WQ1 to WQ5), which may be due to the accumulation of sediments from catchment surface run-off contributions. The average TSS concentration at all locations (except WQ5) was marginally within the NEA Trade Effluent Discharge limit of 50 mg/L. Most of the maximum TSS concentrations were obtained during dry sampling events. During dry periods, it was noted that there was lower flow in the river. The stagnant conditions and shallow water might have affected the settling of solids in the river and the interaction with backflow from tidal would have resulted in higher TSS during dry weather conditions. During wet weather conditions, the run-off contributions from the adjacent sub-catchments may have diluted the river water, resulting in lower TSS concentrations during those periods.

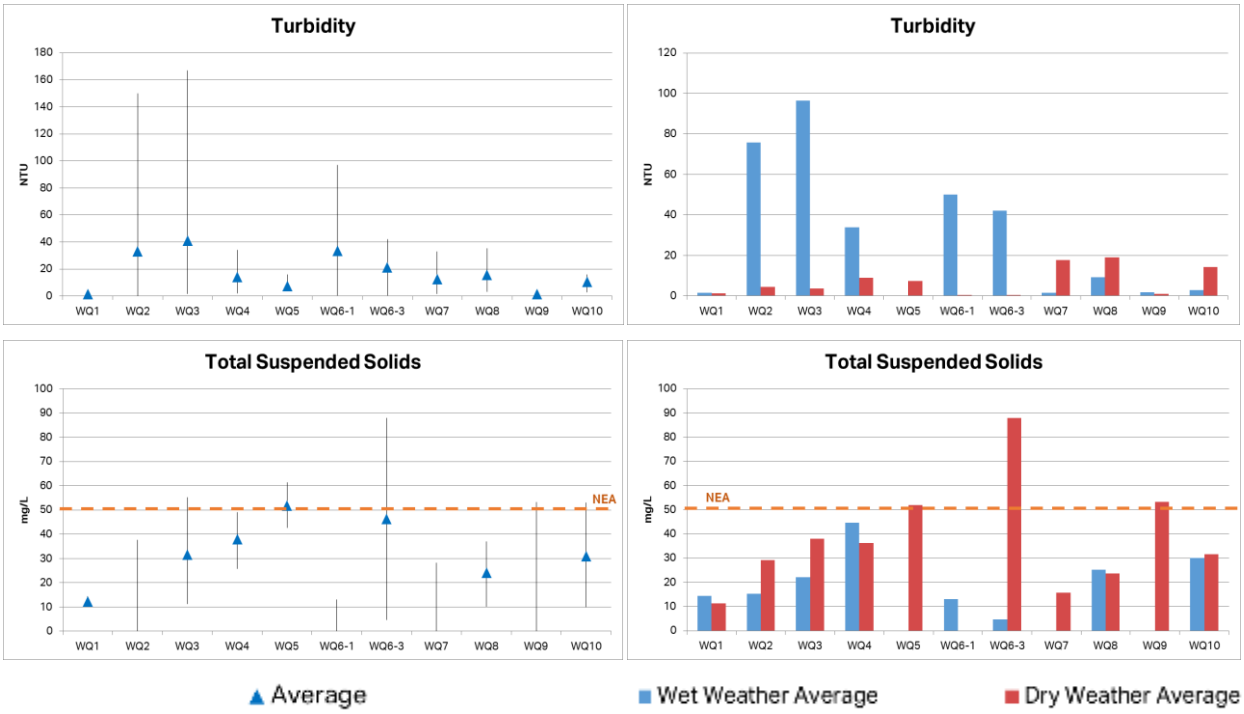


Figure 89: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of Turbidity and TSS

The total dissolved solids (TDS) and chloride concentration recordings followed a similar trend to salinity and conductivity recordings as the four parameters are positively correlated to each other. The total dissolved solids measure the quantity of dissolved solids (including those contributing to the salinity and conductivity of water), and chloride concentration measures the amount of chloride ions which makes up half of the salt in seawater (sodium chloride). The TDS and chloride concentrations increased in the

downstream direction along the main river of Sungei Cina, while WQ8 displayed a higher TDS and chloride concentration due to saline intrusion into the stream (refer to Figure 90).

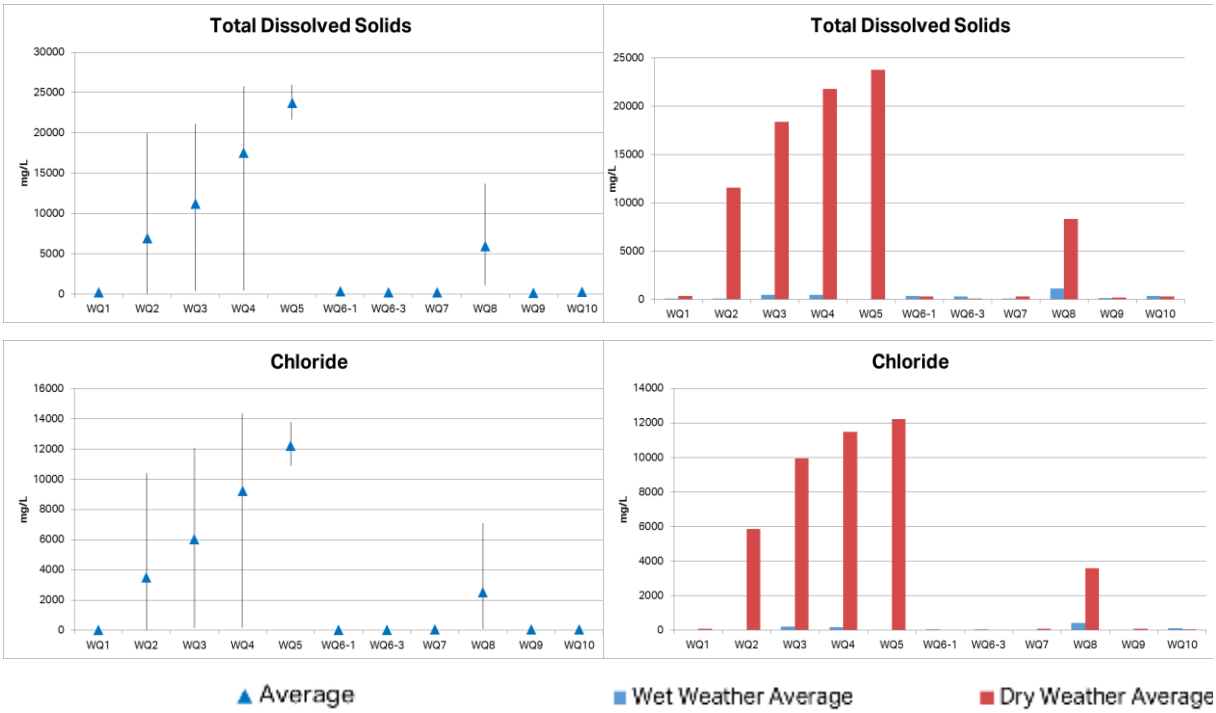
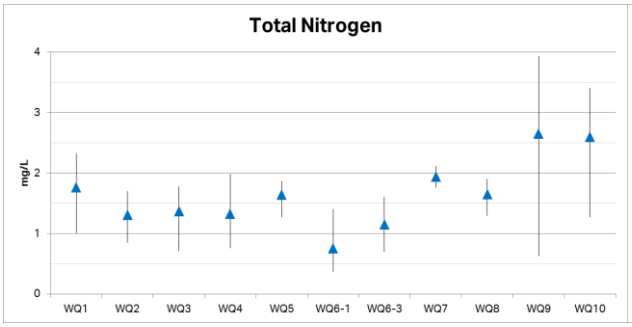


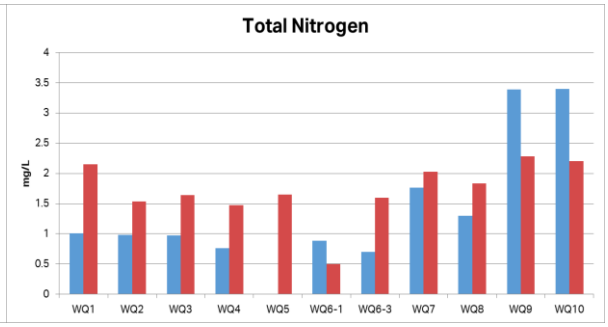
Figure 90: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of TDS and Chloride

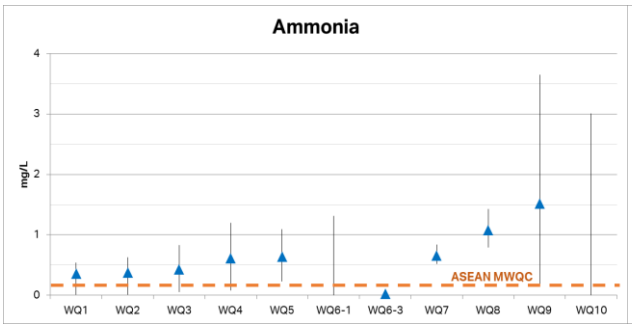
The total nitrogen concentration ranged from 0.37 to 3.93 mg/L, while ammonia ranged from below the detection limit of 0.01 mg/L to 3.65 mg/L (refer to Figure 91). Average NH_4-N concentrations within Sungei Cina exceeded the ASEAN MWQC. For both parameters, WQ10 and WQ9 showed the highest average TN and NH_4-N concentration. This may be due to Stream 4 and Drain 5, where WQ10 and WQ9 are located respectively, receiving discharges from stormwater run-off and municipal effluents. The decay of vegetation might also have contributed to the higher ammonia concentration and the near-stagnant water flow might have been insufficient to flush the ammonia out of the stream.

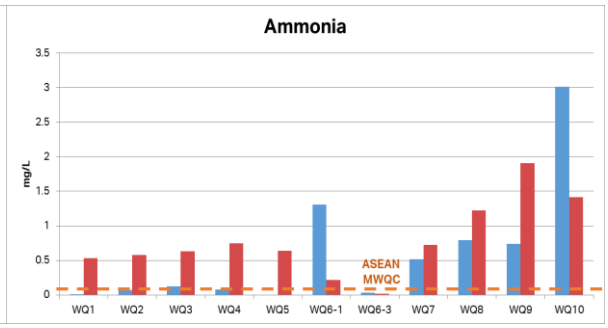
The nitrate concentration ranged from below the detection limit of 0.015mg/L to 4.54mg/L (refer to Figure 91). Along the main canal of Sungei Cina, it can be observed that the nitrate concentration was the highest at WQ1 and generally decreased in the downstream direction. This may be due to stormwater run-off from the surrounding urban areas being discharged at C2 and C3 near WQ1, and subsequent dilution of the nitrate concentration as it travels downstream.

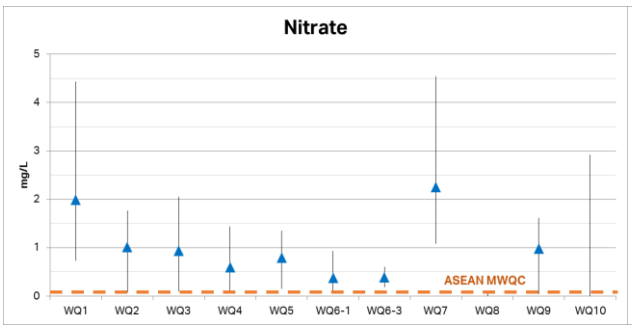
The average total phosphorous concentration did not vary significantly; ranging from below detection limit of 0.025mg/L to 0.51mg/L throughout the sampling locations (refer to Figure 91). Even though WQ2 readings averaged at 0.181mg/L, the highest reading was 0.510mg/L, which may be due to a point discharge at the vicinity. Phosphate concentrations monitored at all locations were shown to be compliant with NEA Trade Effluent Discharge limits. The nutrient concentrations monitored along Sungei Cina indicated that the water has relatively high nutrient content which could affect aquatic life growth according to the guidelines as set by ASEAN MWQC.

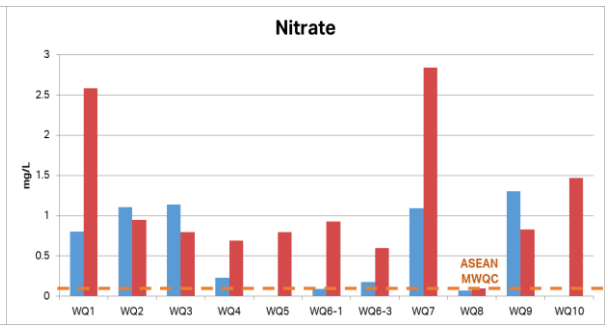

Total Nitrogen
mg/L
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10

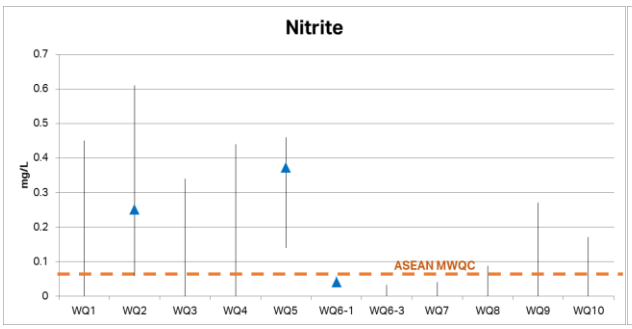

Total Nitrogen
mg/L
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10

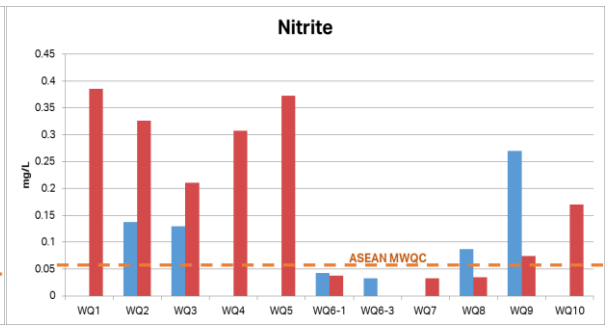

Ammonia
mg/L
ASEAN MWQC
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10

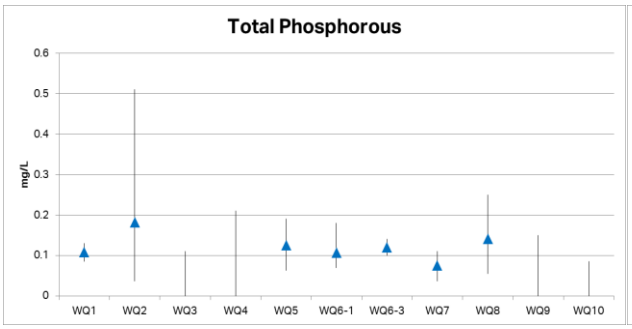

Ammonia
mg/L
ASEAN MWQC
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10

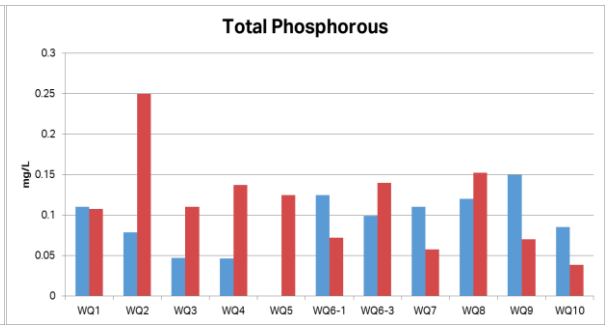

Nitrate
mg/L
ASEAN MWQC
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10


Nitrate
mg/L
ASEAN MWQC
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10


Nitrite
mg/L
ASEAN MWQC
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10


Nitrite
mg/L
ASEAN MWQC
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10


Total Phosphorous
mg/L
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10


Total Phosphorous
mg/L
WQ1
WQ2
WQ3
WQ4
WQ5
WQ6-1
WQ6-3
WQ7
WQ8
WQ9
WQ10

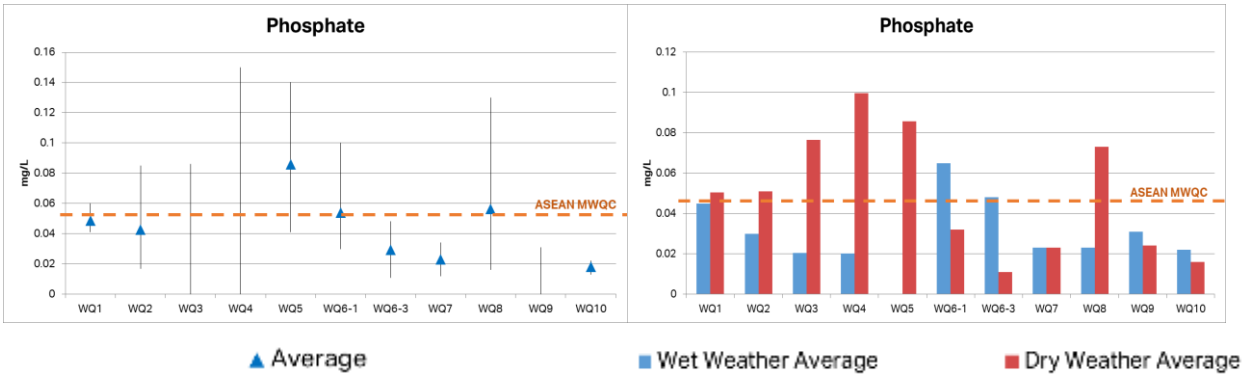


Figure 91: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of Various Nutrients

Many recordings of chlorophyll-a concentrations were below the detection limit of 5µg/L (refer to Figure 92). However, it can be observed that in the main channel, the concentration increased as it goes in the downstream direction from WQ1 to WQ5. The chlorophyll-a concentrations at the various smaller streams (WQ6-10) were consistently always lower than 10µg/L.

Enterococcus counts were also generally very high along Sungei Cina and increased from WQ1 to WQ5 (refer to Figure 92). The presence of rubbish observed during the site visit could have contributed to the enterococcus counts. None of the average enterococcus concentration at all locations met the ASEAN MWQC guideline of 35 cfu/100ml used for comparison to assess human health protection. Nonetheless, the main channel of Sungei Cina is not expected to hold recreational activities that involve direct human contact.

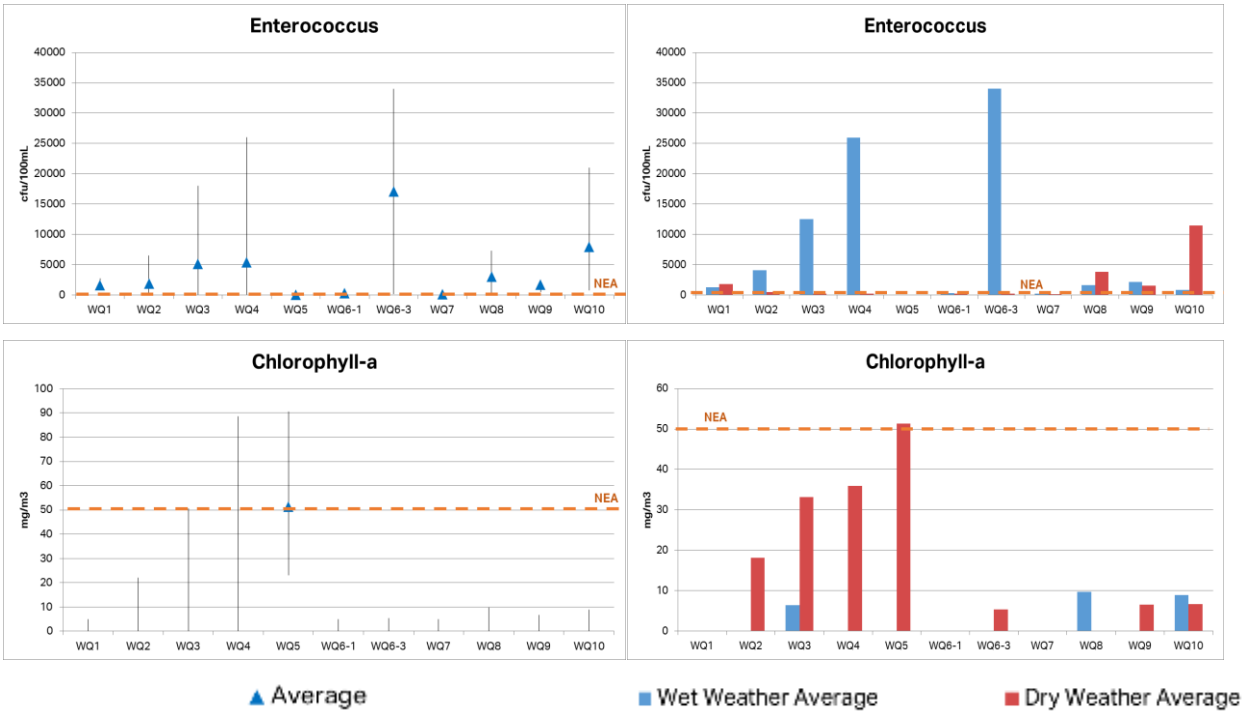


Figure 92: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of Chlorophyll-a and Enterococcus

For the chemical and biological oxygen demand, as well as total oil and grease, a majority of the results were below the detection limit of 20 mg/L, 2 mg/L, and 0.1 mg/L respectively (refer to Figure 93). While COD and oil and grease did not show any significant patterns, the BOD_5 showed a slightly increasing trend towards the downstream direction in the main canal of Sungei Cina which could be due to the accumulation of decaying vegetation. Overall, these three parameters complied with the NEA Trade Effluent Discharge limits. The oil and grease concentrations were found to exceed the limit stated in the ASEAN MWQC at most locations.

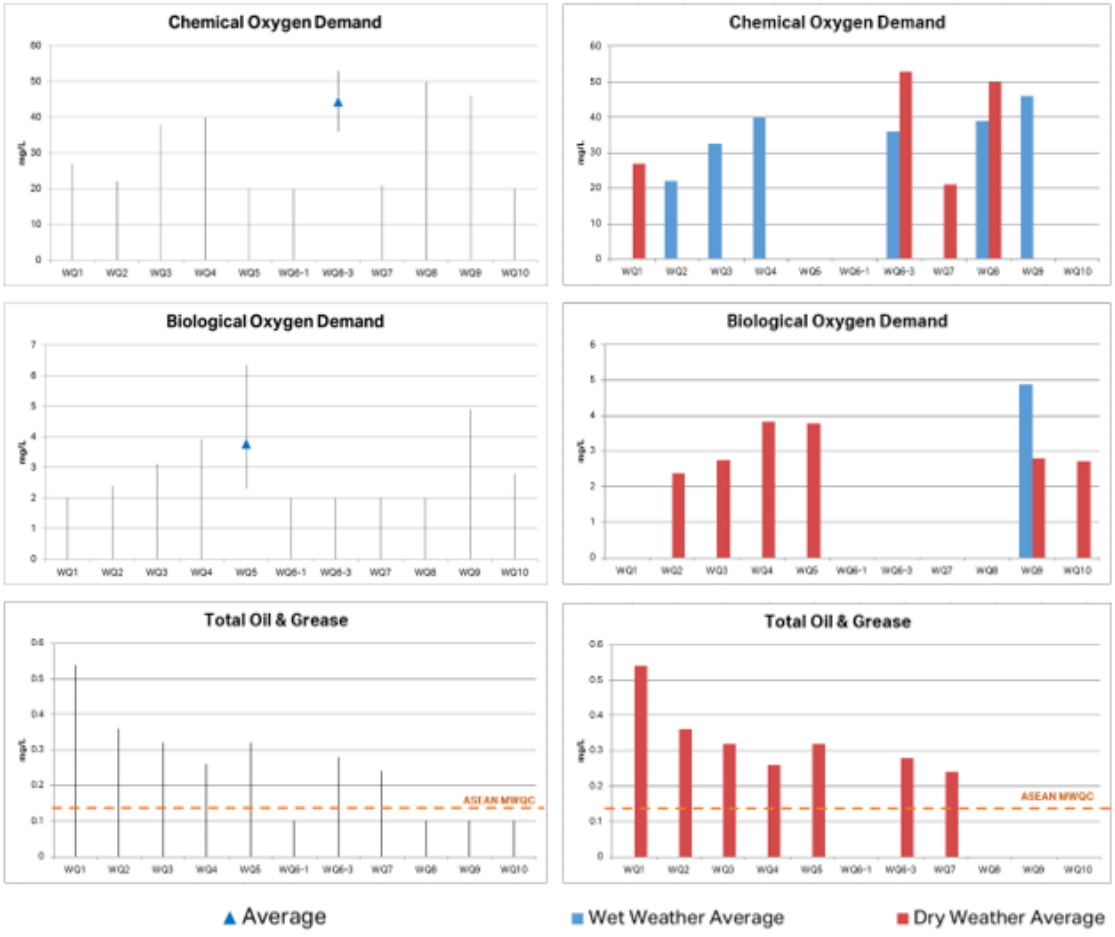


Figure 93: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of COD, BOD and Oil & Grease

The recorded concentrations of most of the heavy metals detected were found to be below the detection limit (refer to Figure 94) stated in the NEA Trade Effluent Discharge regulations. With reference to the ASEAN MWQC guidelines, copper, mercury and lead concentrations exceeded the limits in some locations.

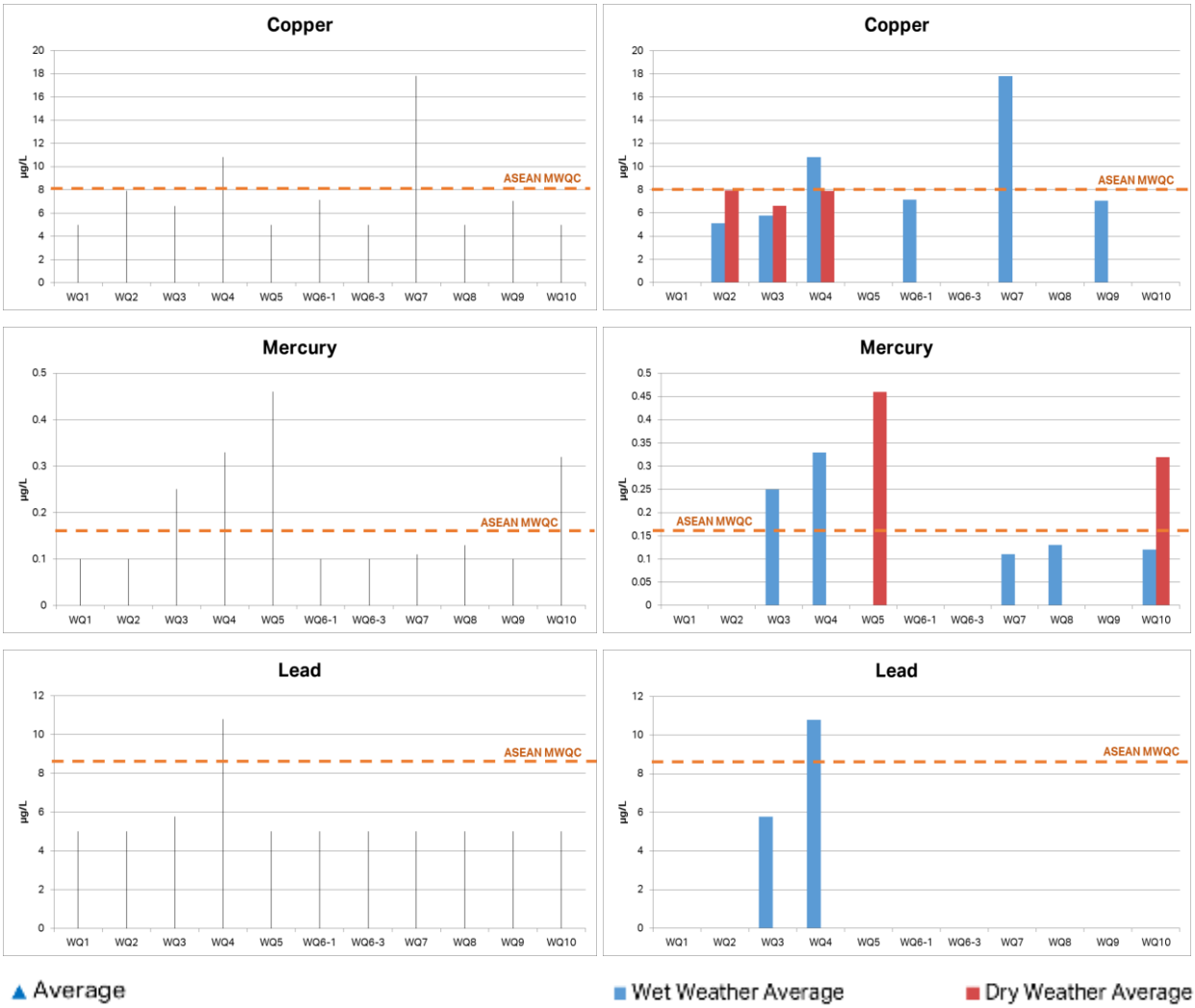


Figure 94: Average Monitored Results (left) and Wet and Dry Weather Comparison (right) of Copper, Mercury and Lead

8.3.3.4 Summary of Key Findings

According to the *in-situ* results, water density was relatively stable among the different sampling locations. The pH and temperature of water did not have obvious fluctuations among all the locations and were within the allowable NEA Trade Effluent Discharge limits. The salinity and conductivity of water increased in the downstream direction of Sungei Cina due to seawater intrusion from the Strait of Johor. Analysis also showed that storm events can affect the temperature, salinity, conductivity and the dissolved oxygen content of water due to the cooling, dilution and aeration effects that storms bring. When compared to ASEAN MWQC guidelines for aquatic protection, the DO concentrations at most of the monitoring locations did not meet the requirement (> 4 mg/L), implying unfavourable conditions for aquatic lives to thrive.

The *ex-situ* parameters displayed various trends over the different locations. The TSS, TDS, Chloride, BOD_5, and Chlorophyll-a generally increased along the main channel of Sungei Cina, which may be caused by saline intrusion from the sea during flood tide. In general, the concentrations of *ex-situ* parameters did not vary significantly among the assessed stations. Most water quality parameters along Sungei Cina were found to meet the NEA Trade Effluent Discharge limits. Most TSS concentrations along the main channel were close to the 50 mg/L limit. On the other hand, comparison against ASEAN

MWQC indicated that the water quality had a relatively high nutrient content in Sungei Cina. Certain heavy metals (Cu, Pb and Hg) and oil and grease concentration were found to exceed the limits stated in the ASEAN MWQC, thus water quality in Sungei Cina might not be favourable for aquatic live to thrive, which is in line with DO level findings from the *in-situ* results.

8.4 Hydrology and Water Quality Impact Assessment

8.4.1 Approach

Catchment analysis was conducted based on the baseline survey, GIS analysis of the topological survey data and the existing catchment map provided by HDB. The hydrological Stormwater Management Model (SWMM) and the hydrodynamic Delft3D model were applied to quantify the catchment flow drained to Sungei Cina. Delft3D model was also used to simulate the hydrodynamic regime and water quality process in Sungei Cina with consideration of the interaction between catchment water and tidal water.

8.4.1.1 SWMM Model

The SWMM developed by the US Environmental Protection Agency is a dynamic rainfall run-off simulation model that can be used for a single event or long-term continuous simulation of stormwater run-off quantity and quality from urban areas (refer to Figure 95). It accounts for various hydrological processes that produce run-off from urban areas such as time-varying rainfall and run-off reduction via green infrastructure practices (e.g. bioswales and green roofs). SWMM can track the quantity and quality of run-off generated from each of the sub-catchments, as well as the water depth and flow in the channels within the catchment during the simulation period. The time scales in SWMM are on the order of a minute or less, which allows for the temporal rainfall variations when user-defined time series are inputted as precipitation data.

SWMM was used to simulate the hydrological conditions of the sub-catchments surrounding the overall study area. The simulation ran with a 3-hour design rainfall of 25-year return period. An Intensity-Duration-Frequency (IDF) curve obtained from PUB was used to derive the design rainfall. Two models were set-up for existing catchment and proposed catchment. The proposed catchment scenario included the diversion of additional run-off from adjacent sub-catchments into Sungei Cina. Discharge results produced from the two models were used as inputs in the Delft3D model.

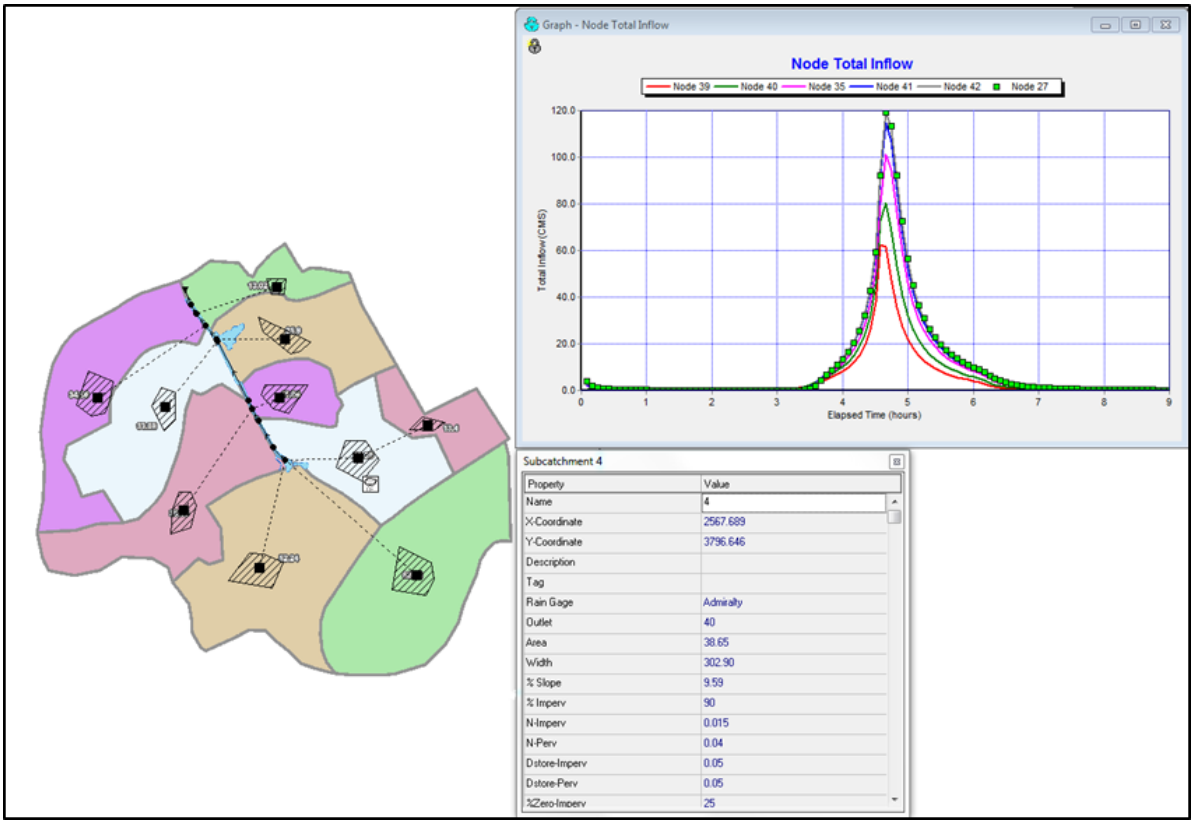


Figure 95: SWMM Model Set-up for Existing Catchment

8.4.1.2 Delft3D Model

Delft3D is a numerical software developed by Deltares. It comprises of few well-tested and validated modules, which are linked to and integrated with one another. These modules are Delft3D-Flow, Delft3D-Morphology, Delft3D-Water Quality, Delft3D-Waves, Delft3D-Sediment Transport, Delft3D-Ecology, Delft3D-Particle Tracking and Graphical User Interface. Delft3D-Flow is a multi-dimensional (2D or 3D) hydrodynamic (and transport) simulation program which calculates non-steady flow and transport phenomena that result from tidal and meteorological forcing on a rectilinear or a curvilinear, boundary fitted grid. It was applied for flow capacity assessment of Sungei Cina, Woodlands, Singapore.

Delft3D was applied to simulate the hydrodynamic conditions in Sungei Cina using flow inputs simulated by SWMM Model. In the model setup, curvilinear grid with dimension of 2760 m x 2040 m was generated as it was appropriate for curvilinear sections of Sungei Cina with its core study area. The grid resolution ranged from 2 to 30m (refer to Figure 96). The seabed bathymetry along the East Johor Strait to Singapore-Malaysia Causeway ranged from 2 mMSL to 17 mMSL as shown in Figure 97. The bed level along the mainstream of Sungei Cina was set up at below 2 mMSL.

Besides the hydrodynamic conditions, transportation of TSS in the river was simulated in the models to assess the impacts of the construction activities on water quality in Sungei Cina. Salinity changes were simulated to understand potential impacts of the change in hydrological conditions of the catchment on salinity in Sungei Cina.

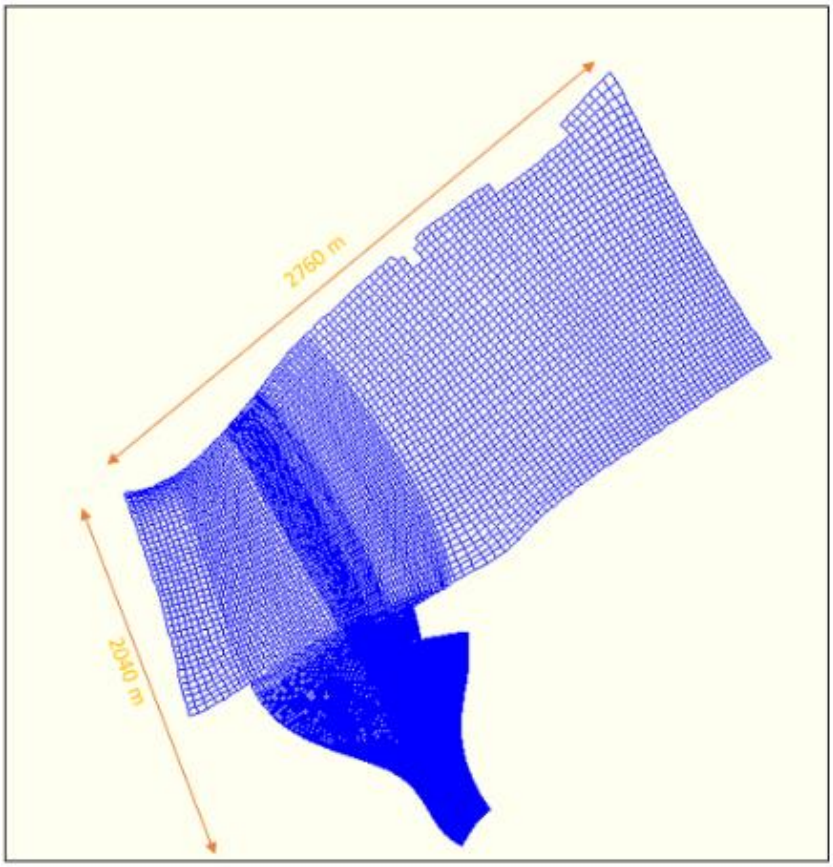


Figure 96: Curvilinear Local Grid Developed for the Hydrological Impact Assessment

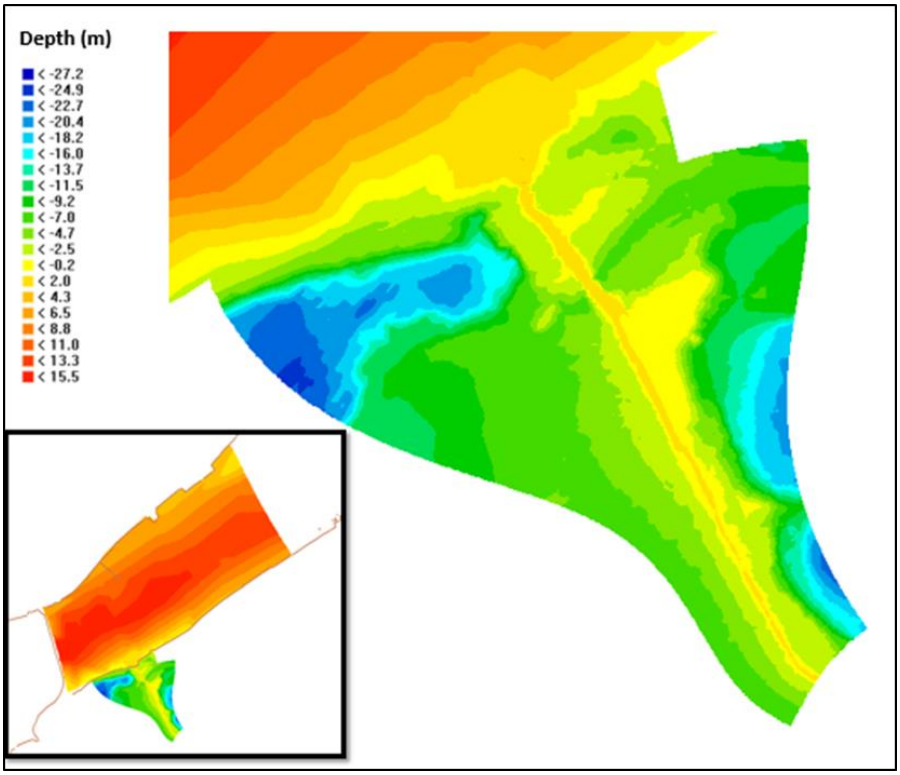


Figure 97: Model Bathymetry of the East Johor Strait with Depth Below Mean Sea Level

SWMM and Delft3D models were used to assess the impact of additional flow diversion from adjacent catchments (refer to Sections 3.1 and 8.1). Two options were assessed with different proposed discharge locations to Sungei Cina. In Option 1, the proposed drain outlet is located further inland at immediate downstream of Admiralty Road West; while drain outlet in Option 2 is located at the river mouth of Sungei Cina (refer to Figure 98). While considering extreme case conditions happening during a 25-year return period storm event, Option 2 showed less impact on flow capacity of Sungei Cina than Option 1. Therefore, to simulate the worst-case scenario for potential impact of the additional flow diversion to Sungei Cina, Option 1 and related parameters (i.e. water level, velocity and salinity concentration) were selected for further assessment.

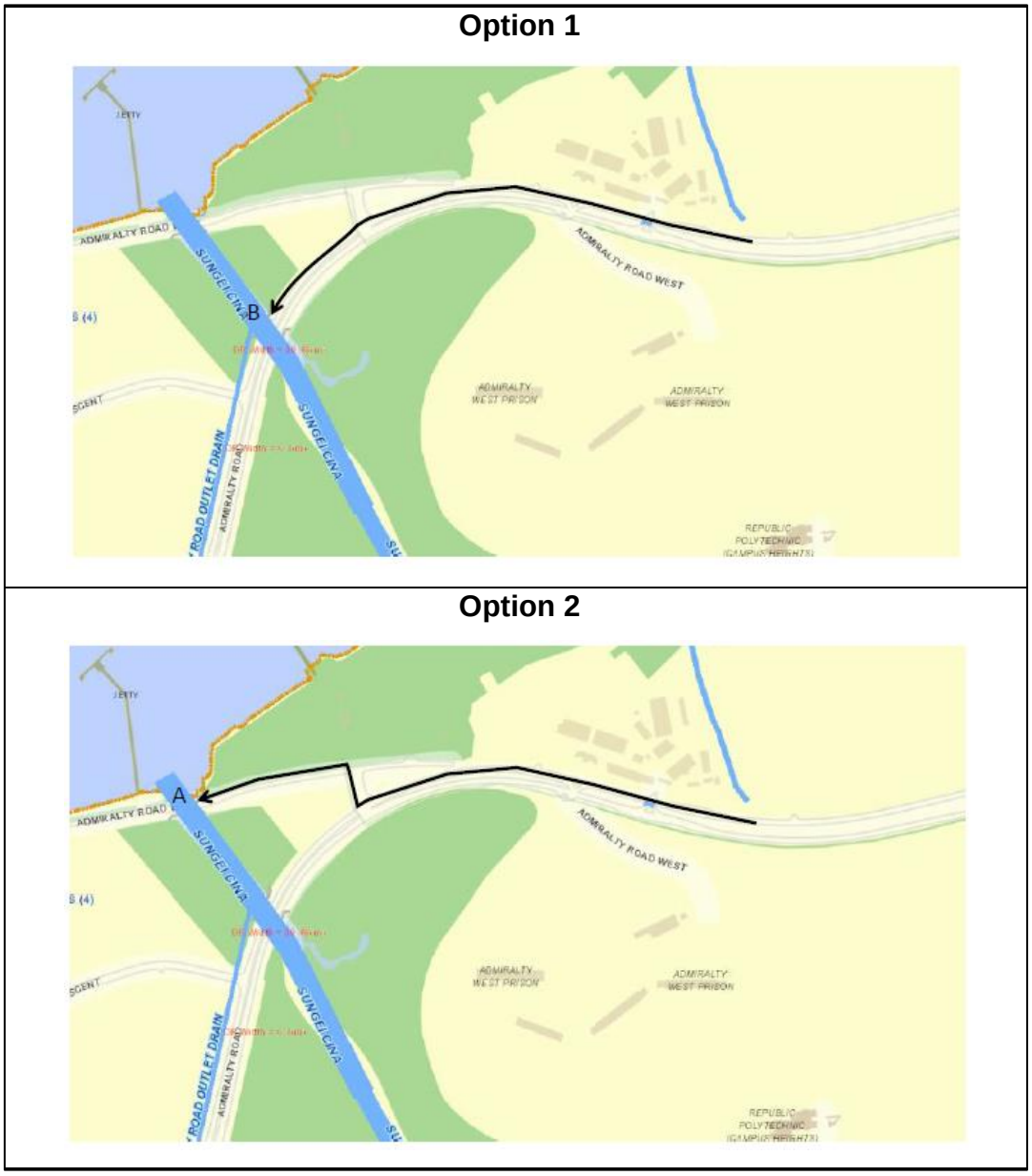


Figure 98: PUB Proposed Discharge Locations along Sungei Cina

8.4.2 Classification of Sensitive Receptors

Receptor screening for surface water was conducted within 1 km from the river mouth of Sungei Cina. This section introduces a comprehensive list of marine and surface water sensitive receptors that was considered for the present impact assessment. It provides further description of the receptors on Singapore's side of the East Johor Strait (EJS). The location of the identified sensitive receptors within the core study area is illustrated in Figure 99 and their classification is tabulated in Table 52.

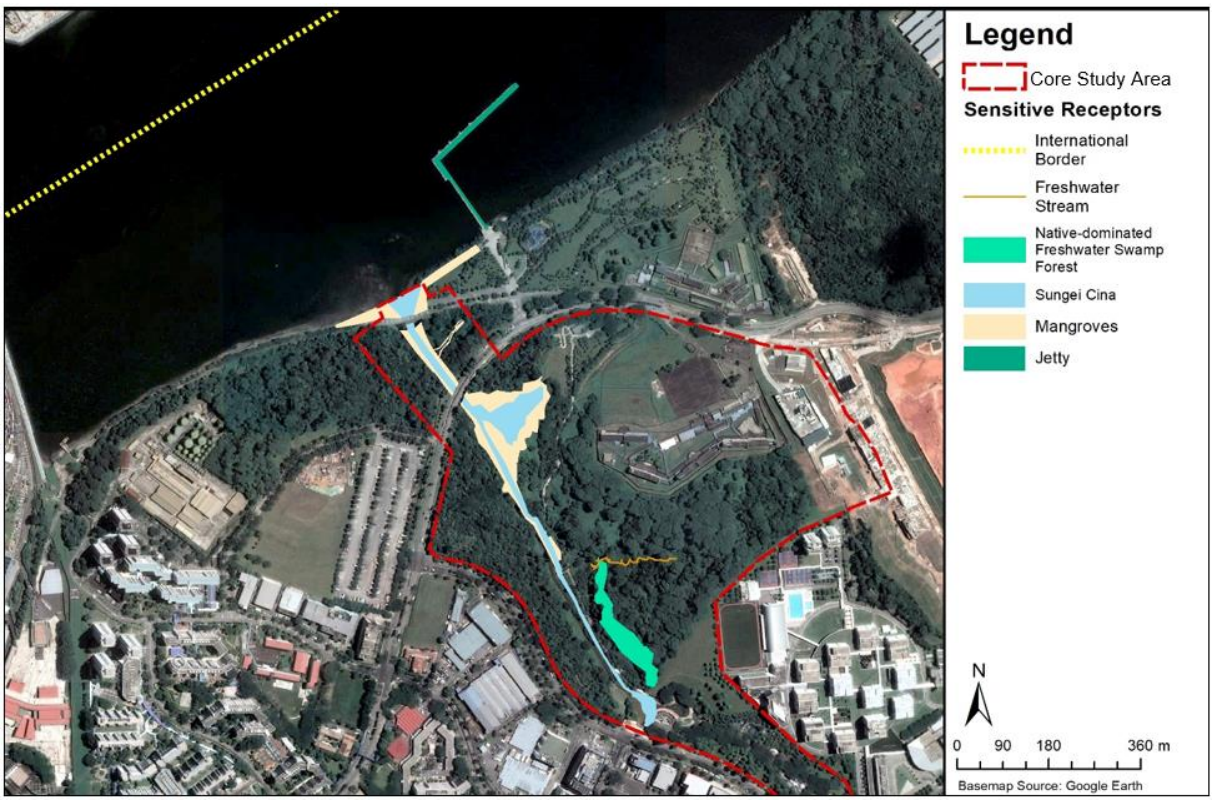


Figure 99: Location of Sensitive Receptors in the Core Study Area (the alignment of International Border: sourced from OneMap, 2021)

Table 52: Classification of Sensitive Receptors Identified within the Core Study Area

Sensitive Receptor	Description	Water Use	Sensitivity Classification
Mangroves / Coastal Forest (Intertidal area in brackish river water)	Mangrove habitats were found along Sungei Cina (part of Admiralty Park), mainly along the downstream section of the river. Observations from the site walk included aquatic life.	Surface and marine water receptor supporting ecosystems of biodiversity conservation significance.	Priority 1
Native-dominated Freshwater Swamp Forest and Freshwater Stream (refer to Section 7.4)	The Native-dominated Freshwater Swamp Forest and the Freshwater Stream are located to the east of the upstream of Sungei Cina. They were identified to be a habitat for fauna species and house flora species of conservation significance.	Surface water receptor supporting ecosystems of biodiversity conservation significance.	Priority 1

Sensitive Receptor	Description	Water Use	Sensitivity Classification
Sungei Cina (Brackish River Water)	Sungei Cina is a brackish water river that discharges into EJS. Observations from the site walk included aquatic life.	Surface water receptor not used for drinking water purposes and do not support ecosystems of biodiversity conservation significance	Priority 2
Aquatic Life (Marine Water)	Aquatic life found along the EJS is considered due to their proximity to the river mouth of Sungei Cina.	Marine water receptor with relatively high biodiversity value, but not protected and are not supporting any ecosystems of biodiversity conservation significance	Priority 2
Marine Facilities (Marine Water)	A jetty, is located approximately 230m from the river mouth of Sungei Cina. It is currently used as a recreational site by local anglers.	Marine water receptor not used for any purposes and are not protected	Priority 3
International Border (Marine Water)	The Singapore-Malaysia international border runs almost parallel and extends approximately 500m from Singapore's northern coastline.	Marine water receptor not used for any purposes and are not protected	Priority 3

8.4.3 Overview of Impacts

This section discusses the potential environmental impacts arising from the construction and operational phases of the projects.

8.4.3.1 Potential Impacts during Construction Phase

Nearby waterbodies can be potentially exposed to contamination or hydrological changes due to the activities taking place during the projects' construction phase. The sources that could potentially initiate an impact to the nearby marine and surface water sensitive receptors include but are not limited to the ones listed in Table 53.

Table 53: Potential Hydrological and Water Quality Impacts during Construction Phase

Activity	Potential Source of Impacts	Potential Associated Impacts
Land clearing, earthworks and excavation activities	• Run-off from exposed soil surface, earth working areas, soil stockpiles; • Stormwater/groundwater pumped out from excavated areas; • Release of grouting and cement materials; • Run-off from dust suppression sprays; • Elevated suspended solids (e.g. silt and sediment) in site run-off due to heavy rain; • Spoil generation, handling and transport; and • Heavy rain during construction.	<u>Water quality contamination</u>: • Solid waste generated can lead to elevated levels of suspended solids leading to increased turbidity and sedimentation rates. They can contaminate waterbodies via run-off or improper waste handling / disposal. They can also block the temporary drains leading to contamination of receiving waterbodies; • Improper storage, handling, disposal or leakage of toxic waste generated at temporary work areas can lead to water contamination;

Activity	Potential Source of Impacts	Potential Associated Impacts
Building construction activities	• Improper handling, transfer and storage of construction materials and wastes; • Release of grouting and cement materials; • Heavy rain during construction; • Change in land use due to the new residential developments (increase of impervious surface)	• Inappropriate discharge of the liquid effluent (wastewater) generated during the construction works to waterbodies will result in contamination in nearby water sources; • Inappropriate discharge of the domestic sewage and poor maintenance of the portable chemical toilet (e.g. overflow or overload) can result in run-off to nearby water sources and potentially contaminate the waterbodies located adjacent to the construction sites; • Contaminated stormwater due to improper storage/disposal/transport of chemical materials handled and stored on site leading to an increase in the levels of oil, grease and other chemical substances in the nearby waterbodies; and • Fuel and lubricants spillage from maintenance of construction vehicles and mechanical equipment can also lead to elevation in levels of oil in the nearby waterbodies. <u>Changes in waterbodies' hydrology</u>: • Reduction in groundwater recharge and baseflow (sub-surface water discharge) impacting water sensitive ecosystem (e.g. the freshwater swamp forest).
Storage and disposal of solid wastes	• Improper handling, transfer, storage and disposal of spoil and solid waste (e.g. excavated earth, construction debris).	
Storage and disposal of liquid wastes	• Improper management of sewage effluents from on-site; and • Inappropriate discharge of the domestic sewage and poor maintenance of the portable chemical toilet, storage tanks and septic tanks (e.g. overflow or overload).	
Storage and disposal of toxic wastes	• Improper handling, transfer and storage of toxic waste (e.g. contaminated excavated earth).	
Use and storage of chemical substances, and refuelling activities	• Improper handling, transfer and storage of chemical substances; • Accidental spill and leaks; and • Fuel and lubricants spillage from maintenance of construction vehicles and mechanical equipment.	

8.4.3.2 Potential Impacts during Operational Phase

Waterbodies can potentially be exposed to contamination or hydrological changes due to the activities taking place during the projects' operational phase. The sources that could potentially initiate an impact to the nearby surface and marine water sensitive receptors include the ones listed in Table 54.

Table 54: Potential Hydrological and Water Quality Impacts during Operational Phase

Activity	Potential Source of Impacts	Potential Associated Impacts
Change in land use due to the future developments	• Increase in impervious surface cover due to the future developments	<u>Changes in Water Quality</u>: • Elevated suspended solids (e.g. silt and sediment) and stormwater wash-off pollutants (e.g. heavy metals and nutrients) built-up in the new development area and discharge to the river; and • Potential change in salinity during dry season due to potential change of sub-surface water discharge to Sungei Cina.
	• Reduction of the existing catchment area of Sungei Cina	
	• Diversion of the stormwater from the future catchment to Sungei Cina	

Activity	Potential Source of Impacts	Potential Associated Impacts
		Changes in waterbodies' hydrology: • Increase of storm water run-off drained to the river during storm event causing increased water level and subsequent flooding of surrounding areas adjacent to the river; and • Reduction in groundwater recharge and baseflow (sub-surface water discharge) impacting water sensitive ecosystem (e.g. the freshwater swamp forest).

8.4.4 Minimum Control for Impacts

This section proposes minimum controls, or standard practices that are commonly implemented in Singapore for similar construction activities. These have been assumed to be implemented for the purposes of the impact assessment. Table 55 and Table 56 are a non-exhaustive list of minimum controls for each potential impact identified in Section 8.4.3 for construction and operational phases respectively.

Table 55: Minimum Controls during Construction Phase

Environmental Parameter	Activity	Minimum Control
Solid & Toxic Waste Generation	Site clearing, earthworks and general construction activities (building construction etc.)	• Development of Standard Operation Procedure (SOP) for safe handling, transfer, storage and disposal of solid waste; • Effective Earth Control Measures (ECM) and monitoring implemented as recommended in the Code of Practice on Surface Water Drainage to ensure that discharge into stormwater drainage system does not contain TSS in concentrations greater than the prescribed limits under the Sewerage and Drainage (Surface Water Drainage) Regulations; • ECM measures include but are not limited to minimisation of formation of bare soil, coverage of all bare/erodible surfaces, concrete cut-off drains, silt fences/traps along the perimeter cut-off drain, turbidity curtains for works adjacent to waterbodies, etc.; • Implementation of CCTV including Silty Imagery Detection System (SIDS) at the public drain to monitor the surface run-off discharges from the sites as per the PUB circular on Preventing Muddy Waters from the Construction Sites (October 2015); • Provision of enclosed bins and waste disposal facilities cleared up as often as necessary to prevent build-up. Housekeeping checks will be carried out once a day to ensure all litter is cleared from site; • All wastes will be disposed only in the designated waste disposal facilities and appropriately separated, i.e. by training workers to properly sort and label the different types of waste (reusable and recyclable waste, toxic and non-toxic waste, etc.); and • Appropriate disposal of any waste listed in the Environmental Public Health (General Waste Collection) Regulations by licensed waste operator/collector.

Environmental Parameter	Activity	Minimum Control
Liquid Effluent Generation and Stormwater Run-Off	Construction wastewater resulting from site clearance, excavation and construction, etc.	• A full inventory of all anticipated wastewater streams and volumes should be finalised before the onset of the construction works; • No unmanaged discharge of wastewater stream permitted; • Reduce, reuse and recycle hierarchy principle to be applied to wastewater on-site; • Regular audits on environmental management procedures shall be carried out on site; • No hazardous liquids to be sent to the settling pond; • Hazardous wastewater, such as oily water, thinners, solvents, or paints, are to be stored and removed for treatment and disposal off-site by an approved Waste Management Contractor. Hazardous liquids to be handled as Hazardous Waste; • Settling ponds will be of impervious material and be designed for sufficient capacity to hold volumes of wastewater produced on-site, as well as allowance for stormwater run-off and potential fire-fighting wastewater; • Temporary storage volumes should be provided for overflow situations. Temporary storage to be of sufficient capacity to capture any additional volumes that may be expected to ensure untreated wastewater is not released to waterbodies unless it complies with Singapore NEA Guidelines on trade effluent discharge concentrations; • A responsible person (E.g. ECO) to be assigned to oversee the efficient operation of the settling ponds where 'Good Housekeeping' practices would be adhered to. Also, the area would be carefully managed to avoid spills, leaks, and odour issues, with the settling ponds checked at least daily to ensure proper functionality; • Daily record volume of wastewater, as well as volumes of sludge and other produced wastes; • The settling ponds, as well as wastewater generating areas on-site, to be equipped with spill clean-up kits; • Adequate drainage, cut-off drains sump pit, road kerb, piping, toe wall and/or channelling of construction process wastewater streams (e.g. concrete batching, wash water, etc.) to be assured through detailed design for capture and treatment in the settling ponds. Where applicable (e.g. in the vicinity of liquid storage or refuelling areas), this infrastructure shall include oil-water separators to capture inadvertent spills or leaked oils or greases; • Implement a construction Environmental Management and Monitoring Plan (EMMP) and ensure full preparation of associated plans and procedures including the following: ➢ EMMP to include Standard Operating Procedures (SOPs), an Emergency Response Plan (ERP), an inventory of wastewater streams, training of staff as well as an inspection, maintenance and audit schedule; and ➢ Full development of EMMP Wastewater Management Procedures to include dedicated management and monitoring procedures that covers all eventualities related to the proper operation of the settling ponds, or any other wastewater discharge location/equipment. • Regular and dedicated procedures for the inspection and maintenance of wastewater collection, storage, and treatment infrastructure, such as pipes, oil water separators, silt screens, etc.;

Environmental Parameter	Activity	Minimum Control
		➢ Regular and dedicated procedures for the management of stormwater collection, settling, testing and eventual discharge of 'clean' water to waterbodies. This should also include associated measures required (e.g. silt curtains) to prevent high sediment concentration stormwater drainage to waterbodies; and ➢ A training programme for all on-site workers, including sub-contractors, in relation to their obligations for ensuring proper water quality management.
	Storage and disposal of domestic liquid wastes	• Provision of portable toilets and on-site septic tank; • Regular cleaning of the portable toilets and clearing of sewage waste; • Appropriate location of toilet facilities away from any nearby waterbodies; • Inspections and audits to ascertain the hygienic conditions onsite; • The toilet facilities will be placed at least 30 m away from any nearby watercourse; and • Training of workers on the best practices to contribute in environmental protection. • Appropriate disposal of any waste listed in the Environmental Public Health (General Waste Collection) Regulations by licensed waste operator/collector.
	Storage and disposal of construction solid wastes	• Surface Water Drainage, to be endorsed by a Qualified Erosion Control Professional (QECP) and submitted to PUB; • Implementation of the Earth Control Measures (ECM) plan before the start of any construction work; • Effective ECM and monitoring implemented as recommended in the Code of Practice on Surface Water Drainage to ensure that discharge into stormwater drainage system does not contain TSS in concentrations greater than the prescribed limits under the Sewerage and Drainage (Surface Water Drainage) Regulations; • ECM measures include but are not limited to minimisation of formation of bare soil, coverage of all bare/erodible surfaces, concrete cut-off drains, silt fences/traps along the perimeter cut-off drain, turbidity curtains for works adjacent to waterbodies (canals, drains, rivers), etc. • Implementation of CCTV including a Silty Imagery Detection System (SIDS) at the public drain to monitor the surface run-off discharges from the sites as per the PUB circular on Preventing Muddy Waters from the Construction Sites (October 2015); • Run-off within, upstream of and adjacent to the work site shall be effectively drained away without causing flooding in the vicinity; • Manholes should always be adequately covered and temporarily sealed; • Protection of stockpiles with erosion blanket coverage and proper scheduling of the demolition and earthworks to reduce the quantity of stockpiles to be stored onsite; • Coverage of temporary / open storage of excavated materials; • All vehicles and plant should be cleaned before leaving the site to ensure no earth, mud, debris, etc., is deposited on roads; and the wastewater hence generated shall be treated prior to discharge to the public sewers; and

Environmental Parameter	Activity	Minimum Control
		• Appropriate permits for discharge to be obtained from relevant authority prior to discharge. No trade effluent other than that of a nature or type approved by NEA Director-General shall be discharged into any watercourse or land.
Improper Management of Chemical Substances	Use, storage and disposal of chemical substances Refuelling activities	• Development of standard operating procedure (SOP) for safe handling, transfer and storage of toxic waste; housekeeping checks once a day to ensure all toxic waste is cleared from site; • Appropriate tests to ascertain the presence/absence of contamination of the excavated earth and sand; • Appropriate storage area (enclosed on at least 3 sides, covered and with adequate ventilation); • Appropriate construction material for toxic waste storage containers with leak detection tests conducted periodically; • Provision of secondary containment for all toxic waste stored in bulk as per the requirements in the Code of Practice for Pollution Control (COPPC); • Preparation of an emergency response plan, training of the emergency response team (ERT) to be competent in the response mechanism and provision of response kits for any spillages; • Consignment notification / tracking system and transport emergency response plan for transport of toxic waste; • Appropriate disposal of toxic waste as per required in the Environmental Public Health (Toxic Industrial Waste) Regulations by licensed waste operator/collector; and

Table 56: Minimum Controls during Operational Phase

Environmental Parameter	Activity	Minimum Control
Stormwater Run-off	Stormwater Run-off Generation due to increased impervious surface	• Adequate drainage, piping and/or channelling of stormwater run-off to be assured through detailed design for capture and treatment before discharge into surface water; • Regular and dedicated procedures for the inspection and maintenance of stormwater collection, storage, and treatment infrastructure, such as pipes, oil water separation, silt screens, etc.; ➢ Regular and dedicated procedures for the management of stormwater collection, settling, testing and eventual discharge of 'clean' water to surface waters. This should also include associated measures required (e.g. silt curtains) to prevent high sediment concentration stormwater drainage to surface waters. • Potential increase of peak-flow due to the change in the land use at the new residential developments can be mitigated by providing detention tanks within the HDB area. Detention tanks can capture stormwater during heavy storm event to reduce the peak run-off. Stored water can be discharged back to the system after the storm event. As required by PUB, the storage system need to be in place to reduce the peak flow at the operational phase to be same or less than that of the existing condition; • ABC Water Design approach can be considered to reduce the peak-flow as well;

Environmental Parameter	Activity	Minimum Control
		• Providing more softscape area should be considered in the design of the development to reduce the run-off coefficient which will help to reduce the peak-flow and reduce flood risk at downstream area.

8.4.5 Impact Prediction and Evaluation during Construction Phase

The impact assessment was conducted for proposed residential development (refer to Figure 7) and 2 options for road developments (refer to Figure 12 and Figure 13) for construction phase. The sensitive receptors such as marine facilities and international border are not applicable for some impact assessment because the receptors are located further out of Sungei Cina and not affected by some environmental parameters of proposed developments. For sensitive receptors located within Sungei Cina and in the vicinity of development area, such as native-dominated freshwater swamp forest and freshwater stream, Sungei Cina, mangroves and aquatic life, they may have direct impact from proposed developments.

8.4.5.1 Water Quality Contamination

8.4.5.1.1 Increased Sediment Loads

Due to the construction of the future developments, the land use of the core study area will change, leading to increased cover of impervious surface. Impervious cover is associated with roadways, parking lots, sidewalks and rooftops and its expansion results in increased surface water run-off.

During rainfall events, clean stormwater and contaminated run-off will be separately managed by implementing minimum controls as recommended in Section 8.4.4. Given the strict requirements on construction procedures in Singapore and effective monitoring requirements developed by the regulatory authority (PUB), sediment loading discharge into stormwater drainage system is minimised by applying the Code of Practice on Surface Water Drainage during construction phase. The construction discharges need to comply with the NEA Trade Effluent Discharge limits for TSS (i.e. 50 mg/l). Given that the baseline TSS concentration at the river mouth of Sungei Cina has an average value of around 51 mg/L, the discharge will not significantly impact on the existing conditions, as long as the loading concentration is within the prescribed limit. Settling ponds or sediment traps need to be designed to filter run-off of the 5-year storm event, which can be considered as an extreme and very rare condition. Minimum control such as installation of settling pond can improve TSS removal in run-off before discharging into Sungei Cina. Thus, the impact intensity of sediment loading discharge is considered as low. The impact consequence for all water receptors is therefore imperceptible to low.

Besides, extreme case (i.e. 5-year return period storm) was simulated to assess the impact of stormwater generated from the construction sites of the developments at Parcel A, B and C (refer to Figure 7 and Figure 100) after implementation of minimum control measures. The sediment loading discharged during the 5-year return period storm event was simulated for pre-construction and construction conditions. Modelling results showed that there is minor change (increase < 10 mg/L) on TSS concentration between pre-construction and construction conditions under extreme case (refer to Figure 101). The sediment plume is localized within Sungei Cina, mainly occurring in the river downstream and mangrove area. In the mangrove area, the TSS concentration change is assessed to be lower than 5mg/L. Based on the suspended sediment load tolerance limit of mangroves (refer to **Appendix Q**), the range of suspended sediment loads that may be generated from the construction

activities can be fully tolerated by the mangroves. In order to ensure proper inundation of seawater and reduce retention of discharge water in mangroves area, the recommended period for discharging water from settling pond is during ebb tide, which is the period of tides flowing out from Sungei Cina. In terms of aquatic life, slight impacts (corresponding to a low intensity) might be induced when the TSS concentration increase is less than 10 mg/L based on criteria shown in Table 57 (refer to **Appendix Q** for more details). Therefore, the impact consequence for all water receptors under extreme case ranges from imperceptible to low.

Since the impact consequence for all water receptors is imperceptible to low (for both normal and extreme conditions) and the likelihood of such impact to be encountered during the construction phase is low, the impact significance of increased sediment loads discharged into Sungei Cina is deemed to be negligible to minor.

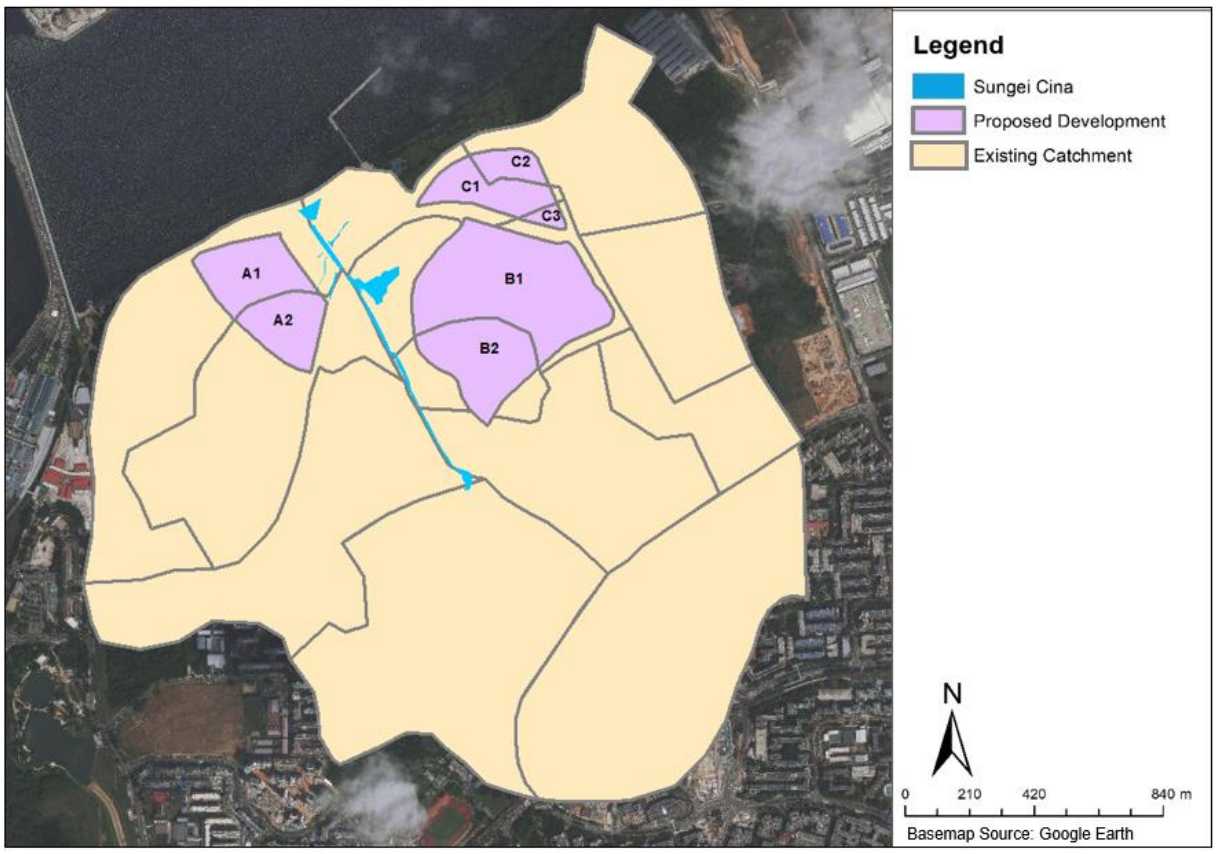


Figure 100: Future Developments assessed in the Hydrology and Water Quality Impact Assessment



Figure 101: Difference of TSS Concentration between Existing Conditions and During Construction Conditions under 5-year Storm Event (the alignment of International Border: sourced from OneMap, 2021)

Table 57: Impact Severity on Aquatic Life for Different TSS Concentrations (refer to **Appendix Q** for more details)

Impact Severity on Aquatic Life	TSS Concentration
No Impact	Excess TSS < 5 mg/L
Slight Impact	5 mg/L < Excess TSS < 10 mg/L
Minor Impact	10 mg/L < Excess TSS < 25 mg/L
Moderate Impact	25 mg/L < Excess TSS < 400 mg/L
Major Impact	Excess TSS > 400 mg/L

The working boundary of Option A of the road development (Figure 76) is located exactly at native-dominated freshwater swamp forest, based on the proposed layout. The sediment loading from construction work may potentially flow to the freshwater swamp forest and affect its water quality. Thus, the impact intensity for freshwater swamp, aquatic life and Sungei Cina is high. For other sensitive receptors such as mangroves, the impact intensity will be low as no sediment loads would be discharged directly into those sensitive receptors. The respective impact consequence for the native-dominated freshwater swamp forest, Sungei Cina and aquatic life is high and for mangroves is low. The land use of native-dominated freshwater swamp forest will be modified once the worksite is established within the swamp area, and the likelihood of impact to freshwater swamp forest, Sungei Cina and aquatic life is medium. As mangroves are located at downstream of Sungei Cina, the sediment loading will be further diluted before reaching the mangroves area, there will be low likelihood of occurrence of sediment

loading on mangroves. The impact significance of increased sediment loading of Option A of the road development on all sensitive receptors is assessed to range from minor to major.

For Option B of the proposed road, which fully avoids the proposed core conservation area and its buffer. The impact intensity on the freshwater swamp forest is considered to be low. The suspended solids from construction work may flow into Sungei Cina during a heavy rainstorm. As the construction of road stabilisation structures may disturb the upstream of Sungei Cina, the impact intensity to Sungei Cina and its aquatic life is considered high. The impact intensity for other water receptors such as mangroves is low due to the high sediment tolerance in mangroves. The consequence of impact to mangroves is also considered to be low. In fact, in the increase of sediments discharged into Sungei Cina will significantly affect the water quality along the stream – especially the upstream. Thus, the impact consequence on Sungei Cina and aquatic life is considered high. The impact of sediment loading on the native-dominated freshwater swamp forest is of low consequence and likelihood during construction stage. The impact likelihood of sediment transport to Sungei Cina and aquatic life is medium, despite the implementation of well-planned ECM measures. This is because the working boundary is placed adjacent to the upstream of Sungei Cina. When minimum controls are applied to avoid sediment loading to mangroves the likelihood of the impact to mangroves is low. Thus, the assessed impact significance due to sediment loading from Option B of the road development to all sensitive receptors is considered minor to major.

The overall significance is assessed to be negligible to major impact.

8.4.5.1.2 Improper Management of Solid & Toxic Waste

For the proposed development area during construction phase, the quantity of solid and toxic waste stored on site (e.g. chemical waste, construction debris, etc.) is expected to be limited and will be periodically disposed of by licensed waste management contractors as provided for in the minimum controls. The discharge of suspended solids into the waterbodies is also limited with the implementation of a settling pond to allow for sedimentation. Water soluble parameters such as TDS, nutrients, heavy metals, etc. will be monitored and treatment for these parameters will be put in place before the effluent is released into the waterbodies. Given the limited amount of solid and toxic waste stored, the regular disposal of spoil and use of settling treatment to minimise solids discharge, the intensity of contamination is low for marine water receptors and medium for surface water receptors. The consequence to waterbodies due to spillage or run-off of solid and toxic waste is classified as being imperceptible for marine water receptors and medium for surface water receptors. Provided that all control measures detailed in Table 55 are in place and precautionary management controls are implemented on-site (such as regular inspection, housekeeping and training of workers), it is unlikely that spills or run-off from waste stored on-site will regularly or occasionally occur. In addition, the suspended solids discharge is expected to be kept to a minimum within the settling pond. Therefore, the likelihood of occurrence is expected to be unlikely for all marine water receptors and low for surface water receptors. The significance of improper management of solid and toxic waste due to the proposed residential development is assessed to be negligible to minor impact.

Improper management of solid and toxic wastes from the Option A of the proposed road construction may potentially cause of the discharge of waste into the waterbodies. All waste listed in Environmental Public Health (General Waste Collection) Regulations will be disposed only at designated waste disposal facilities and appropriately separated by licensed waste operator as described in Table 55. Thus, the intensity of impact on mangroves, the native-dominated freshwater swamp forest, Sungei Cina and

aquatic life will be medium. Contamination of water quality from the solid and toxic waste will cause medium consequence to Priority 1 and Priority 2 sensitive receptors. Besides, with proper procedures of storage, transfer and disposal of solid and toxic waste, the likelihood of the impact for all sensitive receptors will be reduced to low. And the impact significance from improper management of solid and toxic wastes during construction of Option A of the road development will cause minor impact to Priority 1 and Priority 2 sensitive receptors.

During construction phase of Option B of the proposed road development, minimum controls such as the provision of enclosed bins and waste disposal facilities will be implemented and cleared frequently to prevent built-up of wastes. However, during a rainfall event, there is a potential for water quality contamination from contaminated effluent runoff from the waste that may have been improperly handled onsite. This is expected to have a medium impact intensity to Priority 1 and Priority 2 sensitive receptors but low impact intensity to the native-dominated freshwater swamp forest. When domestic sewage from construction site is inappropriate discharged to nearby waterbodies, it can potentially contaminate the waterbodies and thus impact consequence to mangroves, Sungei Cina and aquatic life will be medium. The impact consequence to the native-dominated freshwater swamp forest will be low. As described in Table 55, the minimum control such as inspection and maintenance to portable chemical toilet will be conducted regularly and this helps to bring the likelihood of impact to low for Priority 1 and Priority 2 sensitive receptors. The SOP for safe handling, transfer and disposal of domestic sewage will be developed and followed carefully. The impact significance of the construction of Option B of the road development to the sensitive receptors is assessed to be minor.

The overall significance of solid and toxic waste spillage or run-off impact from proposed development to all waterbodies is assessed to be of negligible to major impact.

8.4.5.1.3 Improper Management of Liquid Effluents

For the proposed development area, liquid effluents generated from the construction activities commonly include extracted groundwater, sanitary discharges, construction wastewater and stormwater run-off. For sanitary discharges, portable toilets will be installed as part of the minimum controls provided for the development and sanitary effluents from portable toilets will be collected every week by the appointed contractor for disposal. Management controls are also expected to be implemented, such as regular inspection and housekeeping. With proper application of the minimum controls described in Table 55, such as implementation of settling ponds to hold wastewater produced during construction, the impact intensity of the construction site surface run-off on surface water quality can be reduced to a low level. The extracted groundwater, stormwater run-off and construction wastewater generated from construction activities are recommended be channelled to a settling pond and treated before the effluent is released to the nearby waterbodies. Other controls, such as putting in place regular and dedicated procedures for inspection and the maintenance of wastewater collection and storage will reduce the likelihood to unlikely and low for marine and surface water sensitive receptors, respectively. Hence, the impact significance of improper management of liquid effluent from the proposed residential development is assessed to be negligible to minor.

For the construction of Option A of the road construction, an ECO will be assigned to oversee the entire operation of settling ponds effectively and regular inspection will be carried out to avoid spills, leaks and odour issue as described in Table 55 The impact intensity due to improper management of liquid effluents to mangroves is low and other sensitive receptors is medium. With the installation of temporary storage volumes to prevent overflow during heavy rain, the mangroves are exposed to a low impact

consequence of liquid effluent contamination from proposed road construction. While the liquid effluents such as wastewater and sanitary discharge from nearby worksite will be well handled, the impact consequence to native-dominated freshwater swamp forest, Sungei Cina and aquatic life will still be considered high. When the discharge of liquid effluents is monitored and complies with the discharge limit of NEA guidelines as stipulated in minimum controls, the likelihood of occurrence to mangroves, Sungei Cina and aquatic life will be low and impact significance to all sensitive receptors is assessed to be minor.

During construction phase of Option B of the proposed road development, the procedures for wastewater collection, storage and treatment will be followed accordingly and executed as part of minimum controls as mentioned in Table 55. As such, the impact intensity to Priority 1 sensitive receptors such as the mangroves and native-dominated freshwater swamp forest will be low and other sensitive receptors such as Sungei Cina and aquatic life will be medium. Temporary storage volumes also will be provided to capture of additional volumes of wastewater to prevent overflow situation and the impact consequence for Priority 1 and Priority 2 sensitive receptors is classified as low to medium. Apart from following procedures for wastewater management, audit and inspection on the procedures are necessary to be carried out regularly and it helps to reduce the likelihood of the impact to low for Priority 1 and Priority 2 sensitive receptors. The impact significance on Priority 1 and 2 sensitive receptors is assessed to be minor with the application of minimum controls.

Overall impact significance on sensitive receptors from improper management of liquid effluent is assessed to range from minor to major.

8.4.5.1.4 Improper Management of Chemical Substances

Chemical substances will be stored on concrete surfaces with containment bunds or on spill control pallets. Moreover, SOP is expected to be developed to ensure the proper handling, transfer and storage of these substances, which will also contribute to reduce the frequency and impact of chemical spillage. Thus, the intensity of potential contamination from chemical substances is medium for both marine and surface water sensitive receptors. The impact consequence to water sensitive receptors is classified as low to medium. Other minimum control measures described in Table 55 will be implemented, such as periodically conducting leak detection tests. Therefore, the likelihood of occurrence of a spill leading to run-off into the marine and surface water sensitive receptors is assessed to be unlikely and low, respectively. The overall significance of chemical spillage impact to water sensitive receptors is assessed to be of negligible to minor impact.

For construction activities of Option A of the road development, the chemical wastes such as toxic chemicals will be managed based on SOP and disposed safely following Environmental Public Health (Toxic Industrial Waste) Regulations. The intensity of impact is medium for Priority 1 and Priority 2 sensitive receptors. Housekeeping checks will be conducted daily as well to ensure all toxic chemicals are cleared from site. Thus, the impact consequence to Priority 1 and Priority 2 sensitive receptors is medium. Installation of appropriate chemical storage area with adequate ventilation and conducting routine leak detection test will reduce the likelihood of the impact on mangroves, native-dominated freshwater swamp forest, Sungei Cina and aquatic life to low. Proper handling, storage and disposal of chemical wastes will ensure that the significance of impact to Priority 1 and Priority 2 sensitive receptors is minor.

As presented in Table 55, minimum controls such as an emergency response plan may be applied for refuelling activities during construction of Option B of the proposed road development. The impact intensity on surface water sensitive receptors will be medium. As adequate training will be provided for ERT to ensure competence in the response mechanism, the consequence from the impact on Priority 1 and Priority 2 sensitive receptors will be medium. For Priority 1 sensitive receptor (i.e. native-dominated freshwater swamp forest), the impact consequence is low. The likelihood will be low for Priority 1 and Priority 2 sensitive receptors when provision of response kits for spillages is provided when managing chemical substances. The impact significance will be minor to Priority 1 and Priority 2 sensitive receptors.

Improper management on chemical substances will cause negligible to minor impact significance to the sensitive receptors.

8.4.5.2 Changes in Water Bodies' Hydrology

Another impact from the construction of the proposed developments construction is a decrease of baseflow, which is the direct input of groundwater into the waterbodies, and infiltration of precipitation into the sub-surface is inhibited.

The land use change due to the proposed development will reduce the groundwater recharge, which will subsequently result in a reduced baseflow. Based on the groundwater impact assessment detailed in Section 9.4.2.1, the development construction will cause an average baseflow reduction of 25 m^3/d in Sungei Cina. During the normal neap tide, the total inflow into Sungei Cina is estimated to be around 26,000 m^3/d and the total outflow from Sungei Cina is around 24,000 m^3/d. Therefore, the baseflow reduction due to the development construction is considered negligible when compared to the total flow (i.e. stormwater and tidal flux) in and out of Sungei Cina and it corresponds to a negligible impact intensity. Thus, the impact consequence of baseflow reduction on the Sungei Cina and its mangrove ranges from imperceptible to low. The likelihood of the reduced baseflow on Sungei Cina and its mangroves is considered medium, and the overall impact is considered of minor significance.

The reduction in baseflow into the freshwater stream (refer to Stream 1 shown on Figure 85) will be particularly notable during dry season, at it may dry out. As the freshwater stream likely feeds the native-dominated freshwater swamp forest located at the east of the upstream Sungei Cina (refer to Section 7.4 and Figure 73), the impact intensity of this reduction in baseflow on the native-dominated freshwater swamp forest and the nearby freshwater stream is expected to be high and negligible intensity for the mangroves, Sungei Cina and aquatic life. The impact consequence is classified as imperceptible to high. The likelihood of the impact is considered medium for surface water sensitive receptors. Thus, the overall impact significance of baseflow reduction to other surface water sensitive receptors is minor while the impact significance to the native-dominated freshwater swamp forest and the nearby freshwater stream is major.

As the existing land use will be changed due to the construction of Option A of the proposed road development, the groundwater feeding to waterbodies will also be reduced and the intensity of the impact on the native-dominated freshwater swamp forest and Sungei Cina is considered high. For mangroves, the impact intensity from baseflow reduction is considered negligible as the flow in the mangroves is mainly from tidal influence. The impact intensity due to changes in hydrology to aquatic life is low. The likelihood of the impact will be low to medium for surface water sensitive receptors. Thus,

impact significance from baseflow reduction to all surface sensitive receptors is assessed to range from minor to major.

During the construction phase of Option B of the proposed road development, as the working boundary does not affect the proposed core conservation area, there will be not much change to baseflow in the native-dominated freshwater swamp forest, the impact intensity is low. However, the impact intensity on Sungei Cina will be high as the upstream of Sungei Cina will be modified during construction phase. For mangroves and aquatic life, the intensity from the impact is considered negligible to low as well. The consequence from the impact to all surface water receptors is classified to be low to high. The likelihood of impact on Sungei Cina will be medium and low for the other surface water sensitive receptors. The impact significance from baseflow reduction to Sungei Cina and other surface water sensitive receptors is assessed to range from minor to major.

The overall impact significance due to changes in waterbodies' hydrology is assessed to be minor to major.

8.4.5.3 Summary of Impact Evaluation during Construction Phase

Table 58: Summary of Impact Evaluation during Construction Phase for Proposed Development

Environmental Impacts	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
Increased Sediment Loads	Mangroves / Coastal Forest (Priority 1)	Low	Low	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Low	Minor
	Sungei Cina (Priority 2)	Low	Low	Low	Minor
	Aquatic Life (Priority 2)	Low	Low	Low	Minor
	Marine Facilities (Priority 3)	Low	Imperceptible	Low	Negligible
	International Border (Priority 3)	Low	Imperceptible	Low	Negligible
Improper Management of Solid & Toxic Waste	Mangroves / Coastal Forest (Priority 1)	Medium	Medium	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Medium	Medium	Low	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Low	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Low	Minor
	Marine Facilities (Priority 3)	Low	Imperceptible	Unlikely	Negligible
	International Border (Priority 3)	Low	Imperceptible	Unlikely	Negligible
Improper Management of Liquid Effluents	Mangroves / Coastal Forest (Priority 1)	Low	Low	Low	Minor
	Native-dominated Freshwater Swamp Forest	Low	Low	Low	Minor

Environmental Impacts	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
	and Freshwater Stream (Priority 1)				
	Sungei Cina (Priority 2)	Low	Low	Low	Minor
	Aquatic Life (Priority 2)	Low	Low	Low	Minor
	Marine Facilities (Priority 3)	Low	Imperceptible	Unlikely	Negligible
	International Border (Priority 3)	Low	Imperceptible	Unlikely	Negligible
Improper Management of Chemical Substances	Mangroves / Coastal Forest (Priority 1)	Medium	Medium	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Medium	Medium	Low	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Low	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Low	Minor
	Marine Facilities (Priority 3)	Medium	Low	Unlikely	Negligible
	International Border (Priority 3)	Medium	Low	Unlikely	Negligible
Change in Water Bodies' Hydrology	Mangroves / Coastal Forest (Priority 1)	Negligible	Low	Medium	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	High	High	Medium	**Major**
	Sungei Cina (Priority 2)	Negligible	Imperceptible	Medium	Minor
	Aquatic Life (Priority 2)	Negligible	Imperceptible	Medium	Minor
	Marine Facilities (Priority 3)	Not Applicable			
	International Border(Priority 3)	Not Applicable			

Table 59: Summary of Impact Evaluation during Construction Phase for Option A of the Proposed Road Development

Environmental Impacts	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
Increased Sediment Loads	Mangroves / Coastal Forest (Priority 1)	Low	Low	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	High	High	Medium	**Major**
	Sungei Cina (Priority 2)	High	High	Medium	**Major**
	Aquatic Life (Priority 2)	High	High	Medium	**Major**

Environmental Impacts	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
	Marine Facilities (Priority 3)	Not Applicable			
	International Border (Priority 3)	Not Applicable			
Improper Management of Solid & Toxic Waste	Mangroves / Coastal Forest (Priority 1)	Medium	Medium	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Medium	Medium	Low	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Low	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Low	Minor
	Marine Facilities (Priority 3)	Not Applicable			
	International Border (Priority 3)	Not Applicable			
Improper Management of Liquid Effluents	Mangroves / Coastal Forest (Priority 1)	Low	Low	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Medium	Medium	Low	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Low	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Low	Minor
	Marine Facilities (Priority 3)	Not Applicable			
	International Border (Priority 3)	Not Applicable			
Improper Management of Chemical Substances	Mangroves / Coastal Forest (Priority 1)	Medium	Medium	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Medium	Medium	Low	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Low	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Low	Minor
	Marine Facilities (Priority 3)	Not Applicable			
	International Border (Priority 3)	Not Applicable			
Change in Water Bodies' Hydrology	Mangroves / Coastal Forest (Priority 1)	Negligible	Low	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	High	High	Medium	**Major**

Environmental Impacts	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
	Sungei Cina (Priority 2)	High	High	Medium	**Major**
	Aquatic Life (Priority 2)	Low	Low	Low	Minor
	Marine Facilities (Priority 3)	Not Applicable			
	International Border(Priority 3)	Not Applicable			

Table 60: Summary of Impact Evaluation during Construction for Option B of the Proposed Road Development

Environmental Impacts	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
Increased Sediment Loads	Mangroves / Coastal Forest (Priority 1)	Low	Low	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Low	Minor
	Sungei Cina (Priority 2)	High	High	Medium	**Major**
	Aquatic Life (Priority 2)	High	High	Medium	**Major**
	Marine Facilities (Priority 3)	Not Applicable			
	International Border (Priority 3)	Not Applicable			
Improper Management of Solid & Toxic Waste	Mangroves / Coastal Forest (Priority 1)	Medium	Medium	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Low	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Low	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Low	Minor
	Marine Facilities (Priority 3)	Not Applicable			
	International Border (Priority 3)	Not Applicable			
Improper Management of Liquid Effluents	Mangroves / Coastal Forest (Priority 1)	Low	Low	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Low	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Low	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Low	Minor
	Marine Facilities (Priority 3)	Not Applicable			

Environmental Impacts	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
	International Border (Priority 3)	Not Applicable			
Improper Management of Chemical Substances	Mangroves / Coastal Forest (Priority 1)	Medium	Medium	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Low	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Low	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Low	Minor
	Marine Facilities (Priority 3)	Not Applicable			
	International Border (Priority 3)	Not Applicable			
Change in Water Bodies' Hydrology	Mangroves / Coastal Forest (Priority 1)	Negligible	Low	Low	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Low	Minor
	Sungei Cina (Priority 2)	High	High	Medium	**Major**
	Aquatic Life (Priority 2)	Low	Low	Low	Minor
	Marine Facilities (Priority 3)	Not Applicable			
	International Border(Priority 3)	Not Applicable			

8.4.6 Impact Prediction and Evaluation during Operational Phase

Several hydrological changes will take place within the core study area during the construction and operational phases. As discussed in Section 8.4.5.2, the development will increase the imperviousness of land, which will decrease the baseflow feeding nearby waterbodies. In addition, there will also be increased surface water run-off. Besides, as the existing catchment area of Sungei Cina (refer to Figure 104), and stormwater is proposed to be diverted from the future catchment to Sungei Cina, all these hydrological changes may disrupt the existing ecological processes and potentially affect the survival of biodiversity conservation significant ecosystems (refer to Table 54). The corresponding impacts are assessed in the following sections.

The impact assessment was conducted for proposed residential development and both options of the proposed road development for the operational phase. In addition, the impact on hydrodynamics changes due to additional flow diverted from the proposed development was also carried out.

8.4.6.1 Changes in Water Quality

Stormwater run-off generated from the proposed developments during the operational phase may affect the water quality of nearby waterbodies, such as Sungei Cina. As detention tanks will be installed and the ABC Water Design approach may be adopted (refer to Table 56), during a storm event, suspended solids will be captured before flowing into Sungei Cina. The elevated suspended solid concentration due to increased stormwater run-off is considered to have a negligible impact intensity on all water receptors.

The increase of stormwater run-off caused by the proposed developments will also increase the quantity of pollutants (i.e. heavy metals and nutrients) discharged into the nearby waterbodies, such as Sungei Cina. With the implementation of proper controls, such as ABC Water Design (Table 56), the pollutant concentration will be reduced, and the corresponding impact would be of negligible intensity on all water sensitive receptors.

The baseflow reduction caused by an increased imperviousness of existing land, the proposed reduced water catchment area and proposed drainage diversion of the stormwater to Sungei Cina (refer to Figure 98) will also affect the water quality within the core study area. As shown in Figure 102 and Figure 103, when comparing the proposed conditions with the existing conditions, there is a larger change in salinity level at the mangrove area located middle stream of Sungei Cina. A minor change of salinity is also noticed at inner mangroves and river downstream. The salinity level change for the two stormwater discharge options (refer to Section 8.4.1 and Figure 98 for more details about each option, i.e. Option 1 and Option 2) is an increase from 0 ppt to 3 ppt. According to Ng and Sivasothi, 1999, mangroves are tolerant to a wide salinity range from 0.5 ppt to 35 ppt. Therefore, the intensity of this impact is considered as negligible on Sungei Cina mangroves. In fact, an increased salinity from 0 to 3ppt may have positive impact on the mangrove as it reduces competition from terrestrial plant species that thrive in non-saline condition (refer to Section 7.5.2.3.2). The impact of salinity level increase is also considered as negligible on the other water sensitive receptors.

During operational phase of the proposed developments, the water quality changes lead to negligible intensity on all water sensitive receptors. The impact consequence on the receptor is classified as imperceptible to low. The likelihood of this impact is considered medium; therefore, the corresponding impact significance is minor.

For Option A of the proposed road development, adequate drainage and piping will be provided along the proposed road to cater for stormwater run-off so that the impact of water quality changes would be brought to negligible intensity for all sensitive receptors. As the regular maintenance and inspection of stormwater collection, storage and treatment infrastructures will be provided as described in minimum controls in Table 56, the consequence of impact for Priority 1 sensitive receptors is low and for Priority 2- Priority 3 sensitive receptors is imperceptible. The water quality of waterbodies may change during dry and wet seasons and thus the likelihood for all sensitive receptors is considered to be medium. The overall impact significance of water quality changes due to Option A of the road development on all sensitive receptors is assessed to be minor.

Sufficient capacity of drainage and pipes will need to be designed to cater for the high volume of stormwater run-off likely to be experienced during the operational phase of Option B of the proposed road development. Well-planned procedures for management of stormwater collection, settling, testing and discharge of stormwater may also be considered during operational phase. The intensity of the impact on all sensitive receptors is expected to be negligible. The impact consequence on Priority 1

sensitive receptors is anticipated to be low while the impact consequences on Priority 2 and Priority 3 sensitive receptors is expected to be imperceptible. As the water quality may change seasonally, the likelihood of impact on all sensitive receptors is medium. The overall impact significance of water quality changes due to Option B of the road development on all sensitive receptors is minor.

The overall impact significance of changes in water quality impact due to proposed developments on all sensitive receptors is minor.



Figure 102: Change in Salinity Level along Sungei Cina between Existing and Proposed Conditions for the two Stormwater Discharge Options

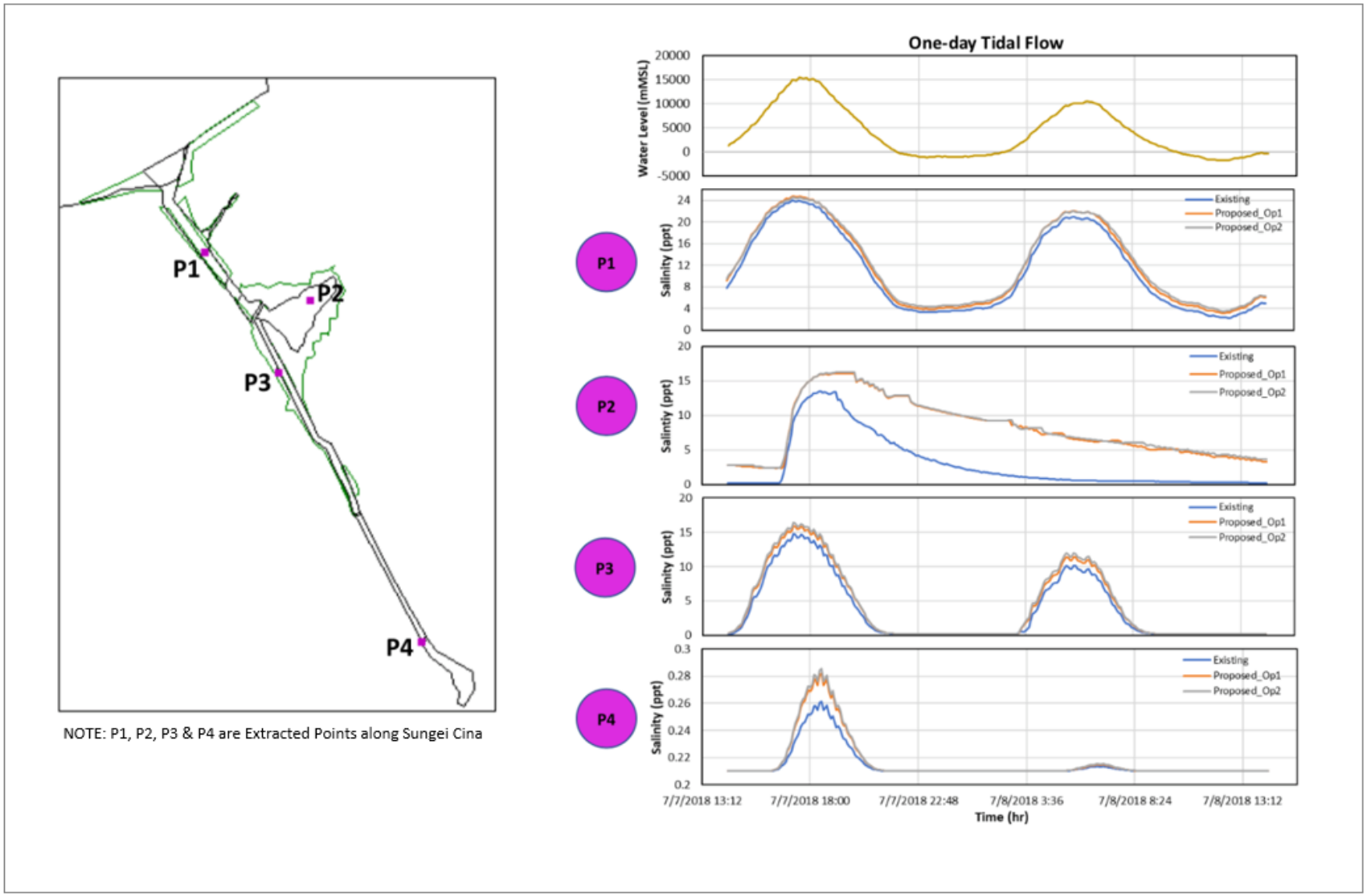


Figure 103: Change in Salinity Level along Sungei Cina between Existing and Proposed Conditions for the two Stormwater Discharge Options

8.4.6.2 Changes in Water Bodies' Hydrology

8.4.6.2.1 Baseflow Reduction

The development of the future residential use will inevitably reduce the existing water catchment area of Sungei Cina. The reduction will be of 75.6% and 84.7% for the Sungei Cina mangroves and the native-dominated freshwater swamp forest and nearby freshwater stream respectively (refer to Figure 104). This will diminish the baseflow supply to both the mangrove and native-dominated freshwater swamp forest areas and may result in adverse impacts regarding the survival of these ecosystems. In addition, the future plans encompass the redirection of the stormwater discharges to the development drains, instead of flowing to the freshwater stream as existing conditions. Based on groundwater baseflow assessment (refer to Section 9.4.5), the existing total baseflow in Sungei Cina is approximately 390 m^3/d and the range of drawdown during operational phase is assessed to be -0.1 to +0.1 m. However, the existing baseflow volume is much smaller than the volume of tidal inflow and outflow (26,000 m^3/d and 24,000 m^3/d respectively). Therefore, the baseflow change will lead a low impact intensity on Sungei Cina and other marine water sensitive receptors. The impact intensity on Priority 1 sensitive receptor – native-dominated freshwater swamp forest is high as the baseflow is the main water source besides stormwater and the change in baseflow will affect the ecosystem of the highly sensitive native-dominated freshwater swamp forest and stream significantly. The potential impact consequence is classified as imperceptible to high; while the likelihood is considered medium for all sensitive receptors. The significance of baseflow reduction impact on these sensitive receptors is assessed to be minor to major.

During operational phase of Option A of the proposed road development, as the worksite is planned to locate across freshwater swamp forest, the impact intensity for freshwater swamp is considered high as change in existing land use from the proposed road may significantly reduce subsurface freshwater flow into the native-dominated freshwater swamp forest and stream. The impact intensity from the baseflow reduction for other sensitive receptors is low. As baseflow reduction will vary during dry and wet season, the likelihood for all sensitive receptors is considered medium. The impact significance for the native-dominated freshwater swamp forest is major and for other sensitive receptors is minor.

For Option B of the proposed road development, as the worksite will partially affect the buffer zone of proposed core conservation area, the impact intensity of baseflow change will be low to the native-dominated freshwater swamp forest. And for other sensitive receptors, the impact intensity is categorised to be low. The impact consequence to the native-dominated freshwater swamp forest is medium and imperceptible to low impact consequence for other sensitive receptors. The baseflow reduction is of low to medium likelihood to all sensitive receptors as baseflow change may vary during different seasonal periods. The significance of impact is assessed to be minor for all sensitive receptors.

The overall significance from baseflow reduction impact on all sensitive receptors is assessed to range from minor to major.

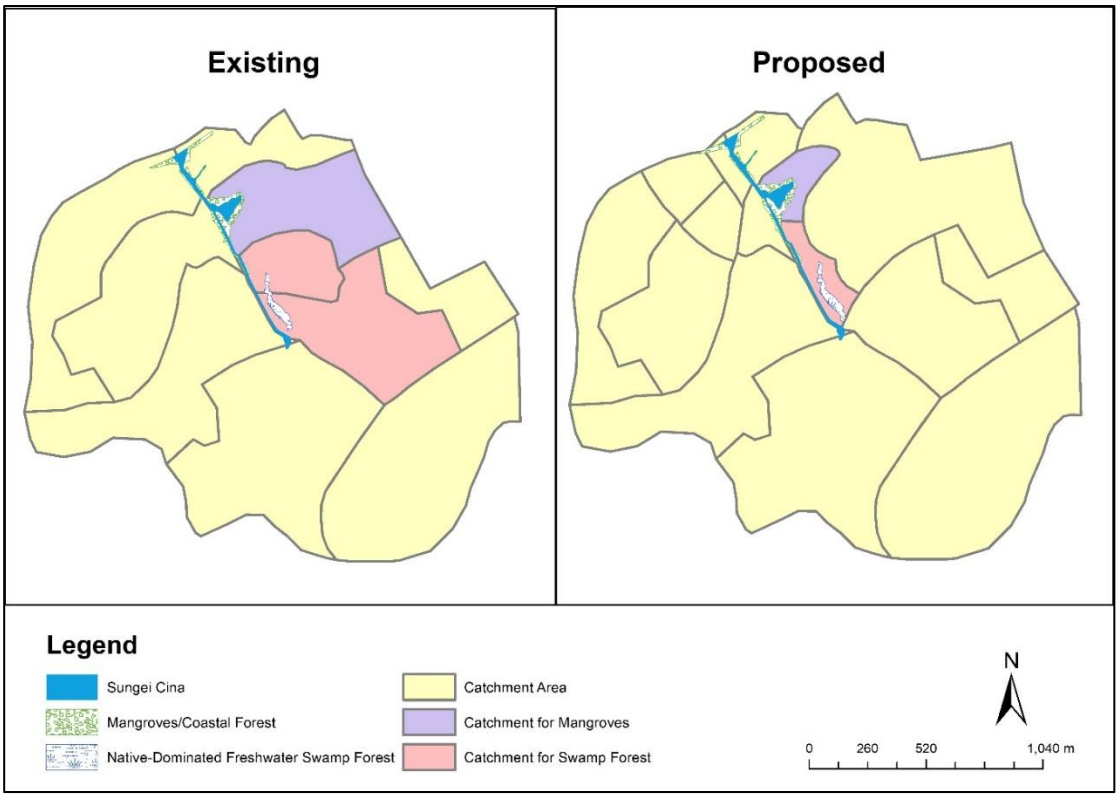


Figure 104: Existing and Proposed Catchment Areas within the Core Study Area

8.4.6.2.2 Hydrodynamic Changes due to Additional Flow Diverted from Adjacent Catchments

Catchment boundaries and run-off routing were determined using drainage concept plans, existing catchment map, and various other secondary data provided by HDB. Information were imported into GIS to establish catchment boundaries and calculate catchment properties (area, width, etc). With satellite images from Google Earth and guidelines from the Code of Practice on Surface Water Drainage by PUB, the percentage of impervious area, the properties of impervious and non-impervious areas were assigned for each catchment. Other catchment topographical characteristic (i.e. slope, elevation) were determined by using GIS to develop a slope map from online retrieved digital elevation map. A topographic survey commissioned by AECOM provided detailed topographical information within the core study area. The primary data from this was used to formulate the morphology of Sungei Cina in order to identify potential flooding areas and analyse water level at different sections of the stream. The existing and proposed catchment areas within the core study area are shown in Figure 105.

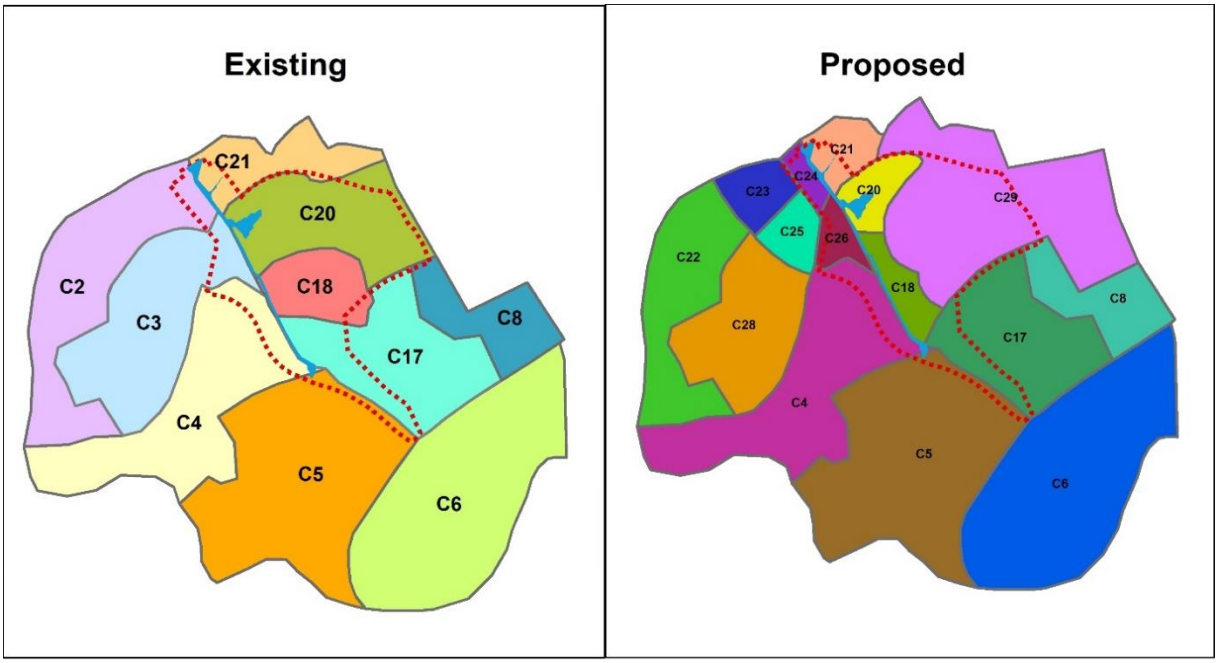


Figure 105: Existing (left) and Proposed (right) Catchment Areas within the Core Study Area

With reference to Section 8.4.1, two options are proposed for stormwater diversion from adjacent sub-catchments to Sungei Cina (refer to Figure 98 and Figure 106 for the location of the two proposed discharge outlets). Due to topographic challenges towards the north of Admiralty Road West, the drainage of the RTS development is proposed to discharge westwards into Sungei Cina. As the proposed run-off discharge options may affect the existing flow capacity of Sungei Cina and cause flooding to the surroundings and impact the mangroves in Sungei Cina, it is crucial to assess the impact of these options on Sungei Cina's flow capacity and water quality.

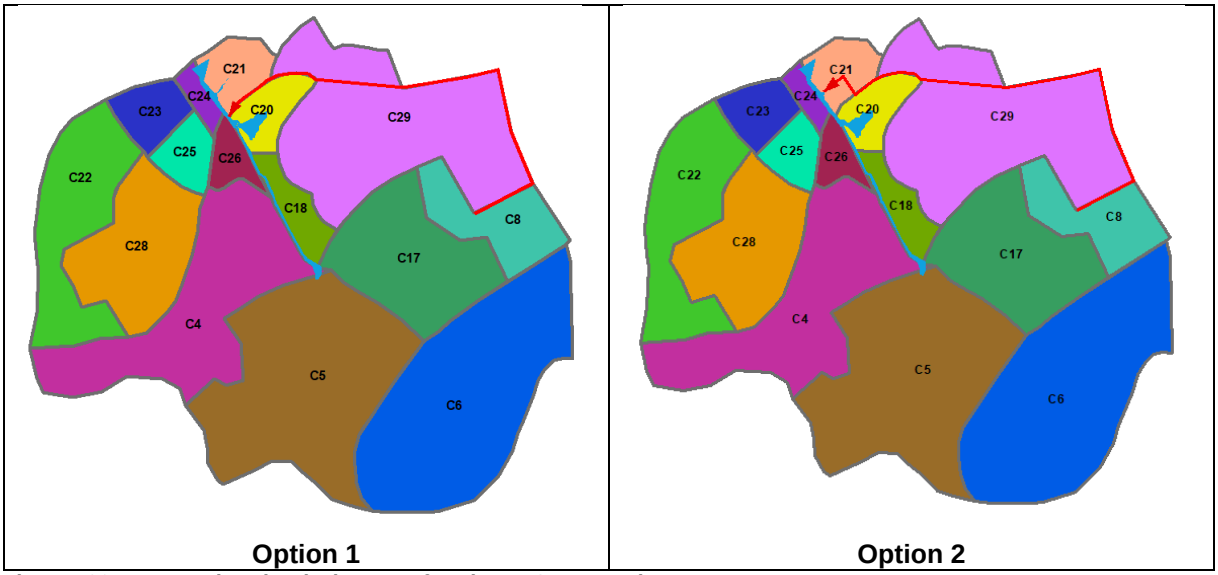


Figure 106: Proposed Drain Discharges of Drainage Concept Plan

The results generated from the SWMM model developed to compare the flow discharge of the existing and proposed catchment for a 25-year storm event are presented in Figure 107. The peak discharge is 164 m^3/s and 177 m^3/s for the existing and proposed catchment areas, respectively. The discharge flow

from the proposed catchment area is higher than the one from the existing catchment area, with a difference of 13 m^3/s.

For a better understanding of the hydrodynamic conditions in Sungei Cina for both scenarios (i.e. existing and proposed catchment areas), the Delft3D hydrodynamic model was applied and covered different downstream tidal conditions.

Figure 108 shows a typical 19-day Spring-Neap tidal cycle at Singapore Strait. Four scenarios of high and low waters during both Neap and Spring Tides were simulated for a 9-hour simulation run. To achieve the extreme conditions, the inflows from tributaries and the downstream tidal flow were adjusted to have the peak flow from tributaries and tidal peak simultaneously to obtain potential highest water level along Sungei Cina. Detailed description of the model set-up is presented in **Appendix Q**.

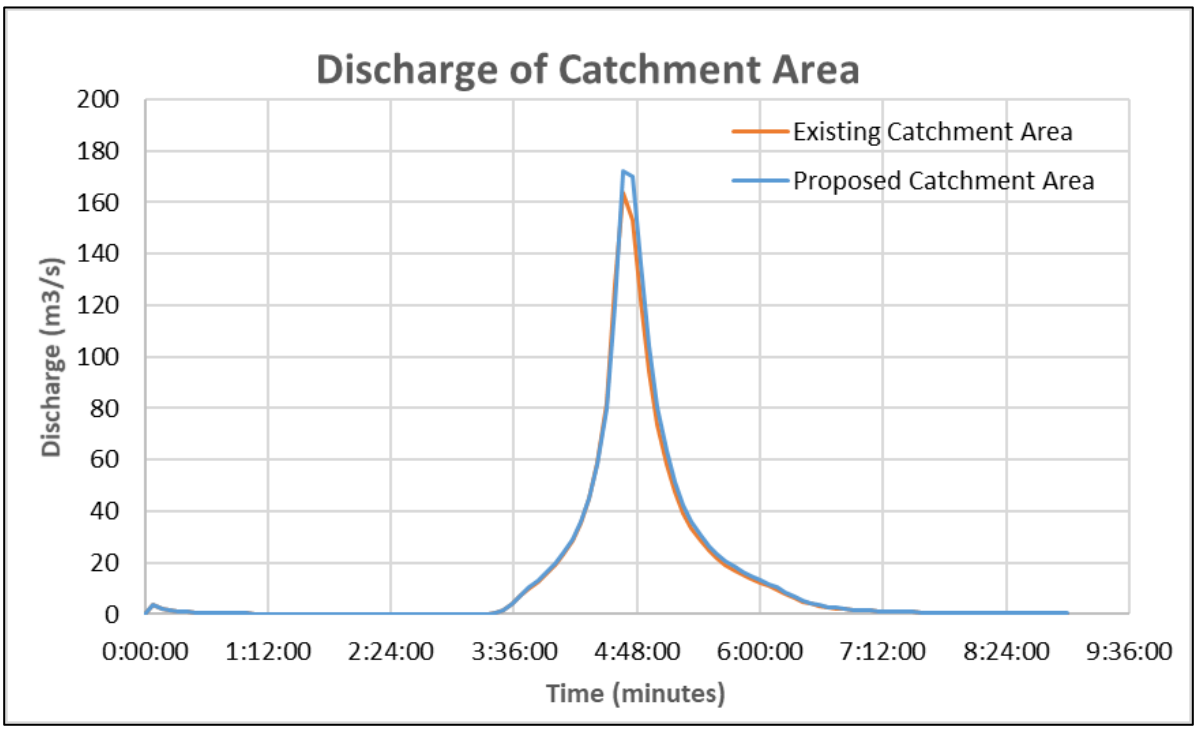


Figure 107: Discharges of Existing and Proposed Catchment Area

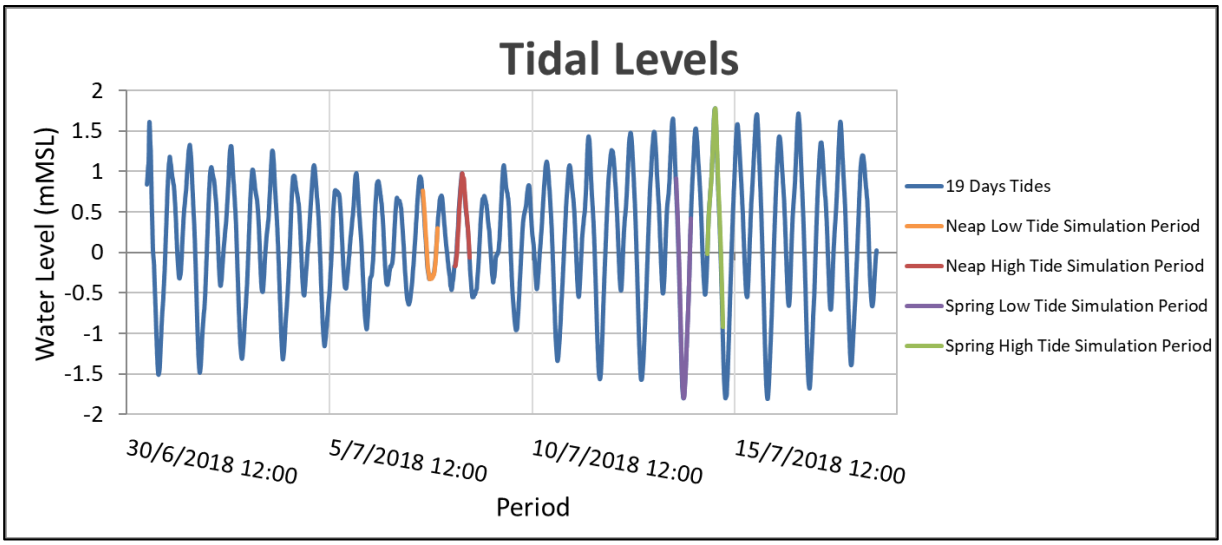


Figure 108: Discharges of Existing and Proposed Catchment Area

The impacts on hydrodynamics from additional drainage diversion were analysed based on the following parameters:

A. Impact on Water Level
B. Impact on Depth Averaged Velocity
C. Impact on Salinity Concentration

As the modelling results were similar for the four scenarios (Option 1 or Option 2 under Neap or Spring High Tide conditions), only results of Neap/Spring High Tide scenarios (extreme case scenario) are presented in this report. Simulation results of all the other scenarios can be found in **Appendix Q**.

A. Impact on Water Level

Neap High Tide – OPTION 1

Water level assessment was conducted for two drainage diversion options. For Option 1, the simulated water levels at peak flow for existing and proposed conditions during Neap High Tide are shown in Figure 109. For both existing and proposed catchment areas (i.e. existing and proposed conditions), during the 25-year storm event, the flow direction is mainly from upstream toward downstream even during high tide condition. In general, the maximum water level of the proposed condition was higher than that of the existing condition. Besides, the water accumulated at the east bank area of mid-stream of Sungei Cina (as shown with the black-circled area in Figure 109). The area is mostly a low-lying area and the bed elevation is below 0.2mMSL. While comparing the existing and proposed conditions, there is an increase of 0.8m in the water level at the black-circled area (refer to Figure 110). The change between the existing and proposed catchment areas shows a water level increase from upstream to downstream of Sungei Cina, ranging from 0.11m to 0.88m.

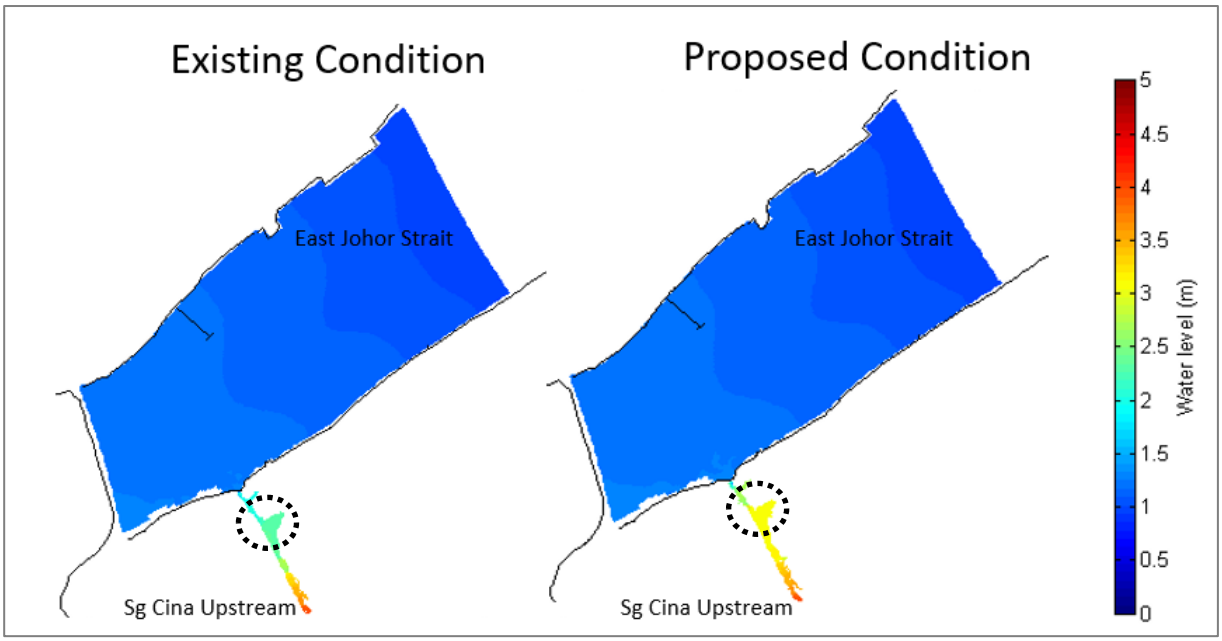


Figure 109: Simulated Water Levels at Peak Flow during Neap High Tides (for Option 1)
Note: water level in mSL

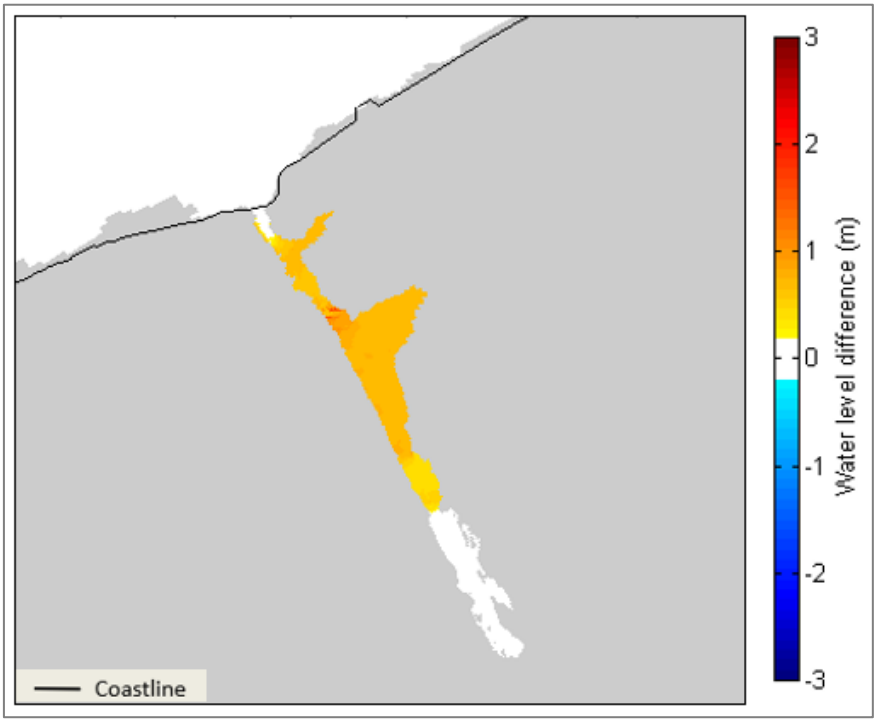


Figure 110: Water Level Change between the Existing and Proposed Catchment Areas (for Option 1)

Neap High Tide – OPTION 2

For Option 2, the change in water level between the existing and proposed catchment areas during Neap High Tide is lower compared to Option 1, as shown in Figure 112. For Option 1, the change in water level at the mangrove area is up to 0.75m; while for Option 2 it is approximately 0.70m. Thus, Option 2 is the preferred option as it tends to have less impact on the increase of water level in Sungei Cina.

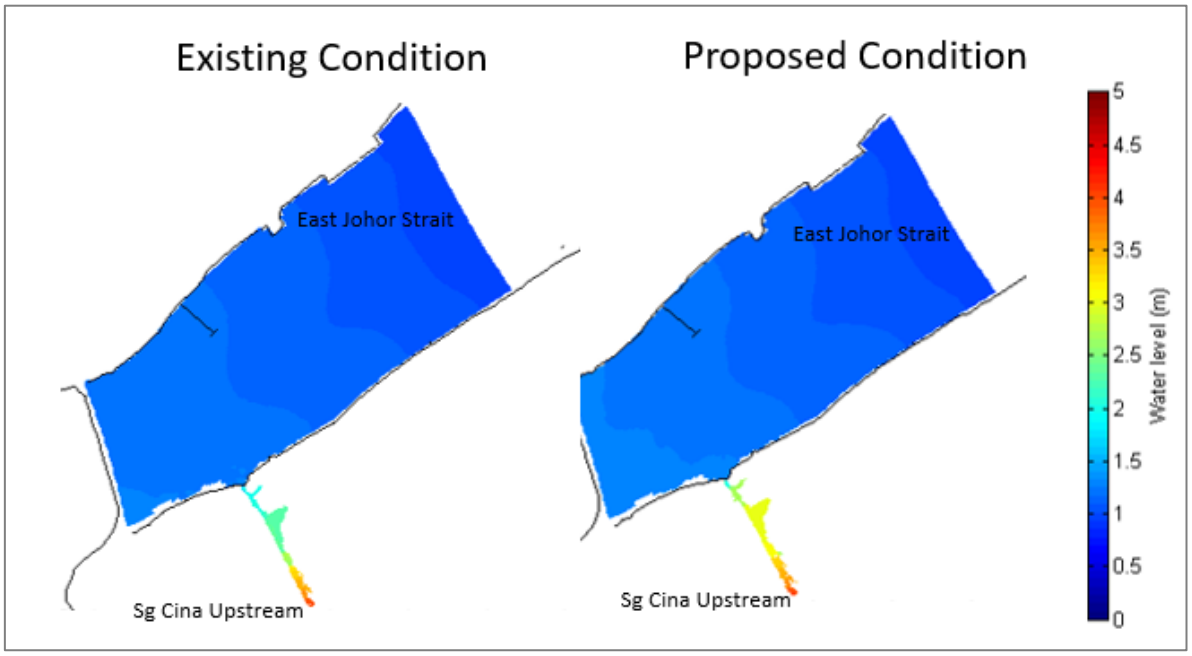


Figure 111: Simulated Water Levels at Peak Flow during Neap High Tides (for Option 2)
Note: water level in mSL

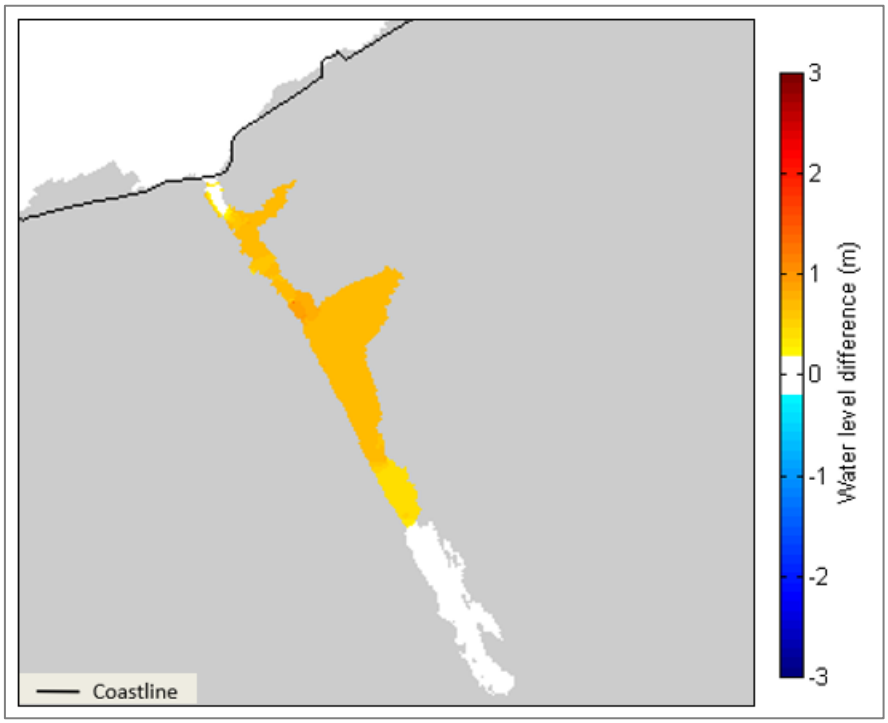


Figure 112: Water Level Change between the Existing and Proposed Catchment Areas (for Option 2)

Spring High Tide – OPTION 1

As shown in Figure 113, overflow on both river sides is observed at the area near upstream of Sungei Cina for both the existing and proposed catchment areas. As Option 1 cause a higher water level change along Sungei Cina than Option 2, further analysis was carried out on overflow condition for Option 1 with the highest water level (i.e. during Spring High Tide, refer to Figure 113). The depths of west and east banks were compared (refer to **Appendix Q** for more details). The comparison suggests that overflow

will occur at similar area (S1 and S2) for both the existing and proposed catchment areas. At upstream area, the water depths at overflowed west and east riverbanks were more than 0.4m. The overflowed water level at the east bank along the existing pathway increased by 0.01m - 0.02m under proposed condition when compared with existing condition. Overflow also occurred at S2 location and water depths ranged between 0.22m – 0.44m for both existing and proposed conditions. Overall, overflow condition will happen under both existing and proposed conditions during return of 25-year storm event.

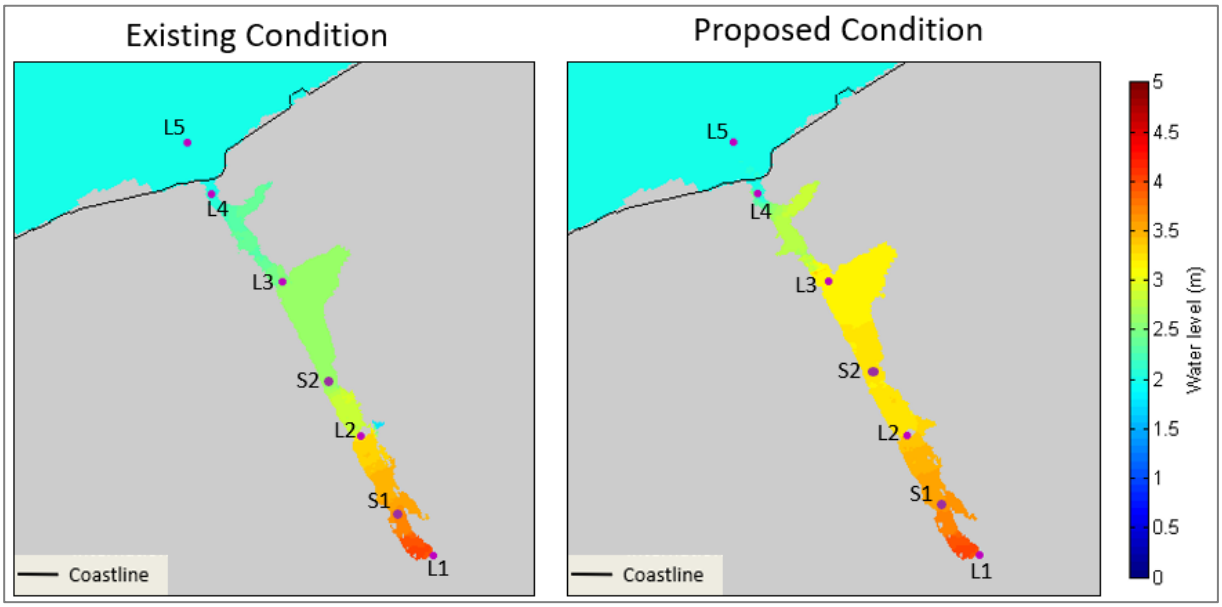


Figure 113: Existing and Proposed Conditions during Spring High Tides
Note: water level in mSL

Given that flooding occurred at the upstream of Sungei Cina, the intensity of water level change is considered medium. The impact consequence on all water receptors is classified as low to medium. The likelihood of 25 years storm period is unlikely. Therefore, the overall significance of water level change impact on Sungei Cina is negligible to minor. However, we recommend to study flooding mitigation measures and apply them along Sungei Cina to ensure the river can cope with the 25-year flood for both the existing and future conditions.

In term of potential hydrological impacts for Option 1 and Option 2, Option 1 might have slightly higher impact than Option 2 as the maximum water level in Option 1 is higher. The discharge point to Sungei Cina is further inland in Option 1, resulting in higher interaction between the flood flow, the mangroves and aquatic life in Sungei Cina. For Option 1, proposed drainage can further reduce upstream discharge, but it may cause ecological impact to core study area as the construction of drainage needs to cut through mangroves area to reach desired discharge outlet. Detailed study shall be carried out for proposed drainage alignment. While for Option 2, the construction for proposed drainage is much simpler and this alternative may be more time and cost effective.

B. Impact on Depth Averaged Velocity

Option 1 was selected to further assess the impact on the depth average velocity as it corresponds to the extreme scenario. With Option 1, the depth averaged velocity of proposed condition along the river is dominantly lower during peak discharge compared to existing condition. As the simulated water level found along Sungei Cina was higher during Neap High Tides compared to other tides scenarios, Neap

High Tides scenario was simulated as the extreme case to compare the difference in maximum depth average velocity between existing and proposed conditions (refer to Figure 114). According to the common practice of tolerance limit of current speed of navigation (refer to **Appendix Q**), the increase of current speed in navigation and berthing areas should be less than 1.28m/s and 1.8m/s, respectively. The significant change in velocity is mostly found near river mouth area which can be up to 2m/s. Since the river mouth area of Sungei Cina is not within the main navigation channel of the Johor Strait and the changes only occurred temporarily at peak flow of the 25-year storm event, the impact intensity of changes to depth averaged velocity is low. The impact consequence to all water sensitive receptors is classified as imperceptible to low. As the occurrence of 25-year storm event is unlikely, the overall significance of changes in average velocity of Sungei Cina is negligible. Even though the increase in velocity was observed mainly at the river mouth, proper shoreline and riverbed protection measures are still recommended at the outlet of Sungei Cina to prevent from local scouring during historical storm event.

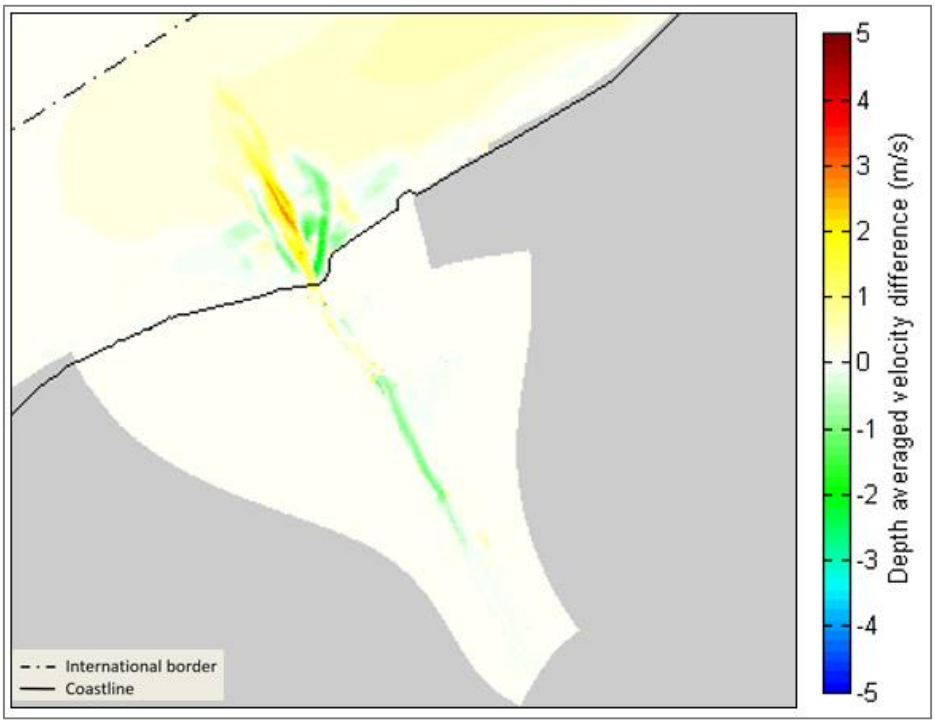


Figure 114: Maximum Depth Averaged Velocity Change between the Existing and Proposed Conditions (the alignment of International Border: sourced from OneMap, 2021)

C. Impact on Salinity Concentration

Option 1 was selected to further assess on the impact on the salinity as it will present the extreme scenario. Neap High Tides was selected as extreme case due to the simulated water level found along Sungei Cina was higher during Neap High Tides compared to other tides scenarios. During the Neap High Tides, which represented the extreme case, the salinity concentration for the proposed condition was slightly higher compared with existing condition. When the 25-year storm event was simulated, the salinity concentration drastically decreased along the river to the strait for both existing and proposed conditions. The mangroves area might experience short term of imbalance of salinity during storm event. In fact, this phenomenon will always happen when there is a heavy storm event which will generate large amount of freshwater from tributaries draining to Sungei Cina.

The salinity changes only occurred temporarily at peak flow of the 25-year storm event. The simulated increasing in salinity level only occurs at mangroves and strait area as shown in Figure 115. Sensitive receptor such as mangroves are tolerant to a wide salinity range (Ng and Sivasothi, 1999). Thus the impact intensity on salinity concentration to all sensitive receptors is low. The impact consequence to all water sensitive receptors is classified as imperceptible to low. Since the occurrence of 25-year storm event is unlikely, the overall significance of changes in salinity concentration of Sungei Cina is negligible.

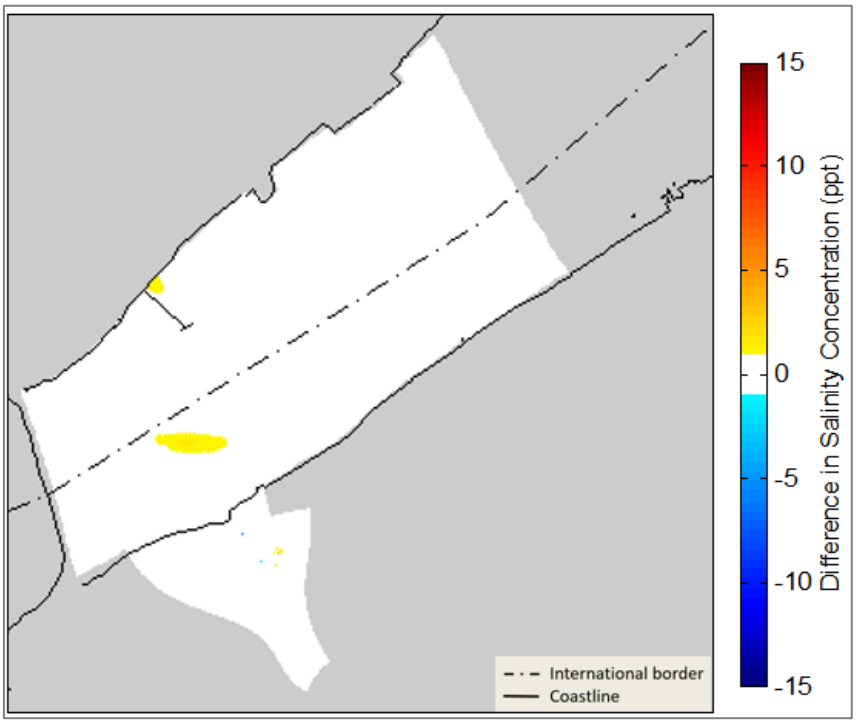


Figure 115: Difference in Maximum Salinity Concentration for Existing and Proposed Conditions (the alignment of International Border: sourced from OneMap, 2021)

8.4.6.3 Summary of Impact Evaluation during Operational Phase

Table 61: Summary of Impact Evaluation during Operational Phase for Proposed Development

Environmental Impact	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
Changes in Water Quality	Mangroves / Coastal Forest (Priority 1)	Negligible	Low	Medium	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Negligible	Low	Medium	Minor
	Sungei Cina (Priority 2)	Negligible	Imperceptible	Medium	Minor
	Aquatic Life (Priority 2)	Negligible	Imperceptible	Medium	Minor
	Marine Facilities (Priority 3)	Negligible	Imperceptible	Medium	Minor
	International Border (Priority 3)	Negligible	Imperceptible	Medium	Minor

Environmental Impact	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
Baseflow Reduction	Mangroves / Coastal Forest (Priority 1)	Low	Low	Medium	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	High	High	Medium	**Major**
	Sungei Cina (Priority 2)	Low	Low	Medium	Minor
	Aquatic Life (Priority 2)	Low	Low	Medium	Minor
	Marine Facilities (Priority 3)	Low	Imperceptible	Medium	Minor
	International Border (Priority 3)	Low	Imperceptible	Medium	Minor
Hydrodynamics Changes due to Additional Flow Diverted from Adjacent Catchments					
Water Level	Mangroves / Coastal Forest (Priority 1)	Medium	Medium	Unlikely	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Medium	Medium	Unlikely	Minor
	Sungei Cina (Priority 2)	Medium	Medium	Unlikely	Minor
	Aquatic Life (Priority 2)	Medium	Medium	Unlikely	Minor
	Marine Facilities (Priority 3)	Medium	Low	Unlikely	Negligible
	International Border (Priority 3)	Medium	Low	Unlikely	Negligible
Depth Averaged Velocity	Mangroves / Coastal Forest (Priority 1)	Low	Low	Unlikely	Negligible
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Unlikely	Negligible
	Sungei Cina (Priority 2)	Low	Low	Unlikely	Negligible
	Aquatic Life (Priority 2)	Low	Low	Unlikely	Negligible
	Marine Facilities (Priority 3)	Low	Imperceptible	Unlikely	Negligible
	International Border (Priority 3)	Low	Imperceptible	Unlikely	Negligible
Salinity Concentration	Mangroves / Coastal Forest (Priority 1)	Low	Low	Unlikely	Negligible
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Unlikely	Negligible

Environmental Impact	Sensitive Receptor	Impact Intensity	Consequence	Likelihood	Significance
	Sungei Cina (Priority 2)	Low	Low	Unlikely	Negligible
	Aquatic Life (Priority 2)	Low	Low	Unlikely	Negligible
	Marine Facilities (Priority 3)	Low	Imperceptible	Unlikely	Negligible
	International Border (Priority 3)	Low	Imperceptible	Unlikely	Negligible

Table 62: Summary of Impact Evaluation during Operational Phase for Option A of the Proposed Road

Environmental Impact	Sensitive Receptor	Intensity	Consequence	Likelihood	Significance
Changes in Water Quality	Mangroves / Coastal Forest (Priority 1)	Negligible	Low	Medium	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Negligible	Low	Medium	Minor
	Sungei Cina (Priority 2)	Negligible	Imperceptible	Medium	Minor
	Aquatic Life (Priority 2)	Negligible	Imperceptible	Medium	Minor
	Marine Facilities (Priority 3)	Negligible	Imperceptible	Medium	Minor
	International Border (Priority 3)	Negligible	Imperceptible	Medium	Minor
Baseflow Reduction	Mangroves / Coastal Forest (Priority 1)	Low	Low	Medium	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	High	High	Medium	**Major**
	Sungei Cina (Priority 2)	Low	Low	Medium	Minor
	Aquatic Life (Priority 2)	Low	Low	Medium	Minor
	Marine Facilities (Priority 3)	Low	Imperceptible	Medium	Minor
	International Border (Priority 3)	Low	Imperceptible	Medium	Minor

Table 63: Summary of Impact Evaluation during Operational Phase for Option B of the Proposed Road

Environmental Impact	Sensitive Receptor	Intensity	Consequence	Likelihood	Significance
Changes in Water Quality	Mangroves / Coastal Forest (Priority 1)	Negligible	Low	Medium	Minor
	Native-dominated Freshwater Swamp Forest	Negligible	Low	Medium	Minor

Environmental Impact	Sensitive Receptor	Intensity	Consequence	Likelihood	Significance
	and Freshwater Stream (Priority 1)				
	Sungei Cina (Priority 2)	Negligible	Imperceptible	Medium	Minor
	Aquatic Life (Priority 2)	Negligible	Imperceptible	Medium	Minor
	Marine Facilities (Priority 3)	Negligible	Imperceptible	Medium	Minor
	International Border (Priority 3)	Negligible	Imperceptible	Medium	Minor
Baseflow Reduction	Mangroves / Coastal Forest (Priority 1)	Low	Low	Medium	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream (Priority 1)	Low	Low	Low	Minor
	Sungei Cina (Priority 2)	Low	Low	Medium	Minor
	Aquatic Life (Priority 2)	Low	Low	Medium	Minor
	Marine Facilities (Priority 3)	Low	Imperceptible	Medium	Minor
	International Border (Priority 3)	Low	Imperceptible	Medium	Minor

8.5 Recommended Mitigation Measures

In this section, mitigation measures are proposed to further minimise the adverse impacts on the environment where impact significance were assessed to be moderate or major. The reduction in baseflow and increase in sediment loadings during construction and operational phase will cause major impact significance to the native-dominated freshwater swamp forest and freshwater stream. The baseflow reduction and increase in sediment loadings during construction phase were also assessed to cause significant major impact on Sungei Cina and aquatic life, with the implemented minimum controls.

For the other water sensitive receptors, hydrological and water quality impacts were assessed to be negligible to minor. Thus, no additional management or mitigation measures other than the minimum controls identified and incorporated in the construction and operational plans are required.

8.5.1 Measures to Mitigate Impacts on the Native-Dominated Freshwater Swamp Forest and Stream

The impact of baseflow reduction or increase sediment loads during construction or operational phases of the proposed development and Option A of the proposed road will be of major significance to Priority 1 sensitive receptor (i.e. native-dominated freshwater swamp forest and freshwater stream). As such, recommendations, on top of the identified minimum controls to be incorporated in the construction and operational plans, shall be proposed to reduce the impact from the development on the core study area to an acceptable level (negligible to minor significance).

In order to maintain the freshwater supplying to the native-dominated freshwater swamp forest and to preserve it in its existing condition, the recommended mitigation measures is for the diversion of freshwater from the existing underground drain to native-dominated freshwater swamp forest (refer to Figure 116).

Stormwater run-off from the development will probably contain high amounts of sediment and pollutants that may have a significant impact on the water quality feeding into the native-dominated freshwater swamp forest. To ensure the quality of diverted water flowing to the native-dominated freshwater swamp forest, green landscape features (such as bioswales or rain gardens) can be implemented to filter the water before it discharges into the forested area. These green features can act as natural filters to remove the undesirable sediments and pollutants in the water. Green features should be carefully designed to ensure that it is able to bear the first flush of stormwater run-off, which is the initial run-off that generally has a significantly higher concentration of pollutants than run-off released later during a storm event.

The average baseflow reduction of 1.1 m^3/d during the construction phase and 3 m^3/d (worst case scenario) during the operational phase to the native-dominated freshwater swampy forest area (refer to Table 83 and Table 88 respectively) should be replenished through this diversion of stormwater run-off. The proposed flow rate shall be equivalent to the daily baseflow reduction during the respective phases to replenish and maintain the freshwater supply to the native-dominated freshwater swamp forest area. Monitoring of the flow rate at the filtration features is recommended to make sure that enough freshwater reaches the swampy forest and to avoid the possibility of excessive water contribution.

During dry season, freshwater could still be diverted from existing drain as shown in Figure 116 to supply baseflow to the native-dominated freshwater swamp forest. The comparison of the water quality (refer to Section 8.3.2) between the freshwater pond (WQ1) and the natural stream (WQ6-1 and WQ6-3) indicates that the water from the pond is of suitable quality to feed the swamp area. Similarly, the flow rate of this option should replenish the daily baseflow reduction impacting the swamp forest during the construction and operational phases.

In order to cater to the baseflow reduction to the freshwater stream due to proposed development and Option A of the road development, it is recommended for stormwater from part of the proposed development, shaded in orange in Figure 117, to be diverted through proposed cut-off drains to the freshwater stream. For this measure, it is recommended that the new peak flow of the freshwater stream during operational phase is the same or less than the existing peak flow. Besides, detailed hydrological and erosion control study should be conducted before construction of proposed development to prevent erosion occurrence along the stream due to stormwater discharged from the proposed development and surrounding sub-catchment. Any proposed road structure should avoid being located in the freshwater stream so as to prevent dredging or pilling works at the stream.

As recommended, the alignment of proposed road should avoid the proposed core conservation area as much as possible.

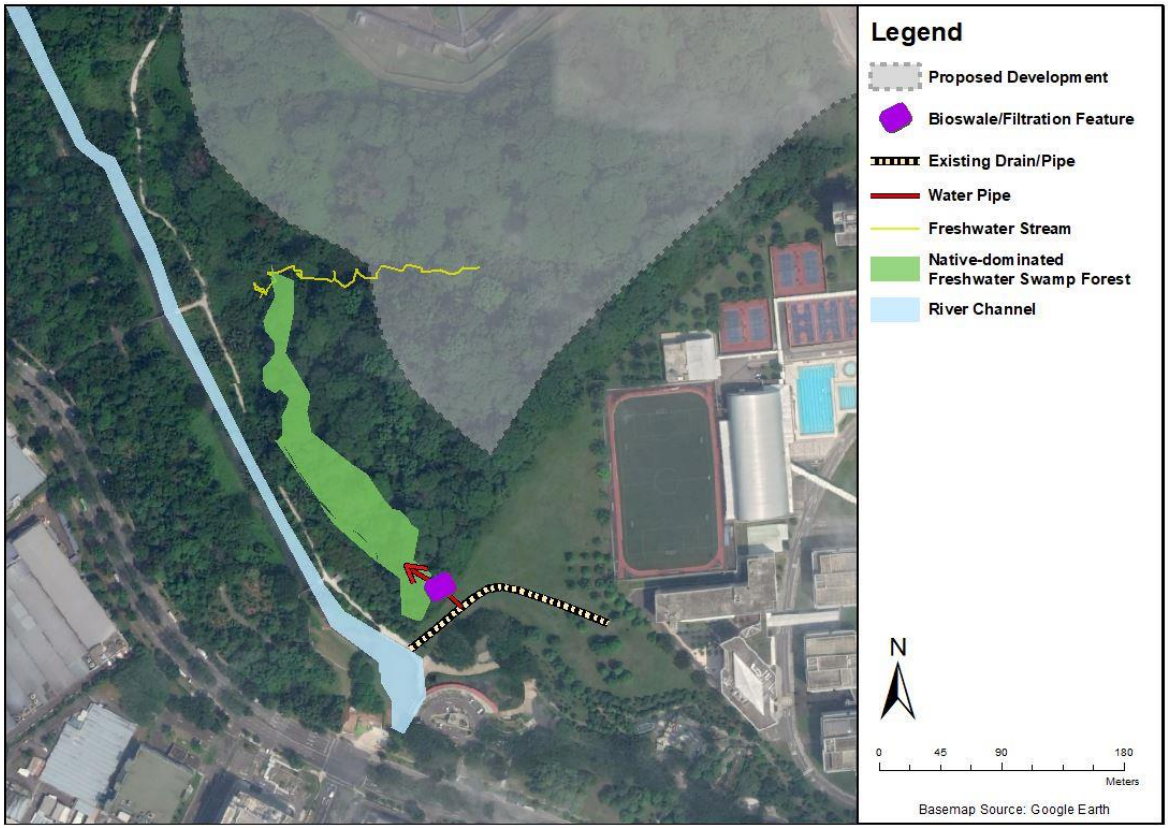


Figure 116: Diversion of Stormwater from Existing Drain

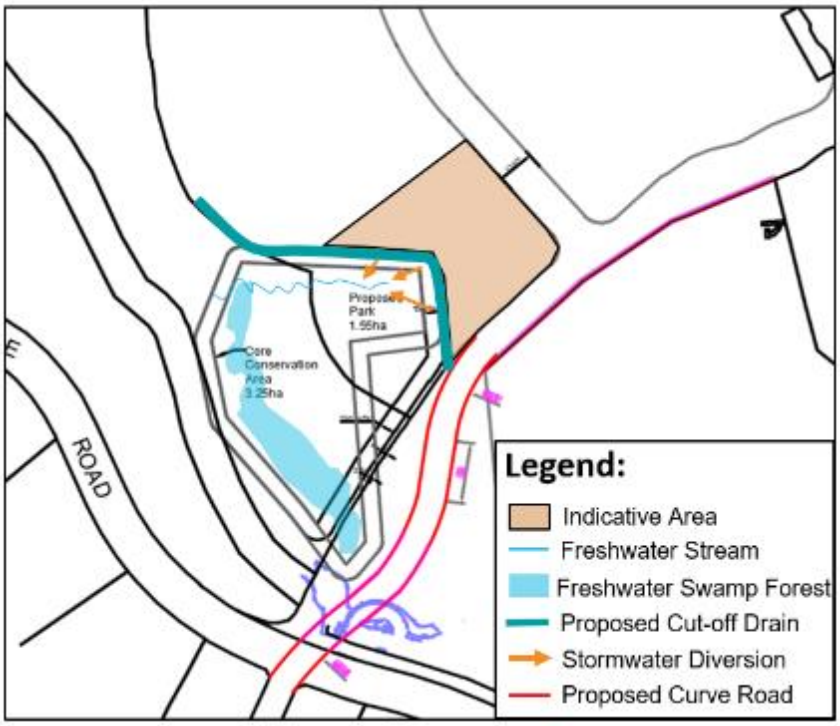


Figure 117: Stormwater Diversion from Proposed Cut-off Drain of Proposed Development

8.5.2 Measures to Mitigate Impacts on Sungei Cina and Aquatic Life

Priority 2 sensitive receptor (Sungei Cina) is subjected to major impact significance due to baseflow reduction and increased in sediment loads during construction phase of both options of the road development. There is also major impact significance for Priority 2 (Aquatic Life) due to increased sediment loads impact during construction phase of both options of the road development. Apart from minimum controls that should be implemented in construction phase, appropriate recommendations shall be introduced to alleviate the impact from proposed development to the core study area and bring down the impact to an acceptable level.

In term of avoidance measures, the design of the proposed road should be altered to avoid any construction activities over/within the man-made freshwater pond and Sungei Cina. The construction of any road pier structures should not be placed in the man-made pond or Sungei Cina to avoid dredging and pilling activities in the waterbodies so that aquatic life can strive to live in Sungei Cina as the water quality of the river is not affected by anthropogenic activities.

To minimize sediment discharge from construction worksite into the upstream man-made freshwater pond of Sungei Cina, the pond should be emptied by pumping out the water into Sungei Cina during dry season before construction phase. The upstream flow entering the pond should also be diverted before the construction phase. Silt curtains should be installed at the pond to allow sediment to settle down prior to being released into Sungei Cina.

8.6 Residual Impacts

A residual impact assessment has been undertaken assuming the mitigation measures recommended in the previous section are implemented.

8.6.1 During Construction Phase

The diversion of stormwater run-off could replace and maintain the freshwater supply to the native-dominated freshwater swamp forest and freshwater stream and protect them from drying out due to the short-term reduction of baseflow. Design of peak flow, hydrological and erosion control study are also important to confirm the exact diversion flow rate into the freshwater stream and necessary diversion methods. With the implementation of the recommended mitigation measures in conjunction with the identified minimum controls, the residual impact intensity of the baseflow reduction on the freshwater native-dominated swamp forest and freshwater stream can be reduced to low during construction phase. Thereafter, the impact significance is reduced to minor.

Avoiding road construction above the freshwater pond and Sungei Cina can prevent the diminishing of water quality. For impact minimization, drying out the freshwater pond by pumping the water from pond to Sungei Cina can prevent sediment pollution to Sungei Cina directly. The impact intensity on Sungei Cina and aquatic life can be brought down to low if the recommended mitigation measures and minimum controls are taken into account and executed. The significance of residual impact is therefore reduced to minor.

Table 64: Summary of Residual Impacts and its Mitigation Measures during Construction Phase

Activity	Receptor Sensitivity	Impacts	Impact Significance	Mitigation Measures	Significance of Residual Impact
Land-use change due to the future development	Native-dominated freshwater swamp Forest and freshwater stream (Priority 1)	• Existing water quality disturbance • Reduction of baseflow due to land use change • Water contamination • Habitat disruption of flora and fauna along Sungei Cina	Major	• Diversion of stormwater run-off from the existing drain to the swamp forest • Diversion of stormwater run-off from future development to freshwater stream • Design of peak flow is lower or equal to existing peak flow for flow diversion • Detailed hydrological and erosion control study on flow diversion • Avoidance of proposed road on proposed core conservation area	Minor
Sediment loads from construction activities of proposed road	Sungei Cina (Priority 2) and Aquatic Life (Priority 2)	• Existing water quality disturbance • Water contamination • Habitat disruption of aquatic life in Sungei Cina	Major	• Avoidance of road alignment on freshwater pond and Sungei Cina • Drying out freshwater pond • Diversion of upstream flow of freshwater pond to Sungei Cina • Silt curtain installation in freshwater pond	Minor

8.6.2 During Operational Phase

In terms of baseflow reduction in the long term, the flow diversion from proposed development, existing nearby drain and pumping from freshwater pond will be beneficial in maintaining the freshwater supply to native-dominated freshwater swamp forest and stream during dry and wet season. The residual intensity of baseflow reduction will reduce to low and the impact significance on native-dominated freshwater swamp forest and stream will assess to be reduced to minor.

Table 65: Summary of Residual Impacts and its Mitigation Measures during Operational Phase

Activity	Receptor Sensitivity	Impacts	Impact Significance	Mitigation Measures	Significance of Residual Impact
• Land-use change due to the future development • Reduction of the existing water catchment area • Diversion of the stormwater discharge	Native-dominated freshwater swamp Forest and freshwater stream (Priority 1)	• Existing water quality disturbance • Reduction of baseflow due to land use change • Habitat disruption of flora and fauna along Sungei Cina • River flooding risk • Potential change in salinity during dry season due to potential change of sub-surface water discharge to Sungei Cina	Major	• Diversion of stormwater run-off from the existing drain to the swamp forest • Diversion of stormwater run-off from future development to freshwater stream	Minor

8.7 Summary of the Hydrology and Surface Water Quality Impact Assessment

Based on the assessment of the hydrology and surface water quality related impacts on the various sensitive receptors, the assessment findings have been summarised in Table 66. The proposed drainage discharge under the impact assessment of Section 8.4 was not finalised and subjected to further optimize as the agencies are working towards options that will have less impact on the Sg. Cina mangroves in the time of writing this report. If there is any significant change on drainage catchment plan of Sungei Cina in the future, additional study should be conducted accordingly when the proposed drainage discharge is finalised to address the impact on hydrology and water quality of Sungei Cina.

Table 66: Findings Summary of the Hydrology and Surface Water Quality Impact Assessment

Environmental Parameters	Description of Sensitive Receptor	Potential Environmental Impacts	Significance of Potential Impact (with minimum control)	Mitigation Measures	Significance of Residual Impacts
During Construction Phase					
Increased Sediment Loads	Mangroves / Coastal Forest at river mouth and along Sungei Cina	• Water contamination • Disturbance of existing water quality • Disruption of hydrological processes (i.e. reduction of baseflow affecting the freshwater swamp forest and stream) • Habitat disruption along Sungei Cina	Negligible to **Major**	<u>To protect the native-dominated freshwater swamp forest</u>: ➢ Diversion of freshwater from the existing drain to the swamp forest ➢ Pumping of water from the freshwater pond during dry season ➢ Diversion of stormwater run-off from future development to freshwater stream ➢ Avoidance of proposed road on proposed core conservation area ➢ Design of peak flow is lower or equal to existing peak flow for flow diversion ➢ Detailed hydrological and erosion control	Negligible to Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				
	Aquatic Life at EJS and Sungei Cina				
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				
Improper Management of Solid & Toxic Waste	Mangroves / Coastal Forest at river mouth and along Sungei Cina		Negligible to Minor		Negligible to Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				
	Aquatic Life at EJS and Sungei Cina				

Environmental Parameters	Description of Sensitive Receptor	Potential Environmental Impacts	Significance of Potential Impact (with minimum control)	Mitigation Measures	Significance of Residual Impacts
	Marine Facilities located at shoreline of EJS			study on freshwater stream	
	International Border of Singapore-Malaysia				
Improper Management of Liquid Effluents	Mangroves / Coastal Forest at river mouth and along Sungei Cina		Negligible to Minor	<u>To protect Sungei Cina and aquatic life</u>: ➢ Avoidance of road alignment on freshwater pond and Sungei Cina ➢ Drying out freshwater pond ➢ Diversion of upstream flow of freshwater pond to Sungei Cina ➢ Silt curtain installation in freshwater pond	Negligible to Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				
	Aquatic Life at EJS and Sungei Cina				
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				
Improper Management of Chemical Substances	Mangroves / Coastal Forest at river mouth and along Sungei Cina		Negligible to Minor		Negligible to Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				
	Aquatic Life at EJS and Sungei Cina				

Environmental Parameters	Description of Sensitive Receptor	Potential Environmental Impacts	Significance of Potential Impact (with minimum control)	Mitigation Measures	Significance of Residual Impacts
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				
Change in Water Bodies' Hydrology (Baseflow Reduction)	Mangroves / Coastal Forest at river mouth and along Sungei Cina		Minor to **Major**		Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				
	Aquatic Life at EJS and Sungei Cina				
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				
During Operational Phase					
Changes in Water Quality	Mangroves / Coastal Forest at river mouth and along Sungei Cina	• Water contamination • Disturbance of existing water quality • Disruption of hydrological processes (i.e. reduction of baseflow affecting the	Minor	<u>To protect the native-dominated freshwater swamp forest</u>: ➢ Diversion of stormwater run-off from the existing drain to the swamp forest	Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				

Environmental Parameters	Description of Sensitive Receptor	Potential Environmental Impacts	Significance of Potential Impact (with minimum control)	Mitigation Measures	Significance of Residual Impacts
	Aquatic Life at EJS and Sungei Cina	freshwater swamp forest and stream) • Habitat disruption along Sungei Cina • River flooding risk • Potential change in salinity during dry season due to potential change of sub-surface water discharge to Sungei Cina		➢ Pumping of water from the freshwater pond during dry season ➢ Diversion of stormwater run-off from future development to freshwater stream	
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				
Change in Water Bodies' Hydrology (Baseflow Reduction)	Mangroves / Coastal Forest at river mouth and along Sungei Cina		Minor to **Major**		Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				
	Aquatic Life at EJS and Sungei Cina				
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				
Change in Water Bodies' Hydrology (Impact on Water Level due to Additional Flow Diverted from Adjacent Catchments)	Mangroves / Coastal Forest at river mouth and along Sungei Cina		Negligible to Minor		Negligible to Minor
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				

Environmental Parameters	Description of Sensitive Receptor	Potential Environmental Impacts	Significance of Potential Impact (with minimum control)	Mitigation Measures	Significance of Residual Impacts
	Aquatic Life at EJS and Sungei Cina				
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				
Change in Water Bodies' Hydrology (Impact on Depth Averaged Velocity due to Additional Flow Diverted from Adjacent Catchments)	Mangroves / Coastal Forest at river mouth and along Sungei Cina		Negligible		Negligible
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				
	Aquatic Life at EJS and Sungei Cina				
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				
Change in Water Bodies' Hydrology (Impact on Salinity Concentration due to Additional Flow Diverted from Adjacent Catchments)	Mangroves / Coastal Forest at river mouth and along Sungei Cina		Negligible		Negligible
	Native-dominated Freshwater Swamp Forest and Freshwater Stream at East of upstream Sungei Cina				
	Sungei Cina at Woodlands North Coast				

Environmental Parameters	Description of Sensitive Receptor	Potential Environmental Impacts	Significance of Potential Impact (with minimum control)	Mitigation Measures	Significance of Residual Impacts
	Aquatic Life at EJS and Sungei Cina				
	Marine Facilities located at shoreline of EJS				
	International Border of Singapore-Malaysia				

8.8 Environmental Monitoring and Management Programme for Hydrology and Water Quality

In order to ensure that procedures are followed appropriately, the construction phase of the projects should be accompanied by an EMMP.

Hydrological conditions of drainage system within construction site and at immediate vicinity should be closely monitored during construction phase. Before draining to public drains or waterbodies, surface runoff from the construction site should be drained to the ECM treatment system to be filtered and to reduce peak runoff. The hoarding and perimeter drains should be inspected daily to ensure no surface runoff flowing out from the site untreated and no clogging which would affect the flow capacity of the drains/streams. During heavy storm event, site inspection should be carried out to ensure no flooding. Monthly audit on the site should also be carried out by EMMP consultant.

Beside the hydrological monitoring, water quality monitoring is essential as discharge of excess contaminants, especially pH, nutrients and heavy metals, may lead to severe consequences (e.g. algae blooms).

Discharges via settling ponds will take place during the construction phase, therefore monitoring of settling pond discharge waters is recommended to be undertaken to complement surface water quality to assure compliance with the relevant standards. Recommended standards/guidelines and parameters for water quality monitoring are shown in Table 67 and Table 68.

Table 67: Recommended Guidelines for Water Quality Monitoring

Aspect	Guidelines
Discharge	Singapore NEA's Allowable Limits for Trade Effluent Discharge to Sewer / Watercourse / Controlled Watercourse

Table 68: Recommended EMMP for Water Quality

Test	Parameter	Monitoring Recommendation and Frequency	Reporting Frequency
In-situ	Temperature	• Online real time monitoring for TSS with CCTV implementation at the discharge point location throughout the construction period. • Monthly monitoring for temperature, pH, turbidity salinity and DO at all the discharge point locations at the construction sites throughout construction period.	Preparation of a Monthly Compliance Report of water quality results, including assessment against guidelines and baseline report.
	pH		
	Turbidity		
	Salinity		
	Dissolved Oxygen (DO)		
	Total Suspended Solids (TSS)		
Ex-situ	Biochemical Oxygen Demand (BOD_5)	• Monthly monitoring throughout the construction period at the discharge point if discharging into public drains.	
	Chemical Oxygen Demand (COD)		
	Total Organic Carbon (TOC)		

Test	Parameter	Monitoring Recommendation and Frequency	Reporting Frequency
	Total Dissolved Solids (TDS)		
	Nitrite (as NO_2-N)		
	Ammonia (as NH_3-N)		
	Phosphate (as PO_4)		
	Total Phosphorous (TN)		
	Total Nitrogen (TP)		
	Nitrate (as NO_3-N)		
	Enterococcus		
	Chlorophyll-a		
	Oil & Grease		
	Chloride		
	Heavy Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg)		
	Iron		

9 Groundwater Impact Assessment

9.1 Introduction

This section presents the assessment undertaken to define the nature and scale of potential impacts on groundwater associated with the projects' construction and operational phase. Baseline data was collected and used as inputs into the models to determine the groundwater dependent ecosystems and assess the construction and operational impacts on groundwater. This section also outlines appropriate controls and best management practices.

9.2 Baseline Assessment Methodology

9.2.1 Groundwater Monitoring Well Installation

To understand the underlying geology, as well as the groundwater levels and quality within the core study area, monitoring wells were drilled. Four boreholes, labelled BH1 through BH4, were advanced to a maximum depth of 10m below ground surface (m bgs). These boreholes were subsequently converted into monitoring wells (of 50mm diameter), labelled MW1 through MW4 (refer to Figure 118) and were screened at various depth intervals. Following their installation, the monitoring wells were surveyed for ground level and pipe level elevations, and northing and easting coordinates were collected using SVY21 system. Monitoring well completion are presented in Figure 119 and wells' construction details are summarised in Table 69. Borehole logs are presented in **Appendix T**.

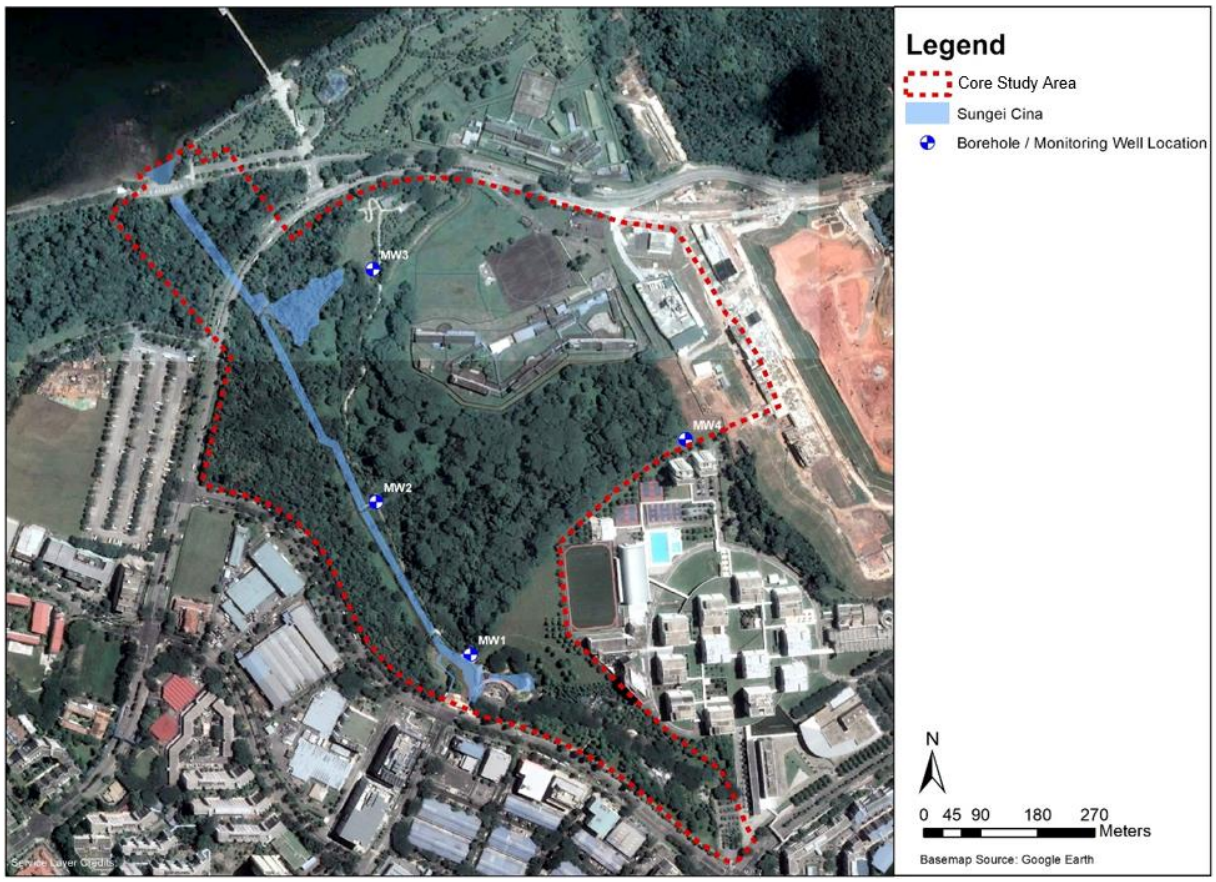


Figure 118: Location of the Groundwater Monitoring Wells

		
Drilling at MW4	**Completed monitoring well, MW1**	**Completed monitoring well, MW3**

Figure 119: Photos of the Groundwater Monitoring Well Installation

Table 69: Monitoring Well Construction Details

Monitoring Well ID	Coordinates SVY21 (m)		Elevation Top of Casing (Datum RL)	Screen Interval (M bgs)	Screened Lithology
	Northing	Easting			
MW1	47,347.1	22,210.6	104.75	0.3 – 4.0	Fill, clay & clayey sand
MW2	47,591.4	22,061.5	102.85	0.2 – 4.2	Fill, clay & clayey sand
MW3	47,963.5	22,056.3	111.92	4.5 – 9.0	Clayey sand
MW4	47,691.8	22,549.6	120.38	4.5 – 9.0	Clayey sand

9.2.2 Groundwater Gauging and Analysis

All groundwater monitoring wells were developed at least 24 hours after installation. Development of each monitoring well included purging a minimum of five (5) well volumes of groundwater or until dry, whichever was achieved first, using stainless steel bailer.

The monitoring wells were gauged for groundwater levels and presence of light non-aqueous phase liquid (LNAPL) using an intrinsically safe, oil-water interface meter prior to well purging and sample collection. Following the stabilization of in-situ physicochemical parameters, . groundwater samples were collected and analysed for the following major ions to provide indication on the nature of groundwater and its relation to the Sungei Cina and Johor Strait. A summary of the groundwater analysis is presented in Table 70.

Table 70: Summary of Groundwater Analysis

In-Situ Physicochemical Parameters	Ex-Situ Major Ion Analysis
• pH • Conductivity • Redox potential (ORP) • Dissolved oxygen (DO) • Total Dissolved Solids (TDS) • Temperature	• Sulfate • Chloride • Calcium • Magnesium • Bicarbonate Alkalinity • Sodium • Potassium • Carbonate Alkalinity

Subsequently, four rounds of groundwater gauging were conducted between June 2018 to January 2019 to monitor groundwater levels throughout the period.

An aquifer / slug test was also conducted on all four monitoring wells. During the slug test, groundwater was purged from the monitoring well, and the change in hydraulic head was monitored through time via a water level data logger to determine the hydraulic conductivity of the site.

9.2.3 Groundwater Modelling

A 1-D rainfall-recharge model to estimate recharge to the local groundwater system and a 2-layer groundwater flow model in MODFLOW (MODFLOW-USG) were performed to simulate groundwater conditions on the site and its surrounding using rainfall, evaporation data, geological mapping, soil lithology from the boreholes, measured groundwater levels from the wells and permeability testing results from the slug test. Figure 120 presents the parameters included in the development of the model.

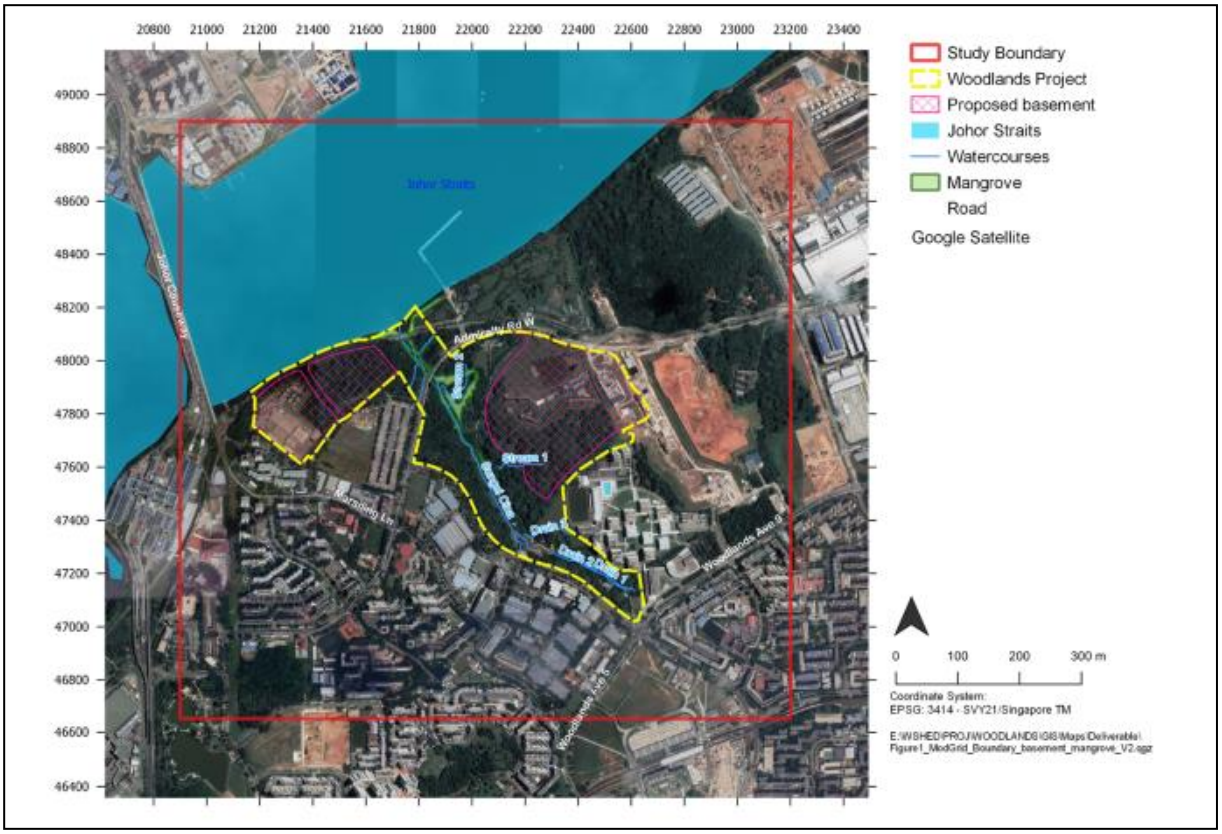


Figure 120: Parameters Considered and Grid Used for Groundwater Model

Data from the fieldwork conducted, as well as literature, were reviewed to generate the 1-D rainfall-recharge and 2-layer groundwater flow model in MODFLOW (MODFLOW-USG). A summary of the parameters and data used as inputs for the groundwater modelling is presented in Table 71.

Table 71: Parameters and Data used as Inputs for the Groundwater Model

Parameter	Source	Input Data used for the Groundwater Model
Rainfall	*Meteorological Service Singapore, 2019*	• Daily rainfall from 1 January 2009 to present day from Admiralty Station was used.
Evaporation	*Parasuraman et al, 2010*	• Evaporation measured in Singapore reservoirs is approximately 1825 – 2190 mm/year, equivalent to an average of 5.5 mm/day.
Evapotranspiration and Rooting Depths	*Kosa, 2011;* *Canadell et al, 1996;* *Whelan et al, 2005*	• Evapotranspiration ranges from 3.67 – 4.26 mm/day during the dry season in other tropical environments. • Rooting depths are approximately 7.3 (+/- 2.8) m for tropical evergreen forests, 2.6 (+/- 0.1) m for herbaceous plants and 0.35 m for mangroves.
Geology	Fieldwork; *Woon and Yingxin, 2009;* *Survey Department Singapore, 1997*	• Primarily underlain by Bukit Timah Granite, which has a thickness of 30m throughout Singapore. • Main soil types in the core study area include Rengam (Rm), Tengah (Tg), and Kranji (Kj) which form above the weathered Bukit Timah Granite (BT) and the Alluvial (Ka) and Transitional Members (Kt) of the Kallang Formation.
Land Use and Infiltration Recharge	*Aerial Photography;* *Chui and Trinh, 2016* *Baseline Data from Ecological Survey*	• Land use has been classified to 'natural', 'urbanised' and 'restored' areas as per Chui and Trinh (2016) based on aerial photography and site surveys:  Annual infiltration of the different land uses are as follows: • Natural (Forest, mangrove, parklands and sparse trees): 586 mm/year or approximately 26% of annual rainfall • Urban (Infrastructure, buildings, roads): 175 mm/year or approximately 8% of annual rainfall • Restored landscape: 1355 mm/year or approximately 60% of annual rainfall

Parameter	Source	Input Data used for the Groundwater Model
Groundwater Levels	Fieldwork	• Groundwater levels were monitored periodically with an oil-water interphase meter.
Hydraulic Conductivity	Fieldwork; Bouwer and Rice (1976); Hvorslev (1951)	• Bouwer and Rice (1976) and Hvorslev (1951) methods were used to analyse falling head test results (refer to **Appendix S**).

9.3 Baseline Environment

9.3.1 Analysis of Topography Information

9.3.1.1 Existing Topography

The core study area is characterized by a sloping hill in the eastern portion and undulating terrain in the rest of the core study area. The highest elevation point is around 135 m reduced level (RL) based on the topographic survey conducted in 2018 as part of this study and the lowest point is Sungei Cina, with a surface elevation of around 100 m RL. The hill slopes down from east to west, reaching the banks of Sungei Cina at elevations between 101 m to 104 m RL. From Sungei Cina to the west boundary of the core study area, the terrain slopes up to 108 m RL (refer to Figure 121).

The southern portion of the core study area is observed to have slightly higher elevation (111 m to 115 m RL) relative to the northern portion (103 m to 107 m RL).

Other low-lying features in the core study area include a wetland/marsh in the northern and a freshwater pond connected to the southern end of Sungei Cina.

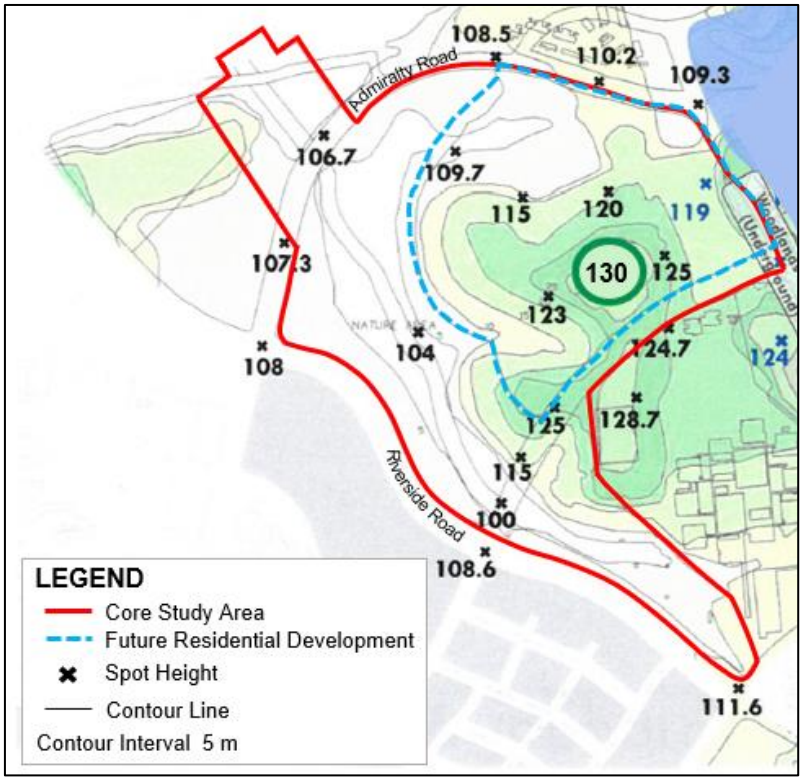


Figure 121: Existing Topography of the Core Study Area and Road Levels

9.3.1.2 Planned Development Platform

The planned development platform of the future residential development and road development is shown in Figure 122. As per the information provided by HDB, the planned residential flats will have 1.5 storey foundation depth and basements will be considered within the parcels edged in red. Trees within the red boundary will be removed and soils will be excavated to meet the desired platform levels.

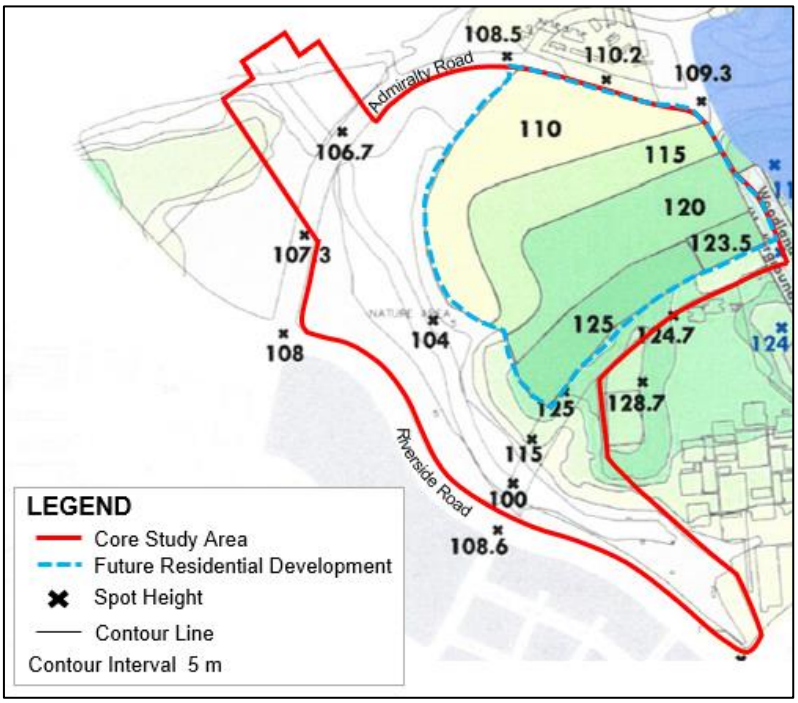


Figure 122: Proposed Topography and Platform Levels

9.3.2 Groundwater Levels

Based on the gauging data from the four (4) monitoring wells installed in the core study area in the period between June and September 2018, the average stabilized groundwater level (SWL) elevation beneath the site ranges between 102.645 m RL in MW2 (along midstream Sungei Cina) to 117.910 m RL in MW4 (elevated eastern side). The SWL from the four gauging sessions are presented in Table 72 and Figure 123.

Table 72: Groundwater Elevation Data

Monitoring Well	Top of Well Elevation (m)	Groundwater Elevation (m)				
		Jun 2018	Aug 31, 2018	Sep 3, 2018	Jan 15,2019	Average
MW1	104.750	103.764	103.511	103.508	103.620	103.600
MW2	102.850	102.650	102.696	102.583	102.580	102.627
MW3	111.920	109.020	107.592	107.53	108.020	108.040
MW4	120.380	118.650	117.195	117.146	118.080	117.767

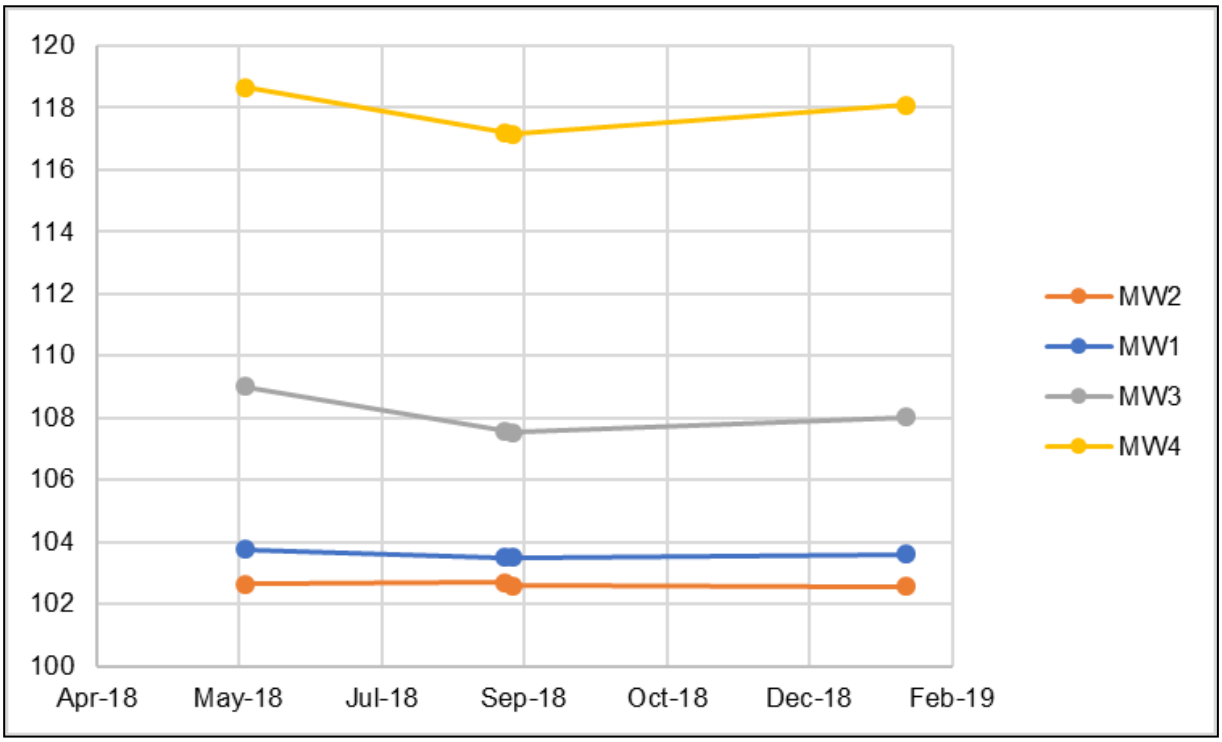


Figure 123: Groundwater Elevation Data

Slight decreases in groundwater levels were observed in MW3 and MW4 from the June to September 2018 period with observed marginal increase in January 2019. Little variation in groundwater levels were observed in MW1 and MW2 over the same period.

Based on the existing groundwater levels, the inferred groundwater flow direction is in the west-southwest towards Sungei Cina. No groundwater monitoring wells were installed west of Sungei Cina, but groundwater is inferred to flow eastward toward Sungei Cina. Groundwater in areas near the Straits of Johor are expected to flow towards the sea. Based on the inferred groundwater flows, there is no significant changes on how groundwater behaves in the core study area. The groundwater isocontours and the inferred groundwater flow are presented in Figure 124**.**

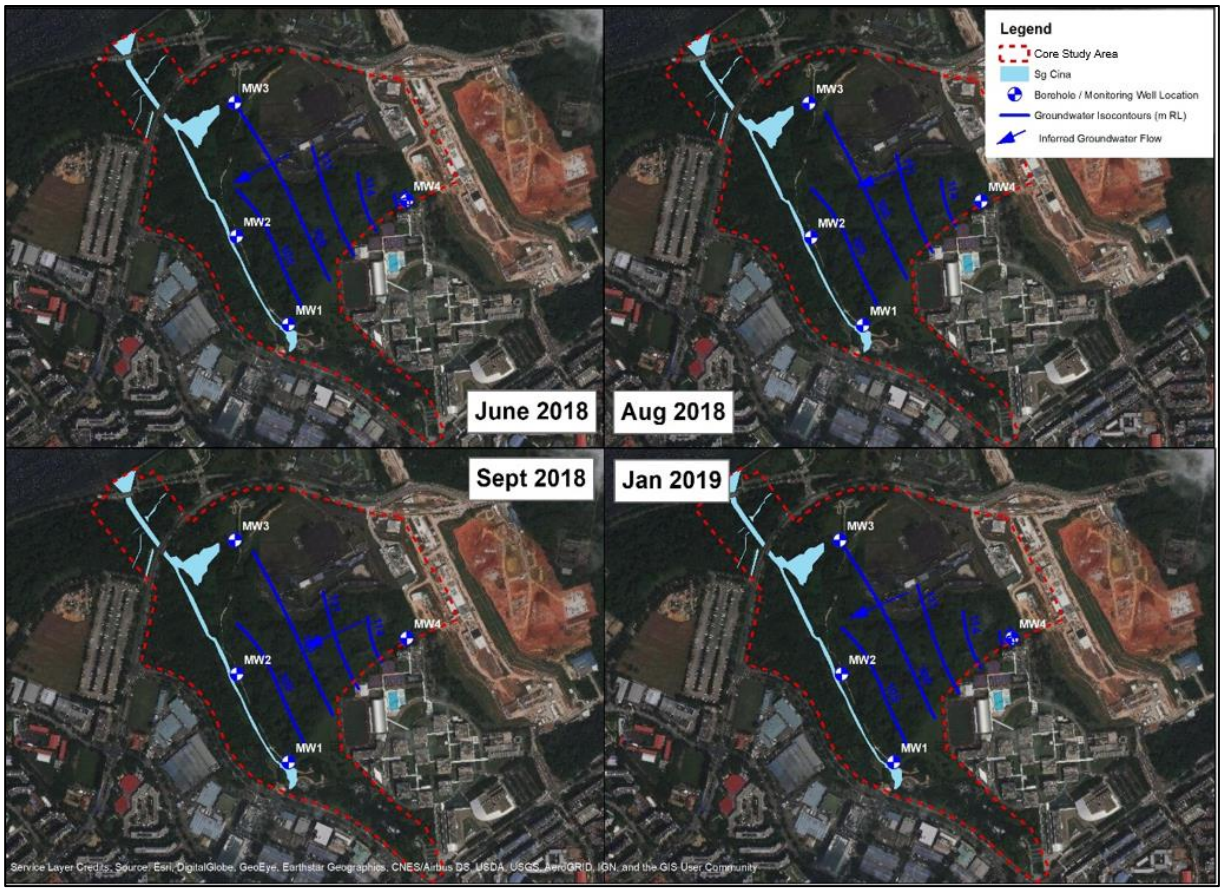


Figure 124: Comparison of Groundwater Isocontours

9.3.3 Groundwater Quality

The assessed groundwater physicochemical parameters are presented in Table 73**.**

Table 73: Summary of *In-Situ* Groundwater Physicochemical Parameters

Well ID	pH	Conductivity (cm/S)	Redox potential (mV)	DO (mg/L)	TDS (mg/L)	Temperature (ºC)
MW1	6.56	969.72	-49.2	1.78	630.25	28.46
MW2	7.28	11,581	349.9	2.29	7,527.6	28.29
MW3	7.05	2,714	-86.6	0.77	1,764.6	29.64
MW4	5.75	93.3	121.3	1.84	61.35	28.11

Based on the physico-chemical parameters assessed, the following can be observed:

- Groundwater beneath the core study area can be described as slightly acidic in the elevated area (MW4) to neutral in the low-lying areas (MW1 through MW3);
- Conductivity and total dissolved solids (TDS) indicated freshwater in the elevated area (MW4) to brackish in the river bank and near the marshland (MW1 through MW3); and

- Measured redox potential shows that near the marsh area (MW3) and the southern pond / Sungei Cina (MW1), areas have reducing conditions, while the elevated area in the east (MW4) and the mid-stream river bank area (MW2) have oxidizing environment.

The complete laboratory results for the groundwater samples are presented in **Appendix R**. The major ions analysed in the groundwater from MW1 to MW4 were plotted on a Piper plot as shown in Figure 125**.**

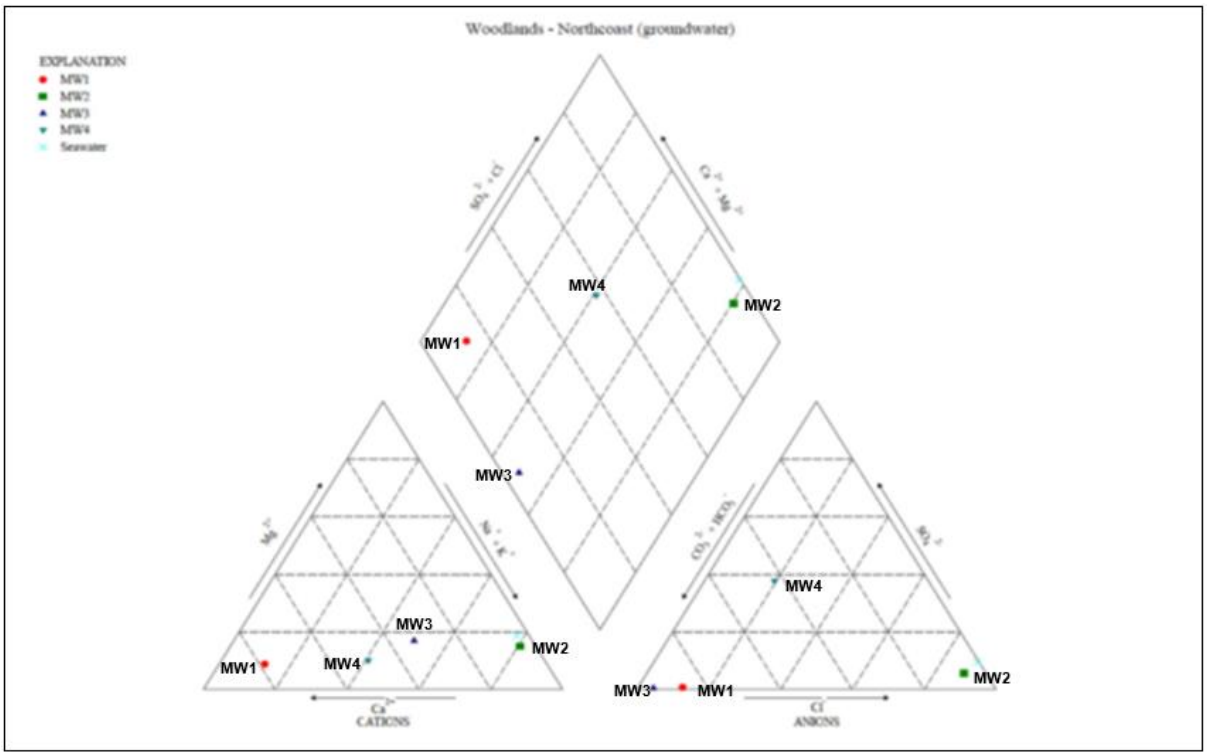


Figure 125: Piper Plot of Major Ions Analysed in Groundwater

Each monitoring well shows a distinctly different hydrogeochemical signature. Monitoring wells MW1, MW4 and MW3 are of low salinity, whereas the salinity in MW2 is significantly higher. The hydrogeochemical signature of groundwater from MW2 is similar to seawater. The higher salinity of the groundwater in this area could be due to tidal influences, especially during high tide. Moreover, this can also be due to the liberation of marine salts within the estuarine muds of the Transitional Member of the Kallang Formation based on the analysis results of salinity and total dissolved solids parameters.

9.3.4 Groundwater Relationship to Surface Water

The *in-situ* surface water quality parameters are presented in Table 47 and the water sampling locations are presented in Figure 84.

Based on the physico-chemical parameters assessed, the following can be observed:

- The surface water from the streams and drains of the core study area was found to be neutral with an average pH of 7.02 ranging from 5.8 to 7.8. The pH of the surface water within the core study area did not change significantly either spatially or temporally.

- Electrical conductivity of surface water ranged from 8,504 µS/cm to 13,673 µS/cm with an average of 10,809 µS/cm; while the salinity ranged from 4.66 ppt to 7.63 ppt with an average of 6.00 ppt. The highest electrical conductivity and salinity were recorded at WQ5 location, which is in the coastal area. At stations WQ1 to WQ4, WQ7 and WQ8, both parameters were significantly higher than other stations, which is due to intrusion of saline water during high tide.

To determine the potential relationship between groundwater and surface water, a Piper Plot of the major ions of the groundwater and surface water were plotted, as shown in Figure 126**.**

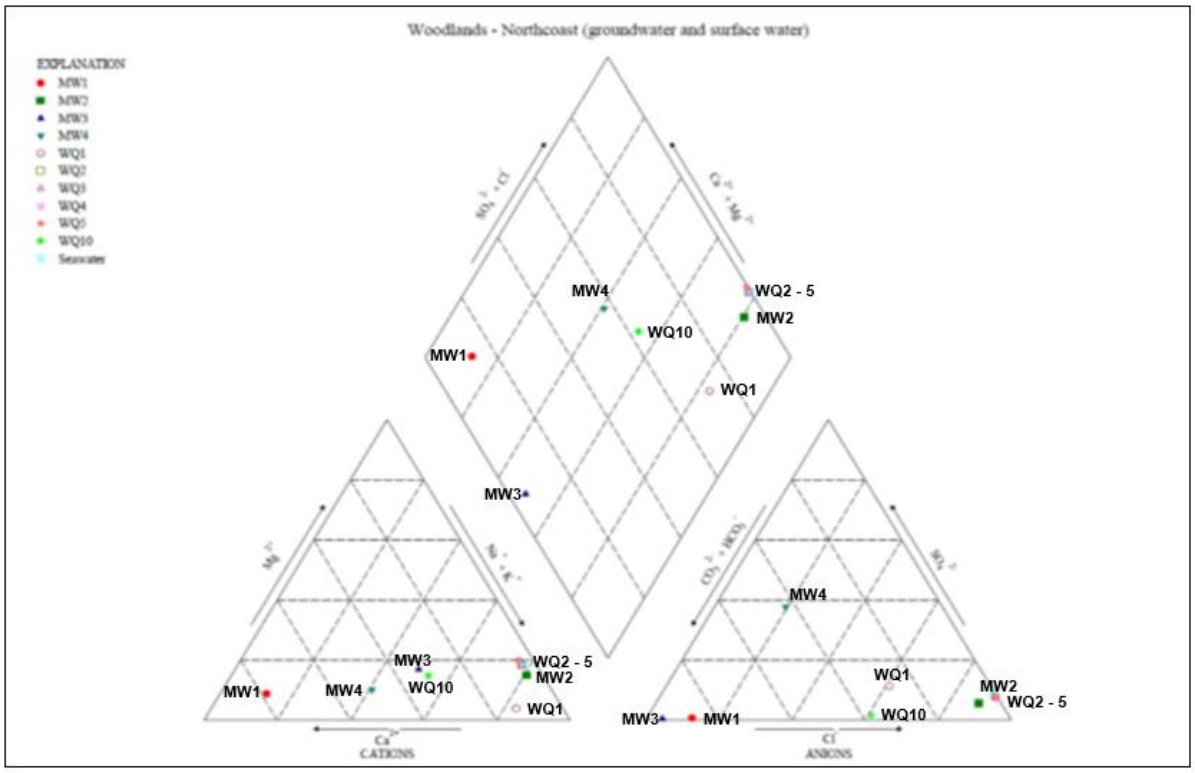


Figure 126: Piper Plot of Major Ions Analysed in Surface Water and Groundwater

Water samples WQ1 and WQ10 are of low salinity and are fresh, whereas the remaining samples are of moderate salinity and are brackish. The hydrogeochemical signatures for WQ2, WQ3, WQ4 and WQ5 are almost identical to seawater. In contrast, the lower salinity surface water samples WQ1 and WQ10, located higher in the catchment, display different hydrogeochemical signatures. It appears that the surface water in Sungei Cina is related to marine water, whereas surface water located higher in the catchment is not influenced by the water of marine origin.

The differences in the hydrogeochemical signatures in the surface water could be explained by the influence of saline tidal waters. Monitoring well MW2, located towards the centre of the catchment beside the river, also has a marine signature. Surface water samples WQ2, WQ3, WQ4 and WQ5 are located downstream from MW2. Elevated salinity could be due to intrusion of saline tidal waters in spring tides at these locations low in the catchment, which is consistent with the findings of the *in-situ* surface water investigation as presented in Section 8.3.3.2 and Figure 88. Saline groundwater could be discharging from the vicinity of MW2, influencing the down gradient water quality. The water quality at WQ1 and WQ10 is not influenced by suspected saline groundwater discharge at MW2 because these two sampling locations are hydraulically up-gradient from the discharge point, WQ10 being located in a tributary of Sungei Cina. The reason for the suspected saline groundwater discharge at MW2 may be

related to the marine deposits in the soils in proximity of MW2 and/or inundation of the Johor Straits especially during high tide.

9.3.5 Model Calibration and Sensitivity to Baseline Environment

Model calibrations were carried out, which included modification of the model parameters and boundary conditions, to match site information on groundwater levels or fluxes to assess groundwater and rainfall recharge. Groundwater levels from the four monitoring wells were used as transient calibration targets.

Two models were generated to represent the uncertainty in the recharge values during calibration resulting from the hydraulic conductivities calculated from the field slug test and the calculated value using the published literature on the geology [*Chui and Trinh (2016)*] on the modelling of infiltration enhancement in Singapore. The broad configuration of these two models is outlined in Table 74.

Model 1 relies on historical and field data whereas Model 2 represents the minimum error variance with respect to its ability to match the limited dataset of observed groundwater levels.

Table 74: Comparison of Models Used in MODFLOW-USG

Model	Hydraulic Conductivity (K)	Recharge
Model 1	Hydraulic conductivities were derived from slug tests analysed.	Recharge values for different land uses (natural and urbanised) were taken from Chui and Trinh (2016).
Model 2	Kh: for all geological units other than the Bukit Timah Granite (BT) the calculated maximum hydraulic conductivity from the gauging conducted was used. The BT Kh value was increased during model calibration. Kv: These values are slightly less than the Kh values.	Recharge for both ‘natural’ and ‘urbanised’ environments was decreased during model calibration. The recharge for the ‘natural’ scenario was decreased only slightly, yet the ‘urbanised’ recharge was decreased significantly; by at least 50%.

To ensure the robustness of the results, both models, paired with the Monte Carlo analysis, which considers uncertainty, were used as predictive models.

In addition, a visual check was done on the groundwater level contours to see if the simulated groundwater flow is consistent with the conceptual model of flow from the south to the north and, around the centre of the model domain, converging on Sungei Cina. The groundwater contours for Model 1 and Model 2 are presented in Figure 127.

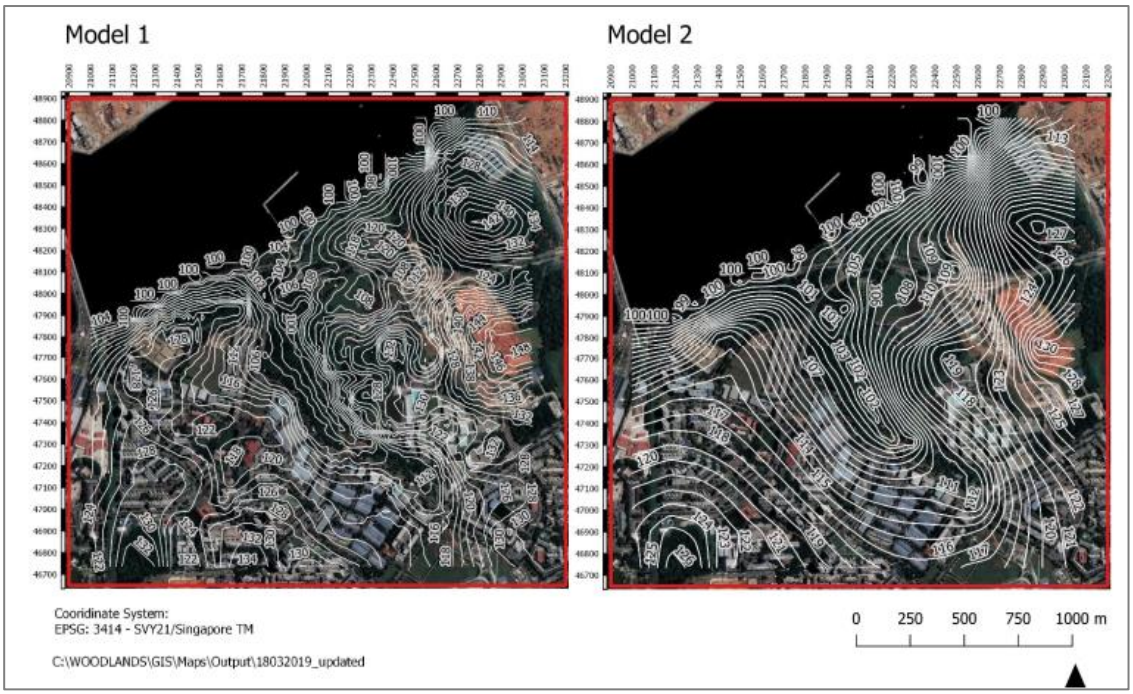


Figure 127: Calibrated Groundwater Level Contours

9.3.6 Baseline Groundwater Baseflow Conditions

To obtain the data regarding baseline groundwater baseflow, the model scenarios were run through the Monte Carlo analysis. The baseflow under existing conditions is summarised in Table 75.

Table 75: Summary of Groundwater Baseflow under Existing Conditions

Area	Minimum Baseflow (m^3/day)	Maximum Baseflow (m^3/day)	Average Baseflow (m^3/day)
Sungei Cina	40	740	390
Mangrove area	55	198	126
Proposed Core Conservation Area	0	5	1.5

9.4 Groundwater Impact Assessment

9.4.1 Classification of Receptor Sensitivity

Screening of groundwater receptors was conducted within the boundary of the core study area. This section introduces a comprehensive list of groundwater receptors that was considered for the impact assessment. The classification of the groundwater sensitive receptors within the core study area is tabulated in Table 76.

Table 76: Classification of Receptor Sensitivity

Sensitive Receptor	Description	Water Use	Sensitivity Classification
Sungei Cina	• Sungei Cina comprises of brackish water indicating inundation and freshwater input.	Groundwater not extracted for industrial purposes and not	Priority 2

Sensitive Receptor	Description	Water Use	Sensitivity Classification
	• Sungei Cina receives water from baseflow of groundwater and run-off from upstream locations and higher topography areas.	used for irrigation of drinking water. Groundwater partially contributes to Sungei Cina which supports an ecosystem of biodiversity that is of conservation significance.	
Mangroves / Coastal Forest	• Mangrove habitats were found along Sungei Cina (within Admiralty Park), mainly along the downstream section of the river.	Groundwater not extracted for industrial purposes and not used for irrigation or drinking water. Groundwater partially supports the mangrove areas which is of conservation significance.	Priority 2
Proposed Core Conservation Area *(i.e. Native-dominated Freshwater Swamp Forest and Freshwater Stream (refer to Section 7.4.2))*	• Flora and fauna of conservation significance were observed on the south-eastern edge of the proposed residential development site.	Groundwater not extracted for industrial purposes and not used for irrigation or drinking water. Groundwater contributes to the proposed core conservation area which is of conservation significance.	Priority 2

9.4.2 Overview of Impacts on Groundwater during Construction Stage

9.4.2.1 Sources of Impacts during Construction Stage

The future developments will involve site clearance and construction activities that will take place in the proposed development footprint as shown in Figure 128. The potential sources of impacts from the projects' construction activities will include deforestation and clearance of land, re-shaping of the topography in certain areas (i.e., terracing), excavation and dewatering during the construction of underground structures, such as basements, and construction of the residential buildings and associated roads and infrastructures.

A hydrogeological conceptual model (MODFLOW model) was developed to:

1- Understand the groundwater system and its behaviour and interactions with the overall water cycle for the core study area.
2- Characterise the potential environmental impacts on the hydrogeology of the core study area (refer to Figure 129).

In developing the models, the changes in topography (i.e., terracing) were considered. The impacts on the basement excavation and dewatering were simulated and assessed by activating MODFLOW Drain boundary conditions in the areas where basements are planned. The invert or floor of the Drain was set as 4.5 m below ground level, which is equivalent to 1.5 storey. It was assumed that the dewatering will take place for 6 months and the proposed development will not be constructed in phases, thereby simulating a "worst-case scenario". The Recharge and Evapotranspiration zones were modified to represent areas where land cover will change, including the removal of forest or parkland, and the

construction of roads and buildings (i.e. urban land use). Average recharge and potential evaporation rates and vegetation rooting depths were considered.

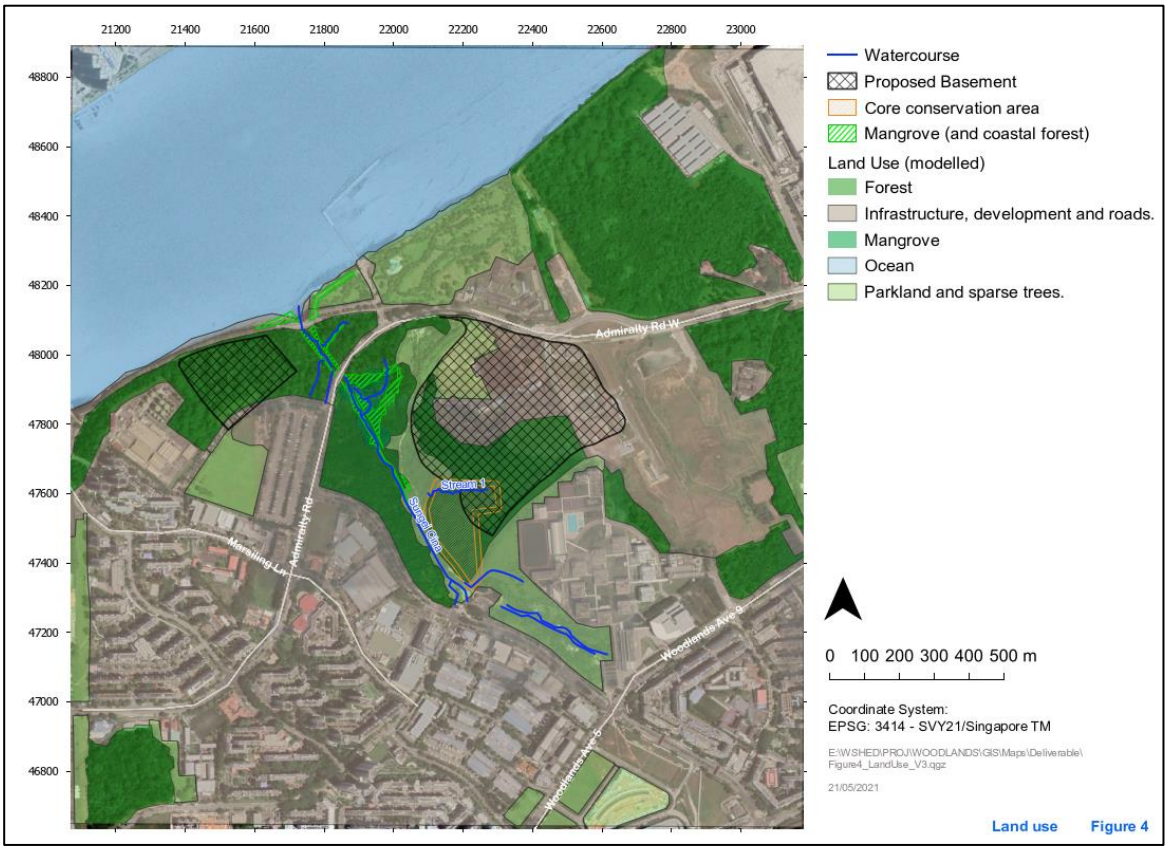


Figure 128: Proposed Development Footprint

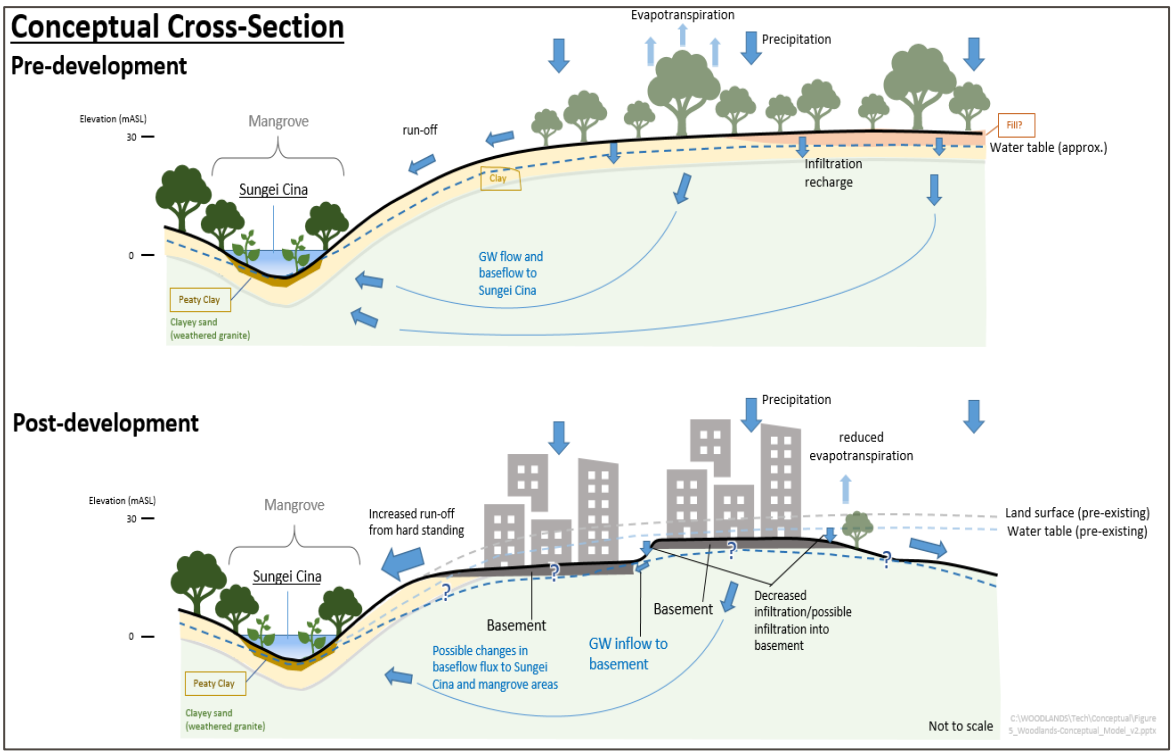


Figure 129: Hydrogeological Conceptual Model

9.4.2.2 Potential Impacts on Groundwater during Construction Stage

Based on the source of impacts described in the section above, a summary of the associated impacts on groundwater is provided in Table 77.

Table 77: Summary of Construction Activities and their Associated Impacts on Groundwater

Construction Activities	Potential Impacts on Groundwater
• Site Clearance • Re-shaping of the topography • Excavation and dewatering during the construction of underground structures • Construction of the residential buildings and associated roads and infrastructures	• Increased groundwater drawdown due to the decreased infiltration and changes in topography • Decreased baseflow discharge to Sungei Cina • Decreased freshwater flux to potentially groundwater-dependent ecosystems such as the mangroves • Decreased baseflow discharge to the freshwater swamp forest in the proposed core conservation area

Evaluation of each of the identified environmental impacts are discussed in the following sections.

9.4.3 Impact Prediction of Construction Dewatering Activities

The initial stages of construction will include construction dewatering, where water is extracted in large amounts for basement construction. The MODFLOW-UGS model has been used to estimate dewatering volumes from the basements during a 6-month period. Figure 130 presents the predicted total dewatering rates across all proposed basement areas for Model 1, Model 2 and the average. The hydrograph suggests that initial dewatering volumes will be high (due to storage depletion), being 400-1,100 m^3/d (average 750), falling to about 200 m^3/d in the longer term.

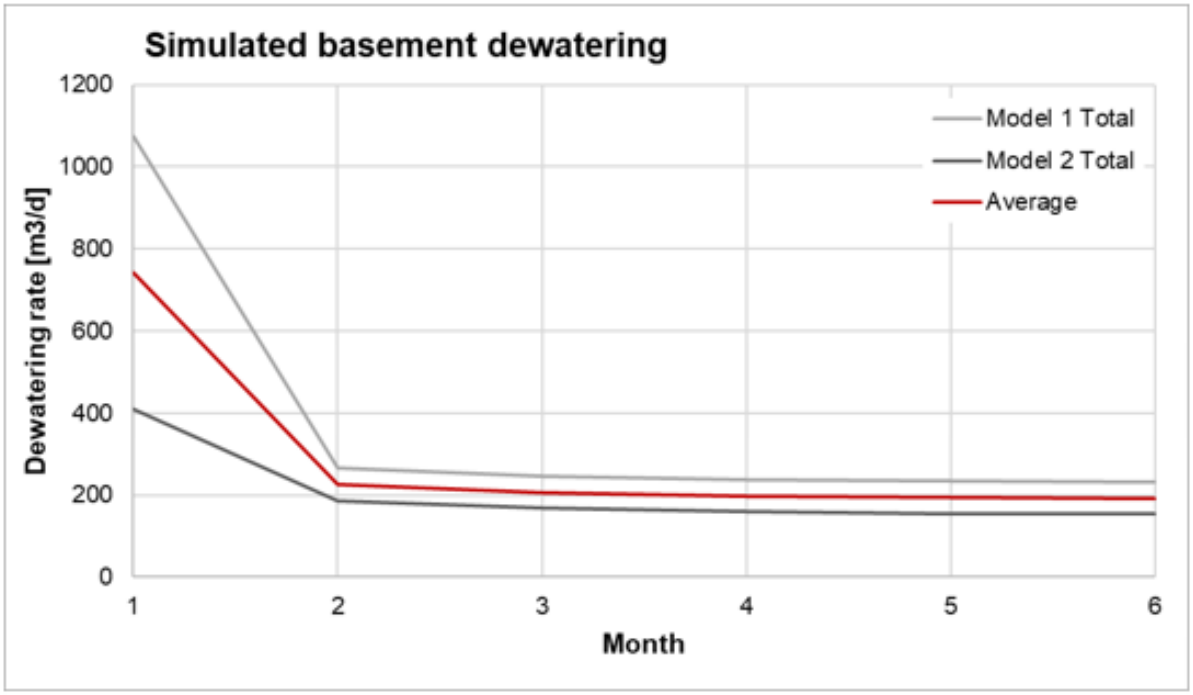


Figure 130: Simulated Basement Dewatering

9.4.3.1 Impacts on Sungei Cina

9.4.3.1.1 Increased Groundwater Drawdown in Sungei Cina

A drawdown of 0.2 m is predicted to extend from the basement area to the eastern portion of Sungei Cina. The length of Sungei Cina intersected by the expected mean 0.2 m drawdown is shorter in the 5th percentile case as compared to the 95th percentile case. A summary of the mean, 5th percentile and 95th percentile of the expected drawdown in Sungei Cina is summarised in Table 78 and Figure 131.

Table 78: Summary of Predicted Short-Term Groundwater Drawdown in Sungei Cina

Area	Mean estimate	5% percentile (best case)	95% percentile (worst case)
Sungei Cina	0.1 m (range 0 to 0.2m)	0.1 m (range 0 to 0.18m)	0.2 m (range 0 to 0.3m)

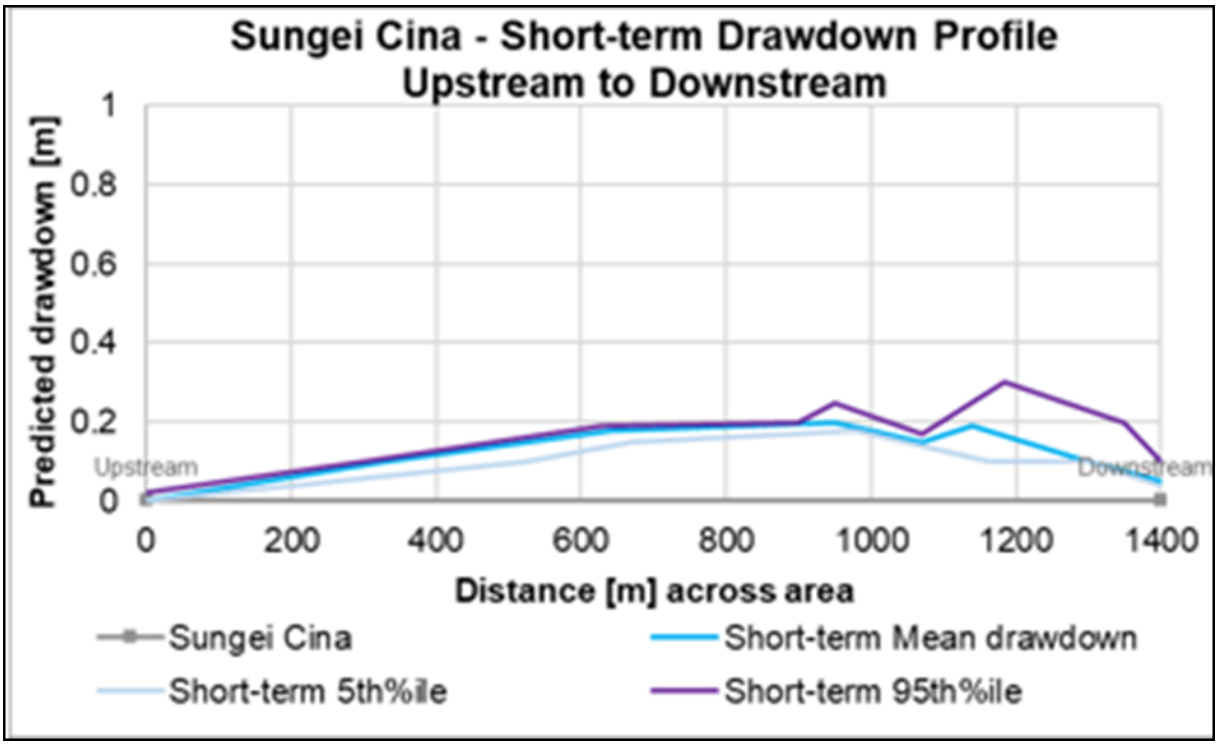


Figure 131: Short-Term Groundwater Drawdown in Sungei Cina

9.4.3.1.2 Decreased Baseflow in Sungei Cina

The Monte Carlo analysis was conducted to calculate the decreased baseflow in Sungei Cina via 100 modelled realisations. A hydrograph presenting the results for the 100 Monte Carlo realisations for the baseflow loss, and percentage of reduction are presented in Figure 132 and Figure 133 respectively.

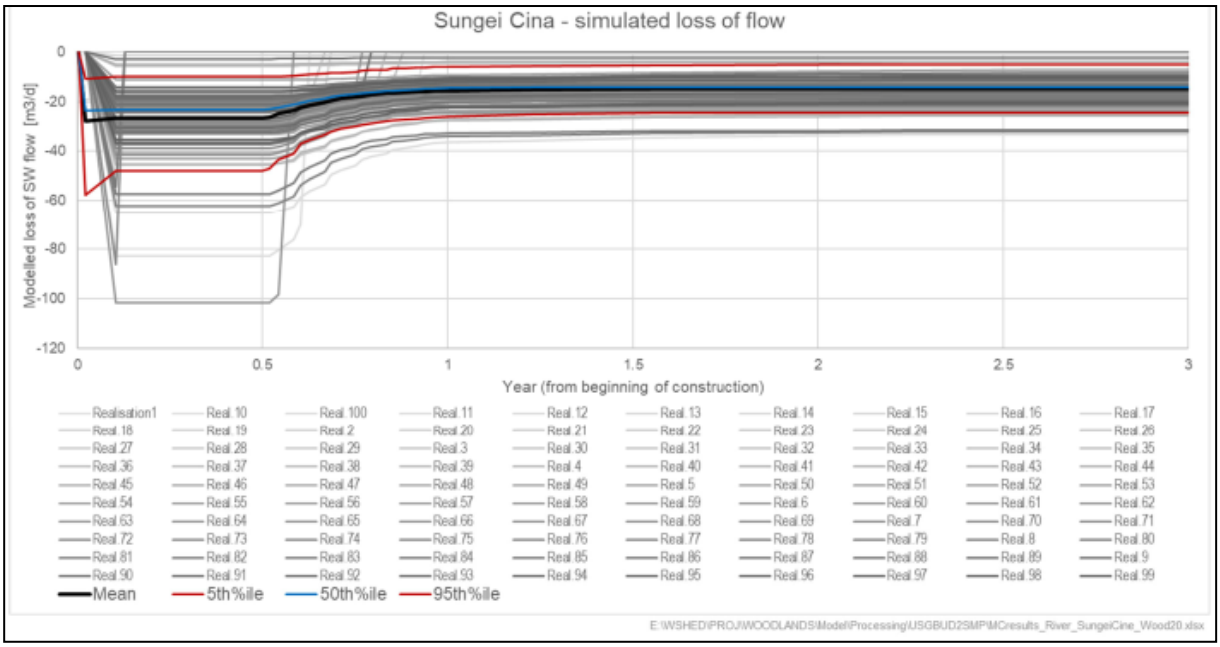


Figure 132: Simulated Monte Carlo Realisations of Baseflow Loss in Sungei Cina

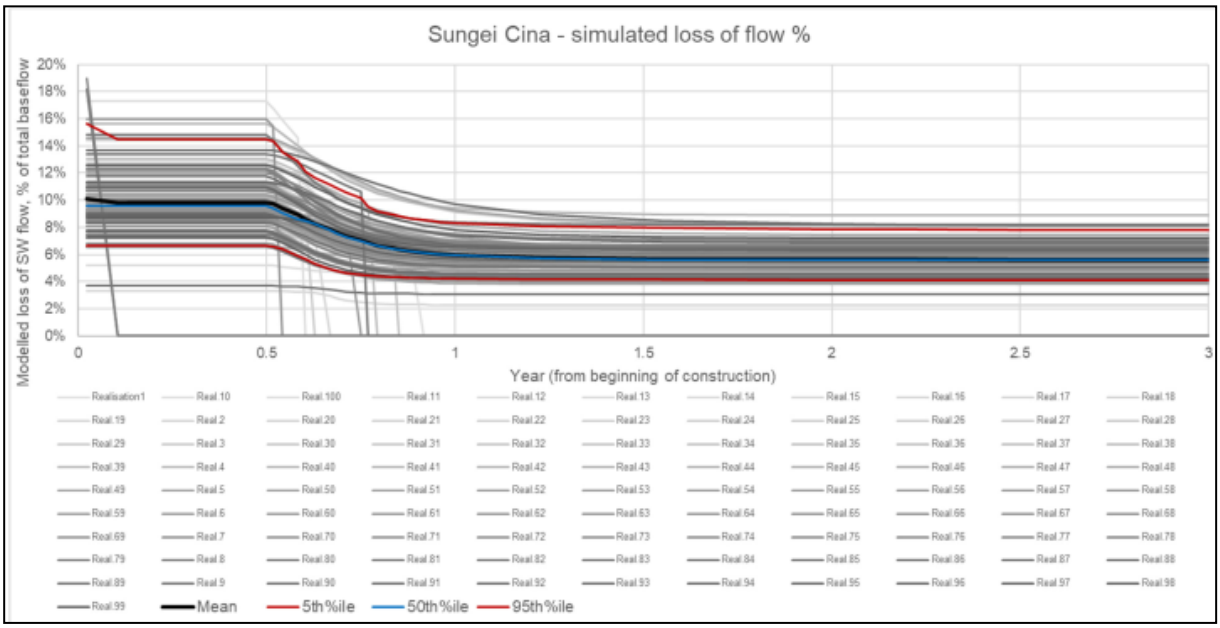


Figure 133: Simulated Monte Carlo Realisations of Percentage Reduction in Baseflow for Sungei Cina

The results suggest that baseflow reduction would peak for approximately 6 months during the dewatering phase for the construction of the basement. The calculated mean, 5th and 95th percentiles or the baseflow reduction and respective percentage reductions are presented in Table 79.

Table 79: Summary of Baseflow Reduction in Sungei Cina

Baseflow Reduction	5% percentile (best case)	95% percentile (worst case)	Average
m^3/day	10	47	25

Baseflow Reduction	5% percentile (best case)	95% percentile (worst case)	Average
% reduction	7	14	10

9.4.3.2 Impacts on the Sungei Cina Mangroves

9.4.3.2.1 Increased Groundwater Drawdown in the Mangrove Area

Drawdown from the basement dewatering is expected to extend towards the mangrove areas as seen in the predicted groundwater contours in Figure 127. The southern areas of the mangrove would experience a greater extent of drawdown as compared to the northern areas. The predicted short-term drawdown is 0.1 m, and 4.5 m on the 95th percentile of the Monte Carlo iteration.

A summary of the drawdown in the northern and southern areas of the mangrove are presented in Table 80 and Figure 134.

Table 80: Summary of Short-Term Groundwater Drawdown in the Mangrove Areas

Area	Mean estimate	5% percentile (best case)	95% percentile (worst case)
Mangrove area (southern)	0.25 m (range 0 to 1.1m)	0.2 m (range 0 to 0.9m)	1.5 m (range 0.9 to 4.5m)
Mangrove area (northern)	0 m (range 0 to 0.1m)	0 m	0.1 m (range 0 to 0.2m)

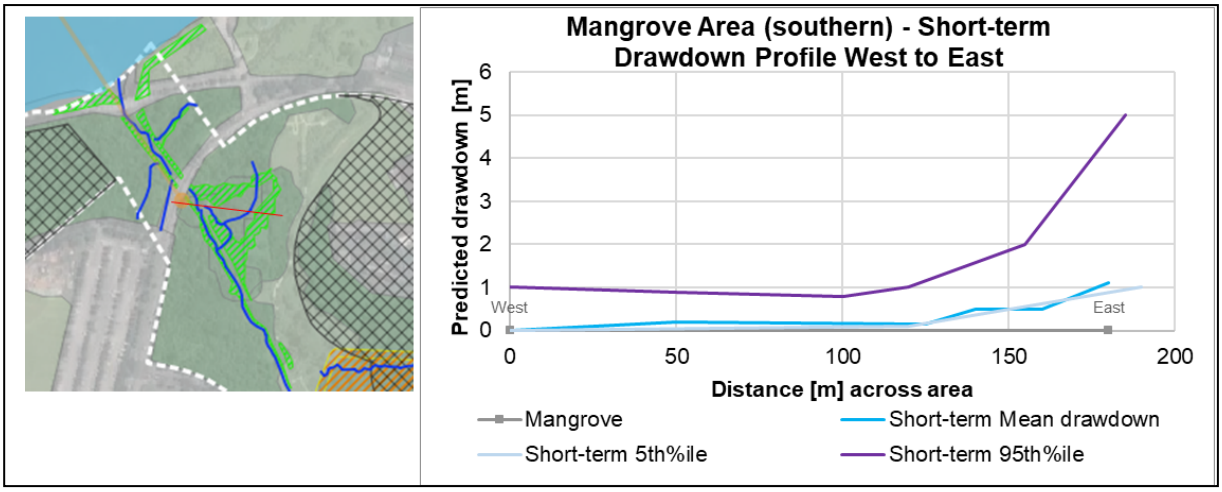


Figure 134: Short-Term Groundwater Drawdown in the Southern Mangroves

9.4.3.2.2 Decreased Baseflow in the Mangrove Area

The Monte Carlo analysis was conducted to calculate the decreased baseflow in the mangrove area via 100 modelled realisations. A hydrograph presenting the results for the 100 Monte Carlo realisations for the baseflow loss, and percentage of reduction are presented in Figure 135 and Figure 136 respectively.

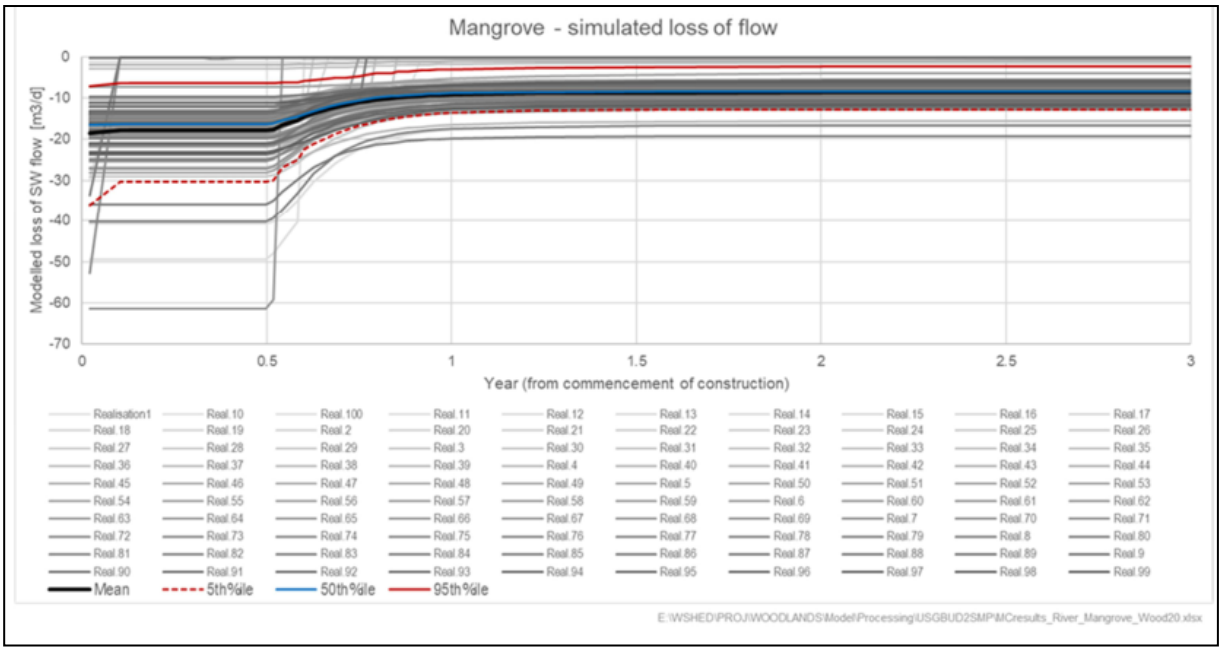


Figure 135: Simulated Monte Carlo Realisations of Baseflow Loss in Mangrove Areas

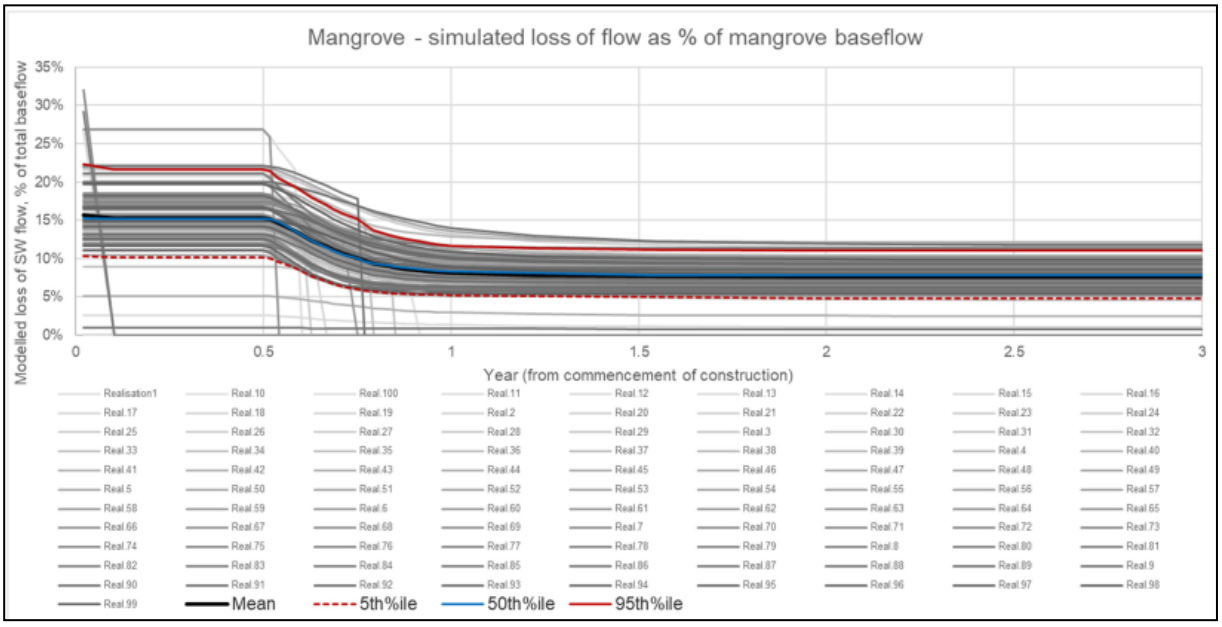


Figure 136: Simulated Monte Carlo Realisations of Percentage Reduction in Baseflow for the Mangrove Area

Similar to the effects of dewatering in Sungei Cina, the results suggest that baseflow reduction would peak for approximately 6 months during the dewatering phase for the construction of the basement.

The calculated mean, 5th and 95th percentiles or the baseflow reduction and respective percentage reductions are presented in Table 81.

Table 81: Summary of Baseflow Reduction in the Mangrove Area

Baseflow Reduction	Mean Estimate	5% percentile (best case)	95% percentile (worst case)
m^3/day	17	7	35

Baseflow Reduction	Mean Estimate	5% percentile (best case)	95% percentile (worst case)
% reduction	15	10	22

9.4.3.3 Impacts on the Proposed Core Conservation Area

9.4.3.3.1 Increased Groundwater Drawdown in the Proposed Core Conservation Area

A groundwater drawdown is expected to occur throughout the entire proposed core conservation area, as presented in Figure 127. It is expected to decrease at an average of 2.5 m, and up to 7m in the upper limit of the 95th percentile in the Monte Carlo iteration, at the centroid of the core conservation area. The mean, 5th percentile and 95th percentile of the Monte Carlo iterations are presented in Table 82 and Figure 137.

Table 82: Summary of Short-Term Groundwater Drawdown in the Proposed Core Conservation Area

Area	Mean estimate	5% percentile (best case)	95% percentile (worst case)
Proposed core conservation area	2.5 m (range 0 to 5m)	1 m (range 0 to 2.5m)	3.5 m (range 0.1 to 7m)

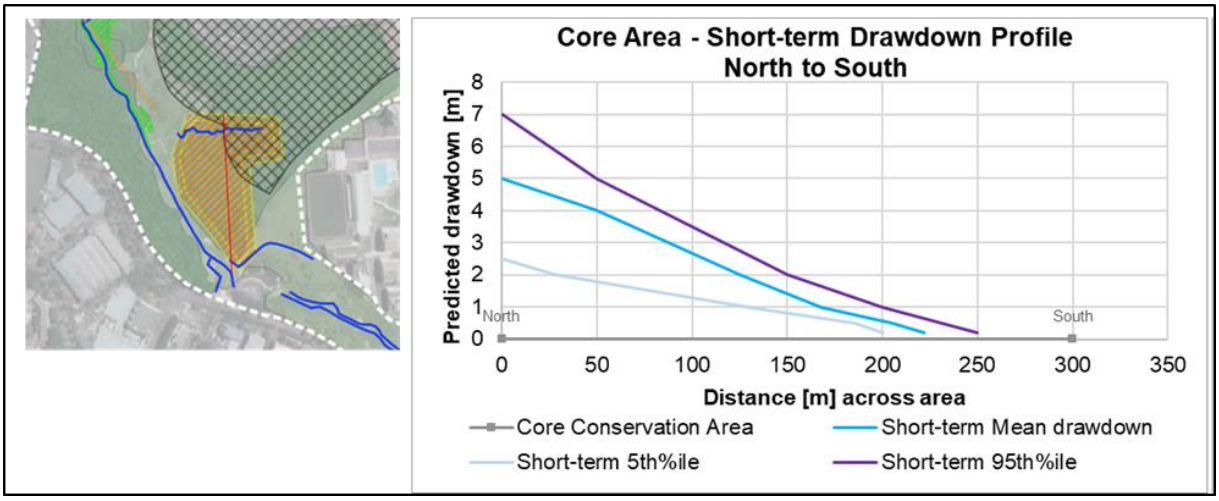


Figure 137: Short-Term Groundwater Drawdown in the Proposed Core Conservation Area

9.4.3.3.2 Decreased Baseflow in the Proposed Core Conservation Area

The Monte Carlo analysis was conducted to calculate the decreased baseflow in the proposed core conservation area via 100 modelled realisations. A hydrograph presenting the results for the 100 Monte Carlo realisations for the baseflow loss, and percentage of reduction are presented in Figure 138 and Figure 139 respectively.

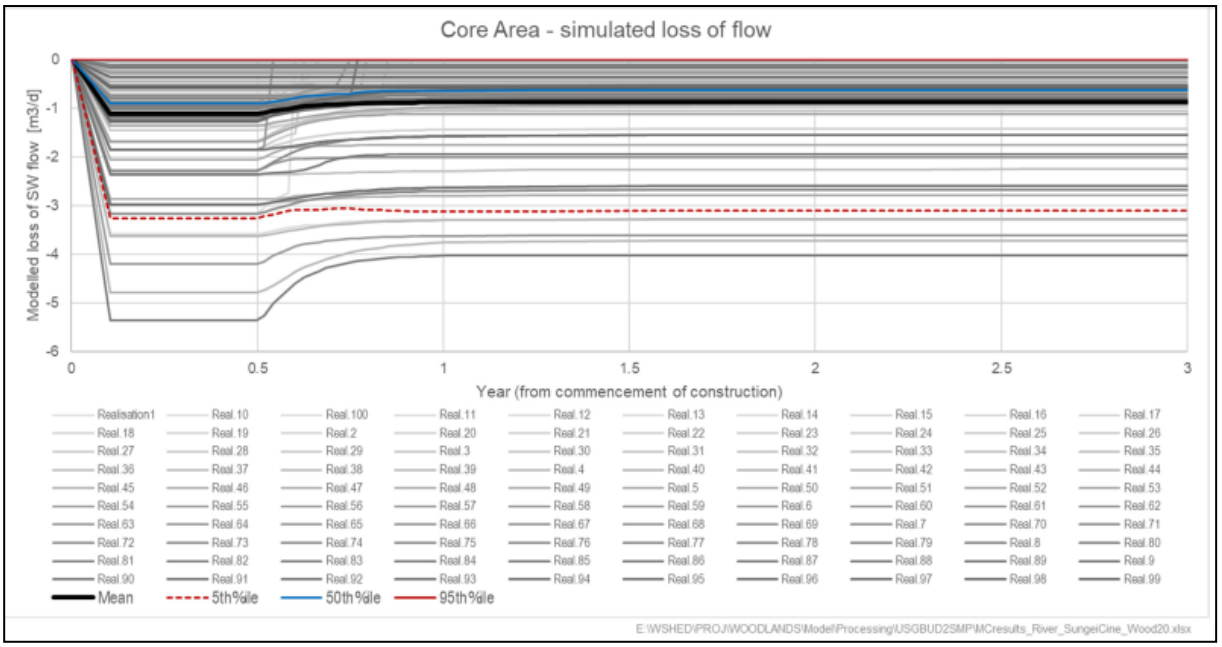


Figure 138: Simulated Monte Carlo Realisations of Baseflow Loss in the Proposed Core Conservation Area

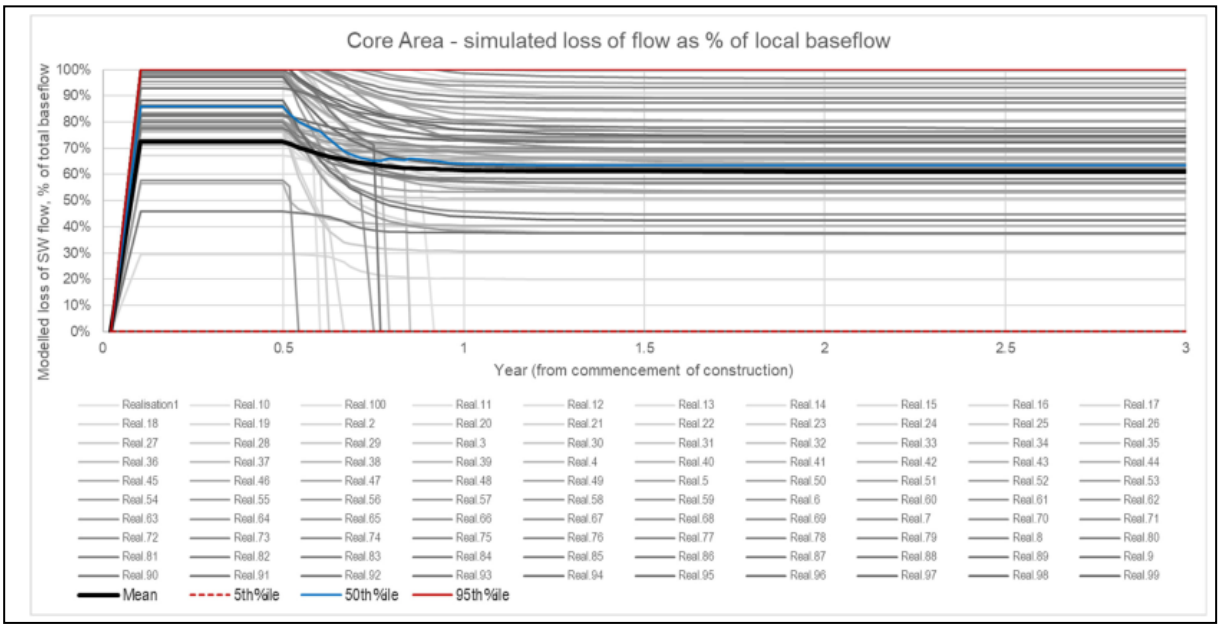


Figure 139: Simulated Monte Carlo Realisations of Percentage Reduction in Baseflow for the Proposed Core Conservation Area

The results suggest that baseflow reduction would peak for approximately 6 months during the dewatering phase for the construction of basement developments.

The calculated mean, 5th and 95th percentiles of baseflow reduction and respective percentage reductions are presented in Table 83.

Table 83: Summary of Baseflow Reduction in the Proposed Core Conservation Area

Baseflow Reduction	Mean Estimate	5% percentile (best case)	95% percentile (worst case)
m^3/day	1.1	0	3.2
% reduction	72	0	100

The large range in the prediction is due to the high uncertainty associated with this prediction due to the lack of information about the groundwater table in this area as no groundwater monitoring wells were installed within the proposed core conservation area due to sensitivity concerns.

9.4.4 Overview of Impacts on Groundwater during Operational Stage

9.4.4.1 Sources of Impacts during Operational Stage

As mentioned in Section 3.4, the operational stage of the projects will mainly consist of human activities related to their occupancy of the future developments. As the future residential development area will be replaced with impervious surfaces, reduced groundwater infiltration is expected. There is no other known source of impacts on groundwater drawdown, unless excavation and earthwork activities are conducted in the future residential development area during operational stage.

9.4.4.2 Potential Impacts on Groundwater during Operational Stage

In the long-term, peak drawdown and the baseflow reduction within the basement areas is projected to decline after the cessation of basement dewatering. Peak long-term drawdown is on average 4 m; however, it is 10 m in the 95th percentile of the Monte Carlo Iteration.

In addition, the potential impact on groundwater during the operational stage is the reduced groundwater infiltration due to natural landscape replacement by impervious surfaces. This may increase groundwater drawdown and reduce baseflow to Sungei Cina.

9.4.5 Impact Prediction during the Operational Phase

After the construction phase, the groundwater level is expected to achieve a steady state and will equilibrate with the surrounding groundwater level. Hence, the operational phase (i.e., human occupancy) of the project will not have impact on the groundwater drawdown and baseflow.

9.4.5.1 Impacts on the Sungei Cina

While the drawdown in the long-term is generally less extensive and has a lower magnitude in the centre of the cone of depression due to the basement dewatering, the long-term drawdown of 0.2 m is predicted to extend slightly further in the eastern portion in the long term. A summary of the groundwater drawdown in the mean, 5th and 95th percentile of the Monte Carlo iteration is presented in Table 84 and Figure 140.

Table 84: Summary of Long-Term Groundwater Drawdown in Sungei Cina

Area	Mean estimate	5% percentile (best case)	95% percentile (worst case)
Sungei Cina	0.1 m (range 0 to 0.2m)	<0.1 m (range 0 to 0.12m)	0.15 m (range 0 to 0.2m)

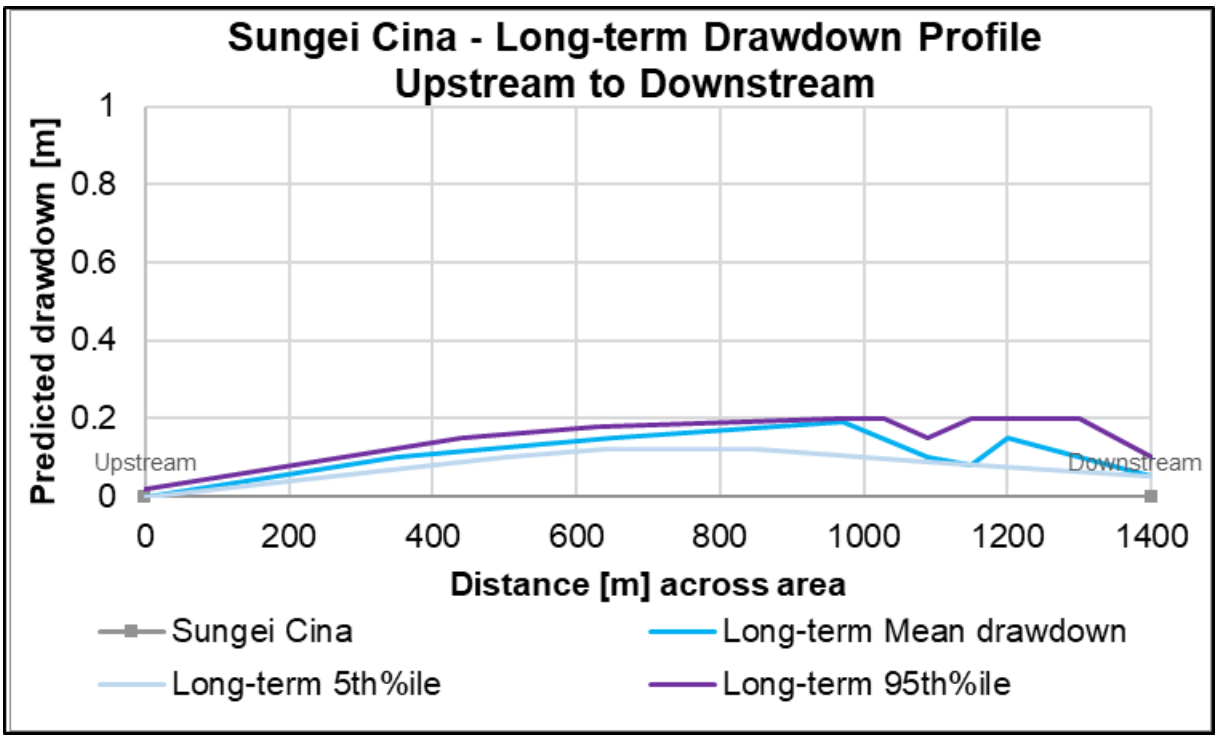


Figure 140: Long-Term Groundwater Drawdown in Sungei Cina

As presented in Figure 132 and Figure 133, baseflow reduction decreases and eventually stabilizes after approximately 6 months, when the cessation of basement dewatering occurs.

The calculated mean, 5th and 95th percentiles of the long-term baseflow reduction and respective percentage reductions of Sungei Cina are presented in Table 85.

Table 85: Summary of Long Term Baseflow Reduction in Sungei Cina

Baseflow Reduction	Average	5% percentile (best case)	95% percentile (worst case)
m^3/day	15	5	25
% reduction	6	4	8

9.4.5.2 Impacts on the Mangrove Area

Drawdown is predicted to extend throughout the mangrove area in the mean and 95th percentile Monte Carlo iteration. The northern portion of the mangrove area is predicted to be less affected in the long-term as compared to the short term and is significantly less than the southern portions of the mangrove area which is predicted to experience a 0.2 m long-term drawdown. The summary of the mean, 5th and 95th percentile of the Monte Carlo iteration for the drawdown in the northern and southern areas of the mangrove is presented in Table 86 and Figure 141.

Table 86: Summary of Long-Term Groundwater Drawdown in the Mangrove Areas

Area	Mean estimate	5% percentile (best case)	95% percentile (worst case)
Mangrove area (southern)	0.2 m (range 0 to 0.5m)	0.2 m (range 0 to 0.4m)	0.3 m (range 0.15 to 1m)
Mangrove area (northern)	0 m (0 to 0.1m)	0 m	0.1 m (range 0 to 0.2m)

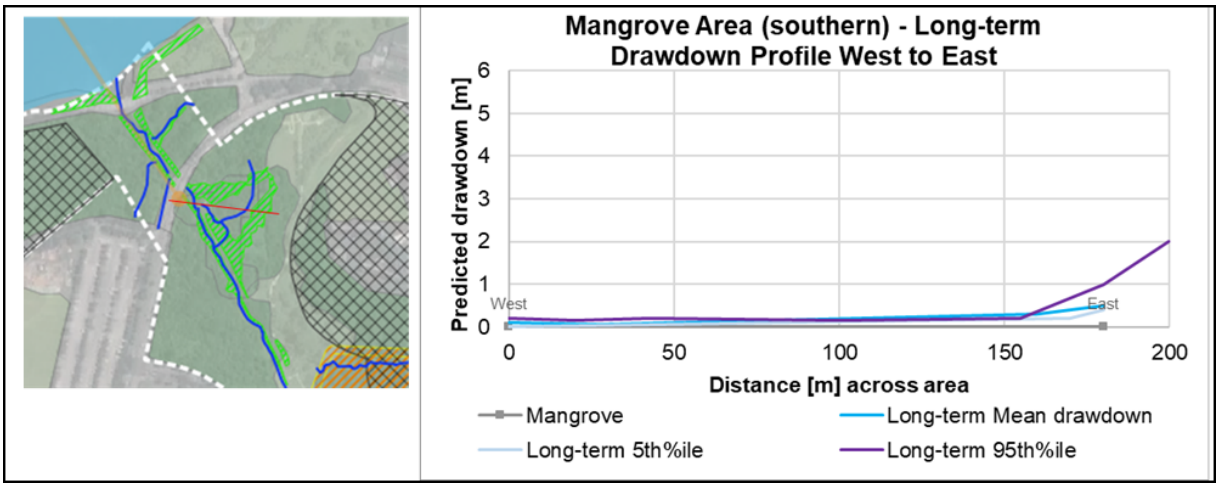


Figure 141: Long-Term Groundwater Drawdown in the Mangrove Areas

Similar to the baseflow reduction in Sungei Cina, baseflow reduction decreases and eventually stabilizes after approximately 6 months, when the cessation of basement dewatering occurs. The baseflow reduction of the mangrove area is presented in Figure 135 and Figure 136.

The calculated mean, 5th and 95th percentiles of the long-term baseflow reduction and respective percentage reductions of the mangrove area are presented in Table 87.

Table 87: Summary of Long Term Baseflow Reduction in the Mangrove Area

Baseflow Reduction	Average	5% percentile (best case)	95% percentile (worst case)
m^3/day	9	2	13
% reduction	8	5	11

9.4.5.3 Impacts on the Proposed Core Conservation Area

In the 5th percentile Monte Carlo iteration of the groundwater drawdown in the proposed core conservation area is expected to be slight. However, in the mean and 95th percentile iterations, drawdown extends under the entire proposed core conservation area, ranging from 0.2m to 5.5m. A summary of the mean, 5th and 95th percentile of the groundwater drawdown in the proposed core conservation area is presented in Table 88 and Figure 142.

Table 88: Summary of Long-Term Groundwater Drawdown in the Proposed Core Conservation Area

Area	Mean estimate	5% percentile (best case)	95% percentile (worst case)
Proposed core conservation area	2 m (range 0.1 to 5.5m)	1 m (range 0 to 1.5m)	3 m (range 0.1 to 5.5m)

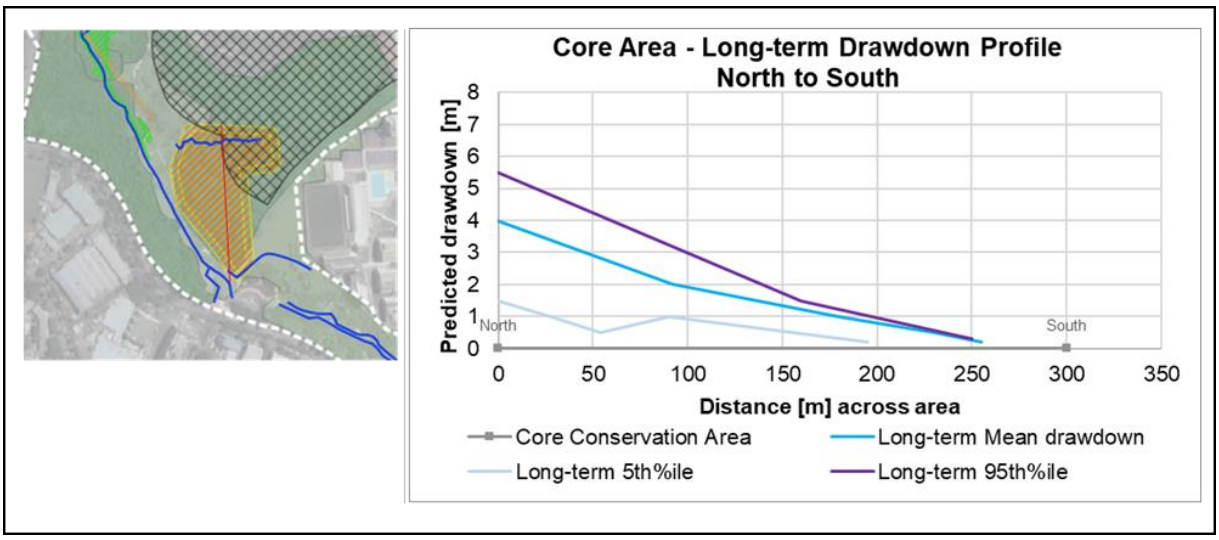


Figure 142: Long Term Groundwater Drawdown in the Proposed Core Conservation Area

Similar to the baseflow reduction in Sungei Cina and the mangrove area, baseflow reduction decreases and eventually stabilizes after approximately 6 months, when the cessation of basement dewater occurs. The baseflow reduction of the proposed core conservation area is presented in Figure 138 and Figure 139. The effect of baseflow reduction in the proposed core conservation area is also attributed the land use change in the area.

The calculated mean, 5th and 95th percentiles of the long-term baseflow reduction and respective percentage of baseflow reductions in the proposed core conservation area are presented in Table 89.

Table 89:Summary of Long Term Baseflow Reduction in the Proposed Core Conservation Area

Baseflow Reduction	Average	5% percentile (best case)	95% percentile (worst case)
m^3/day	0.8	0	3
% reduction	62	0	100

9.4.6 Summary of Impact Evaluation

As detailed in Sections 9.4.3.1 and 9.4.5.1, the decreased baseflow in Sungei Cina is only expected during the initial stage of the construction, i.e. during the dewatering phase. The predicted long-term reduction is 4-8% of baseflow from groundwater. The baseflow contribution from groundwater towards Sungei Cina is relatively small (~approximately <2%), as Sungei Cina receives water from upstream urban runoff and tidal inflows from the Straits of Johor. Furthermore, as this localised groundwater drawdown is likely to only happen during the dewatering stage, the intensity of this impact is considered low. Impact consequence is assessed to be low. Given that the occurrence of the expected decreased baseflow is only during the initial stage of the construction, likelihood of the impact is low. Therefore, impact significance of the decreased baseflow in Sungei Cina is minor.

As shown in Sections 9.4.3.1 and 9.4.5.1, the groundwater table is expected to have a drawdown of approximately 0.2 m, however it would stabilise and establish its new groundwater table. The

consequence of the impact is assessed to be low given that the impact is localised to Sungei Cina. Since further drawdown from the new water level established is unlikely to occur, unless excavations happen in the core study area, the likelihood of occurrence is low. Hence, impact of the groundwater drawdown to Sungei Cina is minor.

As mentioned in Sections 9.4.3.2 and 9.4.5.2, the decreased groundwater baseflow in the mangroves is expected to be 10 – 22% in the short term during the dewatering phase and 5 – 11% in the long term during the operational phase. However, given that the mangroves thrive on saline water from tidal inflows from the Straits of Johor and the brackish water from Sungei Cina and are not solely dependent on groundwater, the impact consequence of localised groundwater drawdown is assessed to be low. As this impact is limited to only a short period during the dewatering phase, the likelihood of occurrence is assessed to be low. Hence, the impact of the decreased baseflow on mangroves is expected to be minor.

The drawdown results within the mangrove area, indicates that in the short term, the groundwater table is expected to have a drawdown of approximately up to 4.5 m in the 95th percentile of the Monte Carlo iteration. In the long term however, the northern portion of the mangrove area is expecting a drawdown of 0 – 0.1 m and the southern parts of the mangrove are still expecting a 0.2 m drawdown. Based on the groundwater gauging done on MW3, the monitoring well closest to the mangrove area, the groundwater levels approximately range from 2.9 to 4.4 m bgs. This is below the reported extinction depth of the mangroves of 0.35 m. Hence, mangroves in this area are heavily dependent on the inundation and the water from Sungei Cina. Given that the groundwater table is below the extinction depth of the mangroves, the impact consequence is assessed to be imperceptible to the mangroves. Since the drawdown from the new water level (long term) is no longer expected to occur, the likelihood of occurrence is low. Hence, the impact of the drawdown to the mangroves is expected to be negligible.

As outlined in Sections 9.4.3.3 and 9.4.5.3, the mean decreased groundwater baseflow in the proposed core conservation area in the short and long-term are 72% and 62% respectively. As the proposed development area may encroach on some portions of the proposed conservation area and given that the decrease is predicted in the conservation area, the impact consequence is assessed to be high. The effect, while decreases in the long-term, is still substantial in the operational phase, hence, the likelihood is assessed to be high. As the baseflow in the native-dominated freshwater swamp located in the proposed core conservation area is coming from the groundwater baseflow and surface run-off, the significant decrease in groundwater baseflow is irreversible and will occur as well during the operational phase. Hence, the likelihood of this impact to occur is high. Hence, the impact of the decreased baseflow is expected to be major.

The drawdown measurements within the proposed core conservation area in the short-term ranges from 1 to 2m and 0.2 to 5m in the long term. The extinction depth of forested areas and parklands and sparse trees are 1.2 and 0.8 m bgs respectively and the groundwater levels from the groundwater gauges ranged from 0.15 – 1.24 m bgs. This indicates that the reduction in groundwater table would take place in the root zones of the flora within the proposed core conservation area, hence, a significant drawdown in the long term would be assessed to have a high impact consequence. Given that the drawdown effects are not limited to the dewatering period, the likelihood of occurrence is assessed to be high. Hence the impact of the increased drawdown is major.

It should be noted that the effects of baseflow reduction and groundwater drawdown for the proposed core conservation area were taken to be conservative due to the lack of groundwater information present

in the area. While groundwater information from the closest monitoring well MW2 was taken, it should be noted that given the difference in topography and the stabilized water level (SWL) in the proposed core conservation area may be different.

Table 90: Significance of Groundwater Impacts

Environmental Parameters	Sensitive Receptor	Impact Intensity (I)	Impact Consequence (C) = (S x I)	Likelihood (L)	Impact Significance (C x L)
Baseflow Reduction	Sungei Cina (Priority 2)	Low	Low	Low	Minor
	Mangroves / Coastal Forest (Priority 2)	Low	Low	Low	Minor
	Proposed core Conservation Area *(i.e. Native-dominated Freshwater Swamp Forest and Freshwater Stream (refer to Section 7.4.2))* (Priority 2)	High	High	High	**Major**
Groundwater Drawdown	Sungei Cina (Priority 2)	Low	Low	Low	Minor
	Mangroves / Coastal Forest (Priority 2)	Negligible	Imperceptible	Low	Negligible
	Proposed core Conservation Area *(i.e. Native-dominated Freshwater Swamp Forest and Freshwater Stream (refer to Section 7.4.2))* (Priority 2)	High	High	High	**Major**

9.4.7 Limitations of the Assessment

The conceptual model and numerical model have been developed from the limited hydrological dataset from the monitoring wells. There is also a small dataset of groundwater level observations and limited flux data to calibrate against. There is uncertainty associated with the recharge, hydraulic conductivity and storage properties and therefore, with its associated predictions.
Uncertainty analysis has been performed via the following two processes:

- Two deterministic model configurations (i.e. Model 1 and Model 2)
- A Monte Carlo analysis of model parameters using the PEST software

The Monte Carlo Uncertainty analysis method applied here is not calibration constrained, given the limited available groundwater data. Uncertainty on predictions could be better constrained in future, if necessary, by further hydrological monitoring and permeability testing.

Moreover, as the detailed design of the project is not yet available, the predictions provided herein are based on assumptions used in the models. They represent the worst case scenario and overestimated predictions based on the available data.

9.5 Recommended Mitigation Measures

The significance of the identified impacts of on the sensitive receptors to groundwater changes range from minor to major. In this section, mitigation measures are proposed to further minimise the adverse impacts on the environment where impact significance were assessed to be moderate or major.

Given that dewatering leads to reduced baseflow and an increased drawdown, the following mitigation measures, summarised in Table 91, are recommended. These measures are intended to minimize impact on groundwater and provide additional warning if impacts observed are greater than expected. With the implementation of proposed mitigation measures set out in Table 91, the significance of the residual impact on groundwater is provided in Table 92.

Table 91: Recommended Mitigation Measures

Environmental Parameter	Potential Source of Impacts	Additional Measures Recommended
Groundwater	Deforestation and clearance of land	• Installation of groundwater monitoring well within the proposed core conservation area to get a more accurate understanding of the groundwater characteristics. • Installation of piezometers to monitor the changes in groundwater level in compliance with Building Control Regulations 2003. • Monitoring of salinity near the eastern and western margins of the mangrove. • Schedule the proposed development in phases to minimise volume of dewatering at any one time. • Use recharge wells as necessary during the excavation (if with basements) to limit potential
	Re-shaping of topography in certain areas of the project area (i.e. terracing)	
	Excavation and dewatering of basements	
	Construction of residential buildings and associated roads and other infrastructure	

Environmental Parameter	Potential Source of Impacts	Additional Measures Recommended
		groundwater drawdown and effect on the baseflow flux in Sungei Cina. • Measurement of dewatering flux to inform a useful constraint on hydraulic conductivity and groundwater throughflow for improved predictive models. • Replenishment of freshwater supply to the native-dominated swamp forest via the options presented in detail in Section 8.5.1. The options include: i. diversion of stormwater run-off from the development (as shown in Figure 117) or the diversion of freshwater from existing underground drain to native-dominated freshwater swamp forest (as shown in Figure 116); and *NOTE: Assessment of the residual impacts on the assumption that these mitigation measures are implemented are discussed in Section 8.6.*

Table 92: Significance of Groundwater Residual Impacts

Environmental Parameters	Sensitive Receptor	Impact Intensity (I)	Impact Consequence (C) = (S x I)	Likelihood (L)	Impact Significance (C x L)
Baseflow Reduction	Sungei Cina (Priority 2)	Low	Low	Low	Minor
	Mangroves / Coastal Forest (Priority 2)	Low	Low	Low	Minor
	Proposed Core Conservation Area *(i.e. Native-dominated Freshwater Swamp Forest and Freshwater Stream (refer to Section 7.4.2))* (Priority 2)	Medium	Medium	Low	Minor
Groundwater Drawdown	Sungei Cina (Priority 2)	Low	Low	Low	Minor
	Mangroves / Coastal Forest (Priority 2)	Negligible	Imperceptible	Low	Negligible

Environmental Parameters	Sensitive Receptor	Impact Intensity (I)	Impact Consequence (C) = (S x I)	Likelihood (L)	Impact Significance (C x L)
	Proposed Core Conservation Area *(i.e. Native-dominated Freshwater Swamp Forest and Freshwater Stream (refer to Section 7.4.2))* (Priority 2)	Medium	Medium	Low	Minor

9.6 Environmental Monitoring and Management Programme for Groundwater

A summary detailing the environmental objectives, monitoring parameters, methods, location, and frequency of how the EMMP is to be implemented during the construction stage is provided in Table 93.

Table 93: Groundwater Monitoring and Management Plan during Construction Stage

Objectives	Strategy	Monitoring parameters	Method	Location	Monitoring Frequency*
To monitor the changes in groundwater level, especially within the proposed core conservation area	Monitoring	Groundwater levels	Installation of piezometers to monitor the changes in groundwater level in compliance with Building Control Regulations 2003. This will be included in the instrumentation and monitoring plan to be developed by the Qualified Person (QP) of the Contractor as part of plan submissions.	Within the development boundary, and more specifically the proposed core conservation area	Continuous monitoring during the whole duration of the project construction
To monitor the salinity within the mangrove areas	Monitoring	Salinity level	Monitoring of salinity level near the eastern margins of the southern mangrove area and western margins of the northern mangrove area of the mangrove. This can be done by the engaged EMMP consultant by HDB/Contractor.	Mangrove areas within Sungei Cina	Monthly monitoring
To minimise the volume of dewatering at any one time	Management	N/A	Schedule the proposed development in phases.	Development boundary	During the whole duration of the project construction
To limit potential groundwater drawdown and effect on the baseflow flux in Sungei Cina	Monitoring and Management	Groundwater levels	Use recharge wells as necessary during excavation (if with basements). This will be included in the instrumentation and monitoring plan to be developed by the Qualified Person (QP) of the Contractor as part of plan submissions.	Development boundary, especially areas where deep excavations take place	During deep excavations

*Note that preparation of a MonthlyReport to report the monitoring of groundwater level and salinity level, including assessment against guidelines and baseline report.

10 Environmental Monitoring and Management Plan

An EMMP has been prepared as part of this EIS for those environmental aspects which are impacted by the projects' activities during the construction phase. This section specifies the monitoring requirements and outline the project organisation; the roles and responsibilities relevant to implementation of the EMMP are detailed below.

10.1 Project Organisation during Construction Phase

The roles and responsibilities of the various parties responsible for implementing the EMMP are outlined below. The proposed project organization and lines of communication with respect to environmental protection works during construction phase are shown in Figure 143.

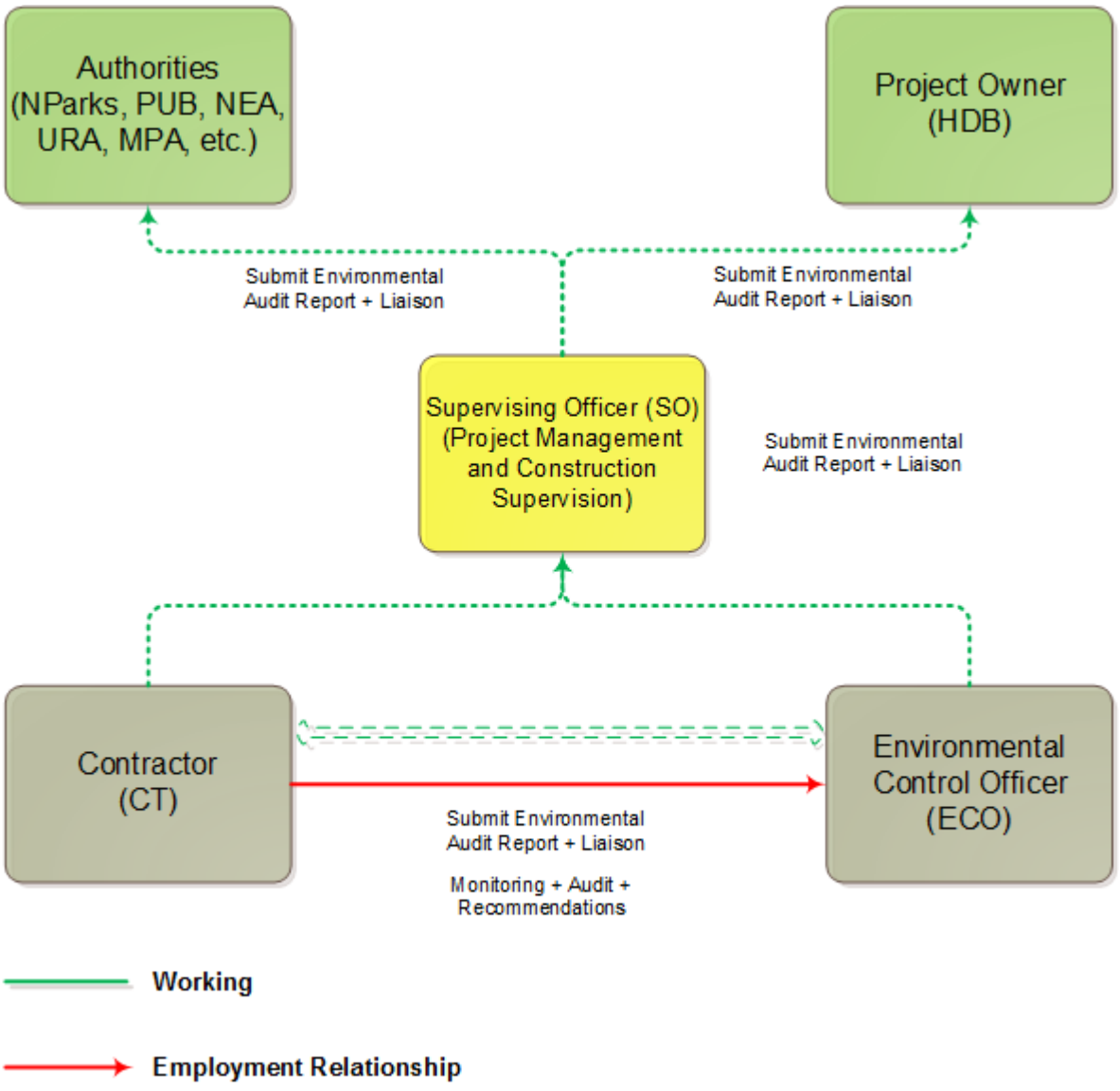


Figure 143: Project Organization and Lines of Communication during the Projects' Construction Phase

10.2 Roles and Responsibilities of the EMMP Members

10.2.1 Technical Agencies

Technical agencies constitute but not limited to NParks, PUB, NEA, URA, and MPA. These agencies shall assess and approve detailed contract specific EMMP, as elaborated in Section 10.5, prior to commencement of works.

10.2.2 Project Owner (HDB) and Resident Technical Officer (RTO)

HDB, being the project owner oversees timely the construction phase of the projects in accordance with the design. HDB officers in conjunction with the Resident officer (RTO) and site officers (SO and ECO) also check the project site for construction progress; and ensure the proper implementation of environmental mitigation and monitoring measures. HDB shall also respond to complaints from the members of the public if any, with inputs from technical agencies if required.

10.2.3 The Superintending Officer (SCO)

The term “Superintending Officer” refers to the person within the organization that is responsible for overseeing the construction works undertaken by various contractors and personnel. The SO should ensure that the construction works are performed by the contractors and personnel in accordance with the specification and contractual requirements. The SO should also:

- Monitor the contractors and personnel’s compliance with contract specifications and regulatory requirements, including the implementation of the environmental mitigation measures and ensure their effectiveness, and other aspects of the environmental audit program;
- Coordinate with Project’s Environmental, Health and Safety Officer (EHS Officer) to monitor the implementation of environmental audit program by an ECO and ensure that the requirements in the environmental audit program are fully followed;
- Coordinate and liaise with authorities for submission of environmental audit reports;
- Participate in the site audits undertaken by the ECO; and
- Adhere to the procedures to carry out complaint investigations.

10.2.4 The Contractor

The term “Contractor” refers to all construction contractors and sub-contractors working onsite at any time. In addition to reporting to the SO, the Contractor should:

- Work under the relevant contract scopes and other tender conditions;
- Employ an ECO to carry out monitoring, laboratory analysis, site inspections and reporting of the monitoring results;
- Provide necessary assistance to the ECO in carrying out monitoring works;
- Participate in the required site audits undertaken by the ECO and undertake any corrective actions instructed by the SO;
- Provide information and advice to the ECO regarding work activities which may contribute or continuously create adverse environmental conditions;
- Implement measures to reduce impacts where emission/discharge levels are exceeded;
- Adhere to the procedures to carry out complaint investigations; and
- Prepare detailed contract specific EMMP incorporating the relevant mitigation measures and monitoring works recommended in the EIS report and seek technical agencies’ approval prior to the commencement of any works. This detailed EMMP shall include as a minimum Standard

Operating Procedure (SOP) for handling and storage of hazardous chemicals, flora and fauna management plan including SOP for wildlife encounter, marine water management plan, individual environmental management plans as detailed in the NEA's SHE Specifications (air, vector, waste, noise, water pollution management plans), monitoring plans (including but not limited to noise, air, waste, ecology and water pollution), environmental impact register, existing legislation and environmental best practices to be implemented, contingency planning during emergency situations.

10.2.5 The Environment Control Officer (ECO)

The ECO shall be employed by the CT but may not be in any way an associated body of the CT, the SO or project's SHE team. The ECO should be mainly responsible for implementing the environmental monitoring program. He/she should be a registered Environmental Control Officer (ECO) with NEA and has at least two years' experience in environmental monitoring and auditing works. Resources to implement the environmental monitoring program should be allocated time to fulfil the environmental audit requirements during construction works as specified in the EIS Report. The ECO's duties include:

- Monitor environmental parameters and audit environmental performance as required in the environmental monitoring plan;
- Seek SO's agreement on equipment, locations and schedule of monitoring and auditing works;
- Analyse environmental monitoring data and audit findings, review the adequacy of implementation of mitigation measures and identify adverse environmental impacts;
- Carry out regular site audits against CTs' site practices, equipment and work methodologies with respect to pollution control and environmental mitigation, and effect proactive actions to pre-empt problems;
- Monitor compliance with conditions in the EIS, relevant environmental protection, pollution prevention and control regulations and contract specifications;
- Review environmental monitoring data and audit site environmental conditions;
- Report the monitoring and environmental audit results to the CT and the SO;
- After seeking SO's agreement, recommend suitable mitigation measures to the CT in the case of exceedance of emission/discharge levels;
- Formulate relevant environmental audit programs for the approval by the SO;
- Complete and submit all relevant environmental audit programs to the SO;
- After seeking SO's agreement, implement onsite environmental improvements, awareness, and enhancement matters;
- Adhere to the procedures to carry out complaint investigation; and
- Submit environmental audit reports to the SO in a timely manner.

10.3 Site Audit

Site surveillance provides a direct means to assess and ensure the project's environmental protection and pollution control measures are in compliance with the contract specifications. The ECO should inspect the construction activities regularly and routinely to ensure that the appropriate environmental protection and pollution control mitigation measures are properly and timely implemented based on the EMMP's recommendations. With well-defined pollution control and impact mitigation measures outlined and a well-established efficient remedial action reporting system, the site inspection is an effective "tool" to ensure acceptable environmental performance at the construction site.

The ECO is responsible to formulate environmental site inspections, deficiencies and the remedial action reporting system, and to carry out the site inspections. After consultation with Project's SHE Officer, the ECO should prepare a procedure for the site inspections, deficiencies and remedial action reporting requirements. This documentation shall be agreed to by the CT and approved by the SO within 21 days of the commencement of the construction contract.

Regular site inspections should be carried out at least once weekly for all the work areas during the construction phase. The inspections should cover the onsite environmental situation, pollution control and mitigation measures. Offsite environmental situations, which may be affected by onsite activities, (directly or indirectly) should also be reviewed.

10.4 Complaint Handling

The Public Relation Officer (PRO) is responsible for handling complaints and managing feedback and investigative work. The PRO shall be supported by the ECO and CT. Upon receipt of complaints, the PRO should undertake the following procedures:

- Log complaint and record the date when complaint is received onto the complaint database and inform the SO immediately;
- Investigate the complaint with the ECO to determine its validity and assess whether the source of the problem is due to construction works (the target time for response to the complainant is proposed to be 48 hours);
- If a complaint is valid and due to construction works, liaise with the ECO and CT on the mitigation measures and seek agreement from SO;
- Review the current situation and the ECO's and CT's implementation of the mitigation measures;
- Engage the ECO to undertake additional monitoring and auditing to verify the complaint if necessary. Ensure that any valid reasons for complaints do not re-occur by revising the work methods, procedures, machines and/or equipment, etc.;
- Submit complaint report (as well as the implementation of mitigation measures and the effectiveness of the mitigation measures as advised by the ECO) to the CT and the SO; and
- Log a record of the complaint, investigation, follow-up actions and the results in the environmental audit reports.

The CT, ECO and SO should provide all the necessary information and assistance to the PRO in order to complete the complaint investigation. Following the investigation, the CT should promptly undertake the mitigation measures agreed by project's SHE Officer. The SO should ensure that the measures will be undertaken by the CT. The CT and SO should also be responsible for the reporting of complaint investigation results and followed up actions.

10.5 Proposed EMMP

The EMMP is prepared for environmental impacts associated with the project and that were assessed in this EIS study, namely flora and fauna, hydrology and water quality and groundwater.

The EMMP details how the recommended mitigation measures prepared for the impact assessment are to be implemented and specifies the recommended monitoring measures to carry out. Since construction activities evolve over time, the EMMP is an adaptive document meant to be amended when necessary.

10.5.1 Proposed EMMP

A summary table detailing the EMMP's objectives, strategy, monitoring parameters, method, location and frequency is provided for each environmental parameter in the respective sections (refer to Section 7.8.2 for flora and fauna, Section 8.8 for hydrology and water quality and Section 9.6 for groundwater).

11 Conclusions and Recommendations

This section will present the summary of conclusions and recommendations from the environmental baseline surveys and the environmental impact assessment.

Environmental Baseline Findings

Baseline studies were carried out between Mar 2018 to Jan 2019 and a summary of the baseline findings is provided below.

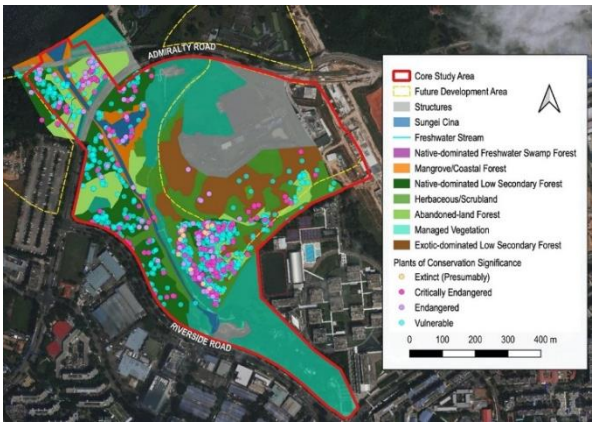


Figure 144: Vegetation Distribution and Distribution of Flora Species of Conservation Significance in the Core Study Area

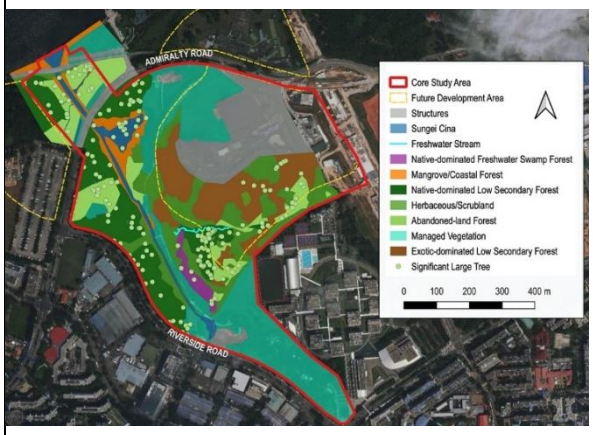


Figure 145: Distribution of Large Trees in the Core Study Area

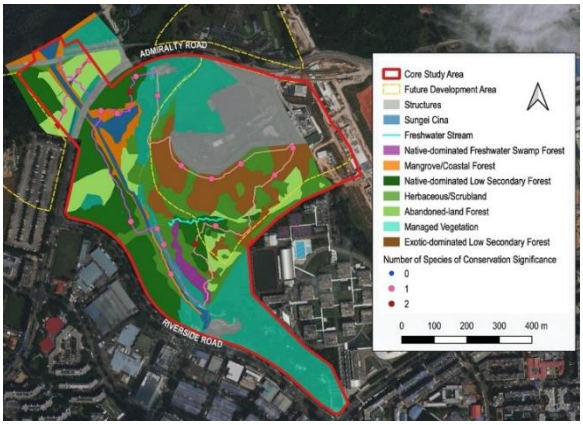


Figure 146: Distribution of Fauna Species of Conservation Significance in the Core Study Area

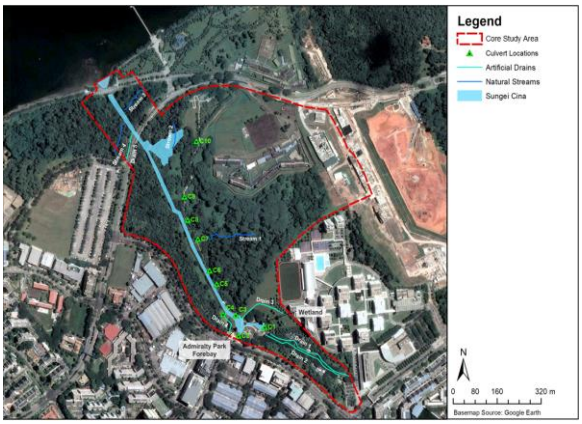


Figure 147: Existing Waterbodies and Culverts in the Core Study Area

- **Vegetation distribution** (see Figure 144) - Almost half of the core study area is composed of urban structures and managed vegetation (45.3%), followed by native dominated low secondary forest (19%), herbaceous/scrubland vegetation (15.6%), exotic-dominated secondary forest (13.2%), abandoned land forest (11.3%), mangrove/coastal forest (4.3%), native-dominated freshwater swamp forest (1.5%) and waterbodies. The mangrove/coastal forest located within Admiralty Park and the native-dominated freshwater swamp forest found near/at the southwestern corner of the proposed residential use are assessed to be of high ecological value.

- **Biodiversity, Flora** (see Figure 144 and Figure 145) – Of the 475 vascular plant species (e.g. ferns and flowering plants) documented, 162 species are of conservation significance to varying degrees, Many were planted in the past. These species are mainly concentrated near/at the southwestern corner of the proposed residential use. A total of 197 significant large trees and palms, comprising 44 species were documented. Close to 75% of them are found within Admiralty Park. The remaining 25% (53 trees of 13 species) are found in the southern part of the proposed residential use, most of which are commonly cultivated species.

- **Biodiversity, Fauna** (see Figure 146) – A total of 246 fauna species were recorded. 14 are of conservation significance to varying degrees. They are made up of one odonate, two butterflies, two reptiles and nine bird species. Though the highest fauna richness was recorded in northern Admiralty Park, with 37 species, there is no clear hotspot for fauna of conservation significant species.

- **Stream Mapping** (see Figure 147) – There are 4 natural streams, 5 concrete drains, 10 culverts and Sungei Cina identified. All streams have continuous low-flow when no rain occurs on site or at surrounding areas. No flow condition was observed for certain drains during dry weather. During wet weather, high flow rate and increased water levels were observed at certain drains and along Sungei Cina. Most of the natural streams and drains flow to Sungei Cina through existing concrete culverts located at their downstream. The water flow of Sungei Cina is influenced by tides.

- **Water Quality** – Water samples were collected along the upstream, midstream and downstream of Sungei Cina to observe its in-situ and ex-situ water quality conditions. Most water quality parameters met NEA Trade Effluent Discharge limits. The concentration of ex-situ parameters did not vary significantly across the assessed locations. Comparison against relevant guidelines indicated that the water quality had a relatively high nutrient content, which suggest that water quality in Sungei Cina might effect aquatic life in the Singei, in line with dissolved oxygen (DO) level findings from in-situ results.

- **Groundwater -** Based on the existing groundwater levels, the inferred groundwater flow direction is in the west-southwest towards Sungei Cina. Groundwater in areas near the Straits of Johor are expected to flow towards the sea. Saline groundwater discharge could be due to marine deposits in the soil and/or exchange with the Johor Straits.

Proposed Core Conservation Area (CCA)

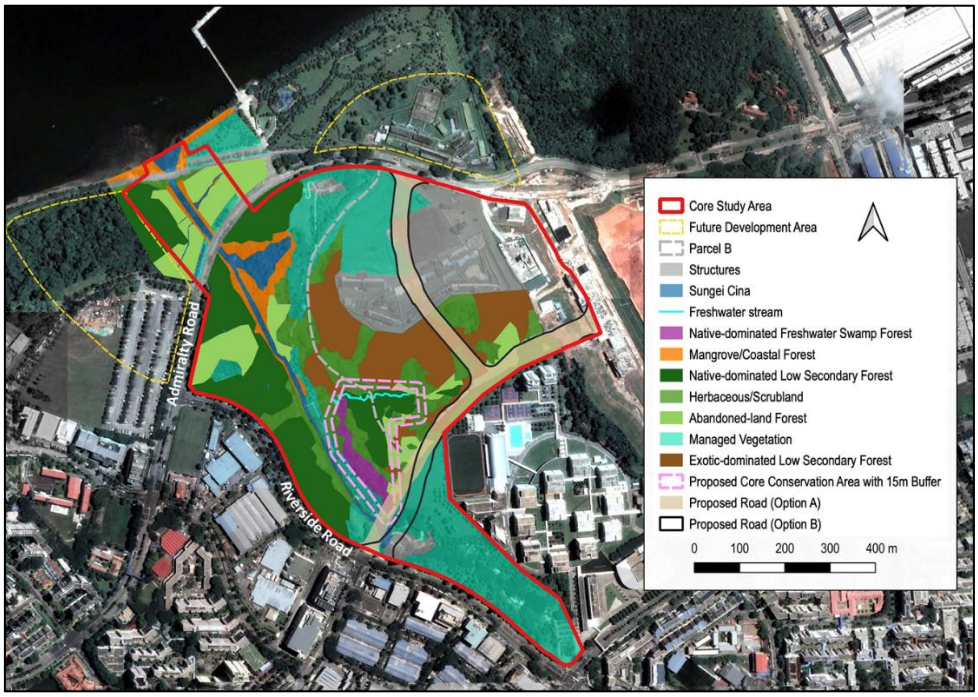


Figure 148: Proposed Core Conservation Area (dashed pink)

Based on the baseline findings, a 4.39 ha area (inclusive of 15 m buffer), as shown in Figure 148, is recommended to be retained based on the following considerations.

- **Presence of rare and native vegetation types**, i.e. native-dominated freshwater swamp forest and native-dominated low secondary forest. The latter acts as a buffer to the former and is an early-successional secondary forest that has the potential to transit into a more mature forest
- **Freshwater stream feeds the native-dominated freshwater swamp forest**
- **High concentration of flora species of conservation significance and significant large trees**
- The 15m buffer protects the retained habitats from disturbances

Environmental Impact Assessment

This Study discusses the methodologies used for impact identification, prediction and assessment on environmental parameters including biodiversity, hydrology, water quality and groundwater, throughout the course of the projects.

Recommended Mitigation Measures & Environmental Monitoring and Management Plan

Table 94 summarises the key mitigation measures that have been developed for adoption, to minimise the adverse impacts throughout the course of the projects.

Table 94: Recommended Key Mitigation Measures

Environmental Parameter	Recommended Key Mitigation Measures and Best Management Practices	
	During Pre-Construction Phase	**During Construction & Operational Phase**
Flora and Fauna	• Retain habitats as much as possible, especially the CCA with a 15-m buffer. • Enhance landscape connectivity. • Implement bird-friendly building design. • Raise awareness on human-wildlife conflicts. • Minimise unnecessary works by revising contractors' method statements. • Establish Tree Protection Zones; Transplant/harvest species of conservation significance • Execute tree-felling works outside of bird breeding and nesting season, if possible.	• Provide soil erosion control measures; Ensure slope stabilisation and grading works will not impact the CCA. • Execute fauna response and rescue protocol when fauna is found on site. • Raise awareness on biodiversity and minimise human-wildlife conflicts by conducting toolbox briefings to workers. • Conduct regular inspections on contractors' compliance to reduce fauna mortality and negative impacts to surrounding habitats. • Reduce insecticide use.
Hydrology and Water Quality	**For proposed residential development** • Conduct detailed hydrological and erosion control study on stormwater to be diverted from future development to CCA. • Design for stormwater peak flow to be lower/or equal to existing peak flow of current condition. • Divert stormwater run-off from existing drain and future development to freshwater stream. • Create green areas to buffer against the edge effects of the future development. **For proposed road development** • Avoid the CCA as much as possible. • Avoid introducing road structures such as columns or supporting structures directly on the man-made freshwater pond and Sungei Cina as much as possible.	• Dry out man-made freshwater pond at Admiralty Park forebay and install silt curtains before road construction; Divert flow to Sungei Cina while ensuring no erosion along its banks. • Implement settling pond to limit discharge of suspended solids into waterbodies; Monitor and treat effluent before released into waterbodies. • Undertake precautionary management controls measures (e.g. regular inspections, housekeeping). • Install portable toilets and collect sanitary effluents weekly for disposal. • Develop protocols for proper handling, transfer and storage of chemical substances to prevent chemical spillage; Conduct periodical leak detection tests. • Periodically dispose stored solid and toxic waste by licensed waste management contractors.
Groundwater	• Install piezometers to monitor changes in groundwater level. • Monitor salinity near the eastern and western margins of the Sungei Cina mangrove. • Schedule developments in phases to minimise volume of dewatering at any one time. Use recharge wells as necessary during excavation works to limit groundwater drawdown and baseflow reduction on Sungei Cina.	

With the implementation of the mitigation measures, the resultant impact significance is assessed to be minor for most of the environmental parameters, as shown in Table 95.

Table 95: Summary of Impact Evaluation and Residual Impact Significance for all Environmental Parameters

Environmental Parameter	Sensitive Receptors	Unmitigated Impact Significance	Mitigated Impact Significance
Flora and Fauna	**Proposed CCA** Due to residential development Due to road development - Option A - Option B	Major *(including CCA)* Major Minor	**Minor** ***(excluding CCA)*** **Major** **Minor**
	Sungei Cina Mangroves (within Admiralty Park)	Minor	**Minor**
Hydrology and Water Quality	**Proposed CCA** Due to residential development Due to road development - Option A - Option B	Minor – Major	**Minor**
	Sungei Cina	Negligible - Major	**Negligible - Minor**
	Sungei Cina Mangroves (within Admiralty Park)	Negligible - Minor	**Negligible - Minor**
	Aquatic life	Negligible - Major	**Negligible - Minor**
Groundwater	**Proposed CCA**	Major	**Minor**
	Sungei Cina	Minor	**Minor**
	Sungei Cina Mangroves (within Admiralty Park)	Negligible - Minor	**Negligible - Minor**

EMMP has also been developed to be implemented during the construction phase of the projects to ensure that residual impacts are minimised, the effectiveness of mitigation measures are justified and contingency plans are prepared/implemented, as needed.

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Appendix A

Flora Species List

Scientific Name	Common Name	Family	National Conservation Status	Habit
Acacia auriculiformis	Acacia-tree, Earleaf Acacia, Black Wattle, Wattle, Bunga Siam, Akasia Kuning, Yellow Wattle, Ear-pod Wattle, Northern Black Wattle, Papua Wattle	Fabaceae	Exotic; naturalised	Tree
Acalypha siamensis	Tumput, Teh Kampong	Euphorbiaceae	Exotic; casual	Shrub
Acalypha wilkesiana	Copper Leaf, Jacobs Coat	Euphorbiaceae	Exotic	Shrub
Acanthus volubilis	N/A	Acanthaceae	Native; vulnerable	Shrub
Acrostichum aureum	Leather Fern, Paku Laut, Mangrove Fern, Coarse Swamp Fern, Golden Leather Fern, Piai Raya, Larat, Piai	Pteridaceae	Native; common	Herb
Acrostichum speciosum	N/A	Pteridaceae	Native; common	Herb
Adenanthera pavonina	Saga, Coral Bean Tree, Daun Tumpul, Suga, Redwood, Red Sandalwood Tree, Peacock Flower Fence, Barbados Pride, Coral Pea, Red Bead Tree, Circassian Bean, Coralwood	Fabaceae	Exotic; naturalised	Tree
Adiantum latifolium	Broadleaf Maidenhair	Adiantaceae	Exotic; naturalised	Herb
Adinandra dumosa	Tiup-tiup, Tiup Tiup, Tetiup	Pentaphylacaceae	Native; common	Tree
Agelaea macrophylla	Akar Pinang Ketul, Akar Pinang Kutai	Connaraceae	Native; critically endangered	Climber
Ageratum conyzoides	N/A	Asteraceae	Exotic; naturalised	Herb
Aglaonema commutatum	Chinese Evergreen, Silver Evergreen, Pewter, Painted Drop-Tongue	Araceae	Exotic; casual	Herb
Agrostistachys borneensis	N/A	Euphorbiaceae	Native; common	Tree
Aidia densiflora	Wild Randa	Rubiaceae	Native; vulnerable	Tree
Allamanda cathartica	Allamanda, Golden-trumpet, Common Allamanda, Yellow Allamanda, Akar Cempaka Hutan, Bunga Akar Kuning, Akar Chempaka Kuning, Allamada Trumpet Vine, Golden Trumpet Vine	Apocynaceae	Exotic; casual	Climber
Alocasia longiloba	Keladi Rimau, Keladi Ular, Birah Kijang, Birah Hitam	Araceae	Native; common	Herb
Alocasia macrorrhizos	Giant Taro, Greater Alocasia, Birah Negeri, Elephant's Ear	Araceae	Exotic; naturalised	Herb
Alpinia aquatica*	N/A	Zingiberaceae	Native; critically endangered	Herb
Alstonia angustifolia	Red-leafed Pulai	Apocynaceae	Native; common	Tree
Alstonia angustiloba	Common Pulai, Pulai	Apocynaceae	Native; common	Tree
Alstonia scholaris	N/A	Apocynaceae	Exotic	Tree
Amphineuron opulentum	N/A	Thelypteridaceae	Native; endangered	Climber
Andira inermis	Brown Heart, Cabbage Tree, Bastard Mahogany, Bay Seed, Cabbage Bark, Crown Heart, Partridge Wood, Pig's Turd, Angelin, River Almond	Fabaceae	Exotic; casual	Tree
Angiopteris evecta	Elephant Fern, Paku Gajah, Turnip Fern, Duku	Marattiaceae	Native; vulnerable	Herb
Anisophyllea disticha	Mousedeer Tree, Leechwood, Kayu Pachat, Kayu Ribu Ribu, Pokok Kanchil, Raja Berangkat, Balam Ayam, Rambai Ayam	Anisophyllaceae	Native; common	Shrub
Annona muricata	N/A	Annonaceae	Exotic	Tree
Antiaris toxicaria*	Upas tree, Sacking tree, Ipoh Tree	Moraceae	Native; critically endangered	Tree
Antidesma bunius	Chinese Laurel, Currantwood, Buni, Berunai, Bignay	Phyllanthaceae	Exotic; casual	Tree
Aphanamixis polystachya*	Pasak Lingga, Amoora, Cikih, Kasai Paya, Kulim Burung, Pithraj Tree	Meliaceae	Native; endangered	Tree
Aporosa frutescens	Bastard Rukam, Rukam Utan	Phyllanthaceae	Native; common	Tree
Aporosa nigricans	N/A	Phyllanthaceae	Native; endangered	Tree
Archidendron contortum	N/A	Fabaceae	Native; vulnerable	Tree
Archidendron jiringa	Jering	Fabaceae	Native; vulnerable	Tree
Archontophoenix alexandrae	N/A	Arecaceae	Exotic	Tree
Ardisia elliptica	Seashore Ardisia, Mata Pelandok, Mempenai, Rempenai, Shoebutton Ardisia, Mata Pelanduk, Penah, Periah, Buah Letus, Cempenai, Daun Bisa Hati, Mata Ayam, Mata Itek	Myrsinaceae	Native; endangered	Tree
Areca catechu	Areca, Betel-nut Palm, Pinang, Betel Palm, Areca-nut, Pinang Siri	Arecaceae	Exotic; casual	Tree

Arenga hookeriana	N/A	Arecaceae	Exotic	Shrub
Artabotrys crassifolius	N/A	Annonaceae	Native; critically endangered	Climber
Artabotrys maingayi	N/A	Annonaceae	Native; critically endangered	Climber
Arthrophyllum diversifolium	Ivy Palm, Tumbuh Kelapa, Common Ivy Palm, Tumbuh Kelapa, Tumbuh Nyior	Araliaceae	Native; common	Tree
Artocarpus elasticus	Terap, Getah Terup	Moraceae	Native; common	Tree
Artocarpus heterophyllus	Jackfruit, Nangka, Jack, Jak, Jake Tree	Moraceae	Exotic; casual	Tree
Artocarpus integer	Cempedak, Champedah, Chempedak, Chempedak Utan, Bangkong, Baroh	Moraceae	Exotic; casual	Tree
Arundina graminifolia	N/A	Orchidaceae	Native; common	Herb
Asplenium longissimum	Spleenwort	Aspleniaceae	Native; common	Epiphyte
Asplenium nidus	Bird's Nest Fern, Rumah Langsuyar, Paku Pandan	Aspleniaceae	Native; common	Epiphyte
Asystasia gangetica	Coromandel, Chinese Violet, Creeping Foxglove, Ganges Primrose	Acanthaceae	Exotic; naturalised	Herb
Avicennia alba	N/A	Acanthaceae	Native; common	Tree
Avicennia officinalis	N/A	Acanthaceae	Native; common	Tree
Avicennia rumphiana	N/A	Acanthaceae	Native; common	Tree
Axonopus compressus	Cow Grass	Poaceae	Exotic; naturalised	Herb
Baccaurea bracteata	N/A	Phyllanthaceae	Native; critically endangered	Tree
Baccaurea parviflora	N/A	Phyllanthaceae	Native; common	Tree
Baccaurea sumatrana*	N/A	Phyllanthaceae	Native; vulnerable	Tree
Bambusa vulgaris	Common Bamboo, Golden Bamboo	Poaceae	Exotic; casual	Shrub
Barringtonia asiatica*	N/A	Lecythidaceae	Native; critically endangered	Tree
Barringtonia racemosa*	N/A	Lecythidaceae	Native; critically endangered	Tree
Beilschmiedia madang*	Huru, Mauseu Tahang, Medang Mekolopon	Lauraceae	Native; endangered	Tree
Bidens alba	Shepherd's Needles, Butterfly Needles, Hairy Beggarticks, Spanish Needles	Asteraceae	Exotic	Herb
Blechnum orientale	Centipede Fern, Paku Lipan	Blechnaceae	Native; common	Herb
Bouea oppositifolia*	Plum Mango, Marian Plum, Rumenia	Anacardiaceae	Native; vulnerable	Tree
Bougainvillea glabra	N/A	Nyctaginaceae	Exotic	Shrub
Bridelia tomentosa	Kenidai, Kernong, Kernam	Phyllanthaceae	Native; common	Tree
Bromheadia finlaysoniana	Finlayson's Bromheadia, Seramen	Orchidaceae	Native; common	Herb
Bruguiera cylindrica	N/A	Rhizophoraceae	Native; common	Tree
Bruguiera gymnorhiza	N/A	Rhizophoraceae	Native; common	Tree
Buchanania arborescens	Sparrows' Mango, Otak Udang, Katak Udang, Ketak Udang, Puah Pipit, Puan, Terentang Tikus	Anacardiaceae	Native; common	Tree
Caesalpinia crista	N/A	Fabaceae	Native; vulnerable	Climber
Calamus erinaceus	N/A	Arecaceae	Native; vulnerable	Climber
Callicarpa longifolia	Long Leaved Beauty Berry, Nasi-nasi, White-berried Malayan Lilac, Capal, Capal Kecil, Karat Besi, Tampah Besi, Tampal Besi, Tampung Besi, Tampung Besi Putih	Lamiaceae	Native; endangered	Shrub
Calophyllum ferrugineum	N/A	Clusiaceae	Native; common	Tree
Calophyllum inophyllum*	N/A	Clusiaceae	Native; critically endangered	Tree
Calophyllum lanigerum var. austrocoriaceum	N/A	Clusiaceae	Native; endangered	Tree
Calophyllum pulcherrimum	Bintangor Gasing, Bintangor Batu	Clusiaceae	Native; common	Tree
Calophyllum soulattri	N/A	Clusiaceae	Native; critically endangered	Tree
Calopogonium mucunoides	Calopo, Calapo, Wild Ground Nut	Fabaceae	Exotic; naturalised	Climber
Campnosperma auriculata	Terentang, Serentang, Terentang Daun Besar, Napan	Anacardiaceae	Native; common	Tree
Campylospermum serratum	Toothed-Leaf Gamphia	Ochnaceae	Native; common	Tree
Cansjera rheedii	Rheed's False Olive	Opiliaceae	Native; vulnerable	Climber
Canthium confertum	N/A	Rubiaceae	Native; endangered	Tree
Carallia brachiata	Corkwood, Corky Bark, False Kelat, Maniawiga, Bongbong, Bongkok, Gandang, Ganding, Janggut Keli, Kesinga, Mesinga, Merpoi, Mersinga, Merpuing, Tengkawa	Rhizophoraceae	Native; endangered	Tree
Caryota mitis	Fishtail Palm, Common Fishtail Palm, Burmese Fishtail Palm, Clustered Fishtail Palm, Rabok, Rebuk, Meridin, Dudok, Tukas	Arecaceae	Native; common	Tree

Cassia fistula	Golden Shower Tree, Monkey-pod Tree, Shower Of Gold, Indian Laburnum, Purging Cassia, Rajah Kayu, Pudding Pipe Tree, Golden Rain Tree, Golden Shower, Bereksa, Kasia Sena	Fabaceae	Exotic	Tree
Casuarina equisetifolia	Horsetail Tree, Beach She-Oak, Casuarina, Whistling Pine, Aru, Common Ru, Southsea Ironwood, Mile Tree, Australian Pine, Cemara Laut, Common Rhu, Horsetail Casuarina, She-oak, Ru	Casuarinaceae	Native; common	Tree
Catharanthus roseus	N/A	Apocynaceae	Exotic; naturalised	Shrub
Cayratia japonica	N/A	Vitaceae	Native; critically endangered	Climber
Cecropia pachystachya	Ambay Pumpwood	Urticaceae	Exotic; naturalised	Tree
Centotheca lappacea	Rumput Lilit Kain, Rumput Darah	Poaceae	Native; critically endangered	Herb
Centrosema pubescens	Butterfly Pea, Centro	Fabaceae	Exotic; naturalised	Climber
Cerbera odollam*	N/A	Apocynaceae	Native; vulnerable	Tree
Chamaesyce hirta	Hairy Spurge, Ara Tanah, Asthma Weed, Snake Weed	Euphorbiaceae	Exotic; naturalised	Herb
Champereia manillana	False Olive, Chemperai, Cheperi, Cimpri, Cipreh, Pokok kucing-kucing	Opiliaceae	Native; common	Tree
Christella parasitica	N/A	Thelypteridaceae	Cryptogenic	Herb
Christella subpubescens	N/A	Thelypteridaceae	Native; common	Herb
Cinnamomum iners	Wild Cinnamon, Kayu Manis Hutan, Kayu Manis, Clove Cinnamon, Medang Teja, Teja Lawang	Lauraceae	Native; common	Tree
Cissus hastata	N/A	Vitaceae	Cryptogenic	Climber
Cissus repens*	N/A	Vitaceae	Native; critically endangered	Climber
Citrus x microcarpa	Lime	Rutaceae	Exotic	Shrub
Claoxylon indicum	Laping Budak, Jarak Kayu, Lampin Budak	Euphorbiaceae	Native; common	Tree
Clausena excavata	Pink Lime-Berry, Cama, Cemama, Cemamar, Cerek, Cerek Hitam, Kemantu Hitam, Secerek, Semeru, Suntang Hitam	Rutaceae	Native; common	Shrub
Cleistanthus hirsutulus*	N/A	Phyllanthaceae	Native; presumed extinct	Tree
Cleistanthus sumatranus*	N/A	Phyllanthaceae	Native; vulnerable	Tree
Cleome rutidosperma	Fringed Spiderflower, Ciliate Spider-Flower, Consumption Weed, Wild Cat's Whiskers	Cleomaceae	Exotic; naturalised	Herb
Clerodendrum laevifolium	Swaddling Flower, Celeguri, Guriam, Kecolam, Keculun, Lampin badak, Lampin Budak, Lelampang badak, Pencolam, Puding, Seleguri, Seleguri betina, Selulang bukit, Sempayan pitu, Tudung roman, Uluh ulai, Unting-unting	Lamiaceae	Native; common	Tree
Clerodendrum villosum	Chapaneng	Lamiaceae	Native; vulnerable	Shrub
Clidemia hirta	Koster's Curse	Melastomataceae	Exotic; naturalised	Shrub
Clinacanthus nutans	Sabah Snake Grass	Acanthaceae	Exotic	Shrub
Coccinia grandis	Ivy Gourd, Scarlet Gourd, Kowai	Cucurbitaceae	Exotic; naturalised	Climber
Cocos nucifera	Coconut, Kelapa, Niyor, Coconut Palm	Arecaceae	Exotic; naturalised	Tree
Colocasia esculenta	Cocoyam, Taro, Dasheen, Ubi Keladi, Eddoe, Elephant's Ear, Keladi, Yam	Araceae	Exotic; casual	Herb
Commelina diffusa	Climbing Dayflower, Spreading Dayflower	Commelinaceae	Cryptogenic	Herb
Connarus semidecandrus	N/A	Connaraceae	Native; critically endangered	Climber
Cordyline fruticosa	Cabbage Palm, Good Luck Plant, Palm Lily	Laxmanniaceae	Exotic; casual	Shrub
Costus malortieanus	Spiral Ginger, Stepladder Plant, Spiral Flag	Costaceae	Exotic	Herb
Costus speciosus	Crepe Ginger, Setawar Tawar, Spiral Flag, Cane Reed, Malay Ginger, Wild Ginger, Spiral Ginger, White Costus	Costaceae	Native; common	Herb
Cratoxylum cochinchinense*	Tree-Avens, Yellow Cow Wood, Derum Selunchor, Kayu Arang, Kemutong	Hypericaceae	Native; endangered	Tree
Cratoxylum formosum	N/A	Hypericaceae	Native; endangered	Tree
Cuscuta australis	N/A	Convolvulaceae	Cryptogenic	Climber
Cyathea latebrosa	Tree Fern, Paku	Cyatheaceae	Native; vulnerable	Tree
Cyathula prostrata	Hookweed, Pastureweed, Nyarang	Amaranthaceae	Native; common	Shrub
Cymbidium finlaysonianum*	N/A	Orchidaceae	Native; critically endangered	Epiphyte
Cynometra cauliflora	Nam Nam, Katak Puru, Puki Anjing, Namu Namu	Fabaceae	Exotic	Tree
Cynometra ramiflora*	N/A	Fabaceae	Native; critically endangered	Tree
Cyperus cyperoides	N/A	Cyperaceae	Cryptogenic	Herb

Cyrtophyllum fragrans	Tembusu, Tembusu Hutan, Tembusu Tembaga, Common Tembusu, Temusu, Temensu, Temesu, Semesu, Anan, Tembusu-padang, Ironwood	Gentianaceae	Native; common	Tree
Cyrtostachys renda*	Sealing-wax Palm, Pinang Rajah, Maharajah Palm, Lipstick Palm, Red Sealing Wax	Arecaceae	Native; presumed extinct	Shrub
Dalbergia candenatensis	N/A	Fabaceae	Native; common	Climber
Davallia denticulata	Rabbit's Foot Fern, Paku Tertutup	Davalliaceae	Native; common	Epiphyte
Decaspermum fruticosum	Tailor Tree	Myrtaceae	Native; vulnerable	Tree
Delonix regia	N/A	Fabaceae	Exotic	Tree
Dendrobium crumenatum	N/A	Orchidaceae	Native; common	Epiphyte
Derris trifoliata	N/A	Fabaceae	Native; common	Climber
Desmodium triflorum	Creeping tick trefoil, Three-flower beggarweed	Fabaceae	Cryptogenic	Herb
Dicranopteris linearis	Resam, Bengkawang	Gleicheniaceae	Native; common	Climber
Dieffenbachia seguine	Dumbcane	Araceae	Exotic; casual	Herb
Digitaria bicornis	N/A	Poaceae	Native; common	Herb
Dillenia excelsa*	N/A	Dilleniaceae	Native; critically endangered	Tree
Dillenia suffruticosa	Simpuh Air, Simpoh Air, Shrubby Simpoh, Simpoh Ayer, White Simpoh, Yellow Simpoh	Dilleniaceae	Native; common	Shrub
Dimocarpus longan	Longan, Mata Kuching, Lungen, Dragon's Eye	Sapindaceae	Exotic; casual	Tree
Dimocarpus longan ssp. malesianus	Longan, Mata Kuching, Lungen, Dragon's Eye	Sapindaceae	Exotic	Tree
Dioscorea bulbifera	N/A	Dioscoreaceae	Cryptogenic	Climber
Dioscorea pyrifolia	N/A	Dioscoreaceae	Native; common	Climber
Diospyros buxifolia*	N/A	Ebenaceae	Native; vulnerable	Tree
Diospyros lanceaefolia	N/A	Ebenaceae	Native; common	Tree
Dipterocarpus alatus	N/A	Dipterocarpaceae	Not listed	Tree
Dipterocarpus grandiflorus*	N/A	Dipterocarpaceae	Native; vulnerable	Tree
Dischidia nummularia	Button Orchid, Daun pitis kecil	Apocynaceae	Native; common	Epiphyte
Dolichandrone spathacea	N/A	Bignoniaceae	Native; critically endangered	Tree
Dracaena fragrans	Corn Palm, Palmillo, Fortune Plant, Corn Plant, Senjuang Wangi, Dragon Plant, Iron Plant	Ruscaceae	Exotic; casual	Shrub
Dracaena reflexa	Song of India, Pride of India, Song of Jamaica	Ruscaceae	Exotic	Shrub
Dracaena sanderiana	Lucky Bamboo, Belgian Evergreen, Ribbon Plant, Sander's Dracaena	Ruscaceae	Exotic	Shrub
Dracaena surculosa	Gold Dust Dracaena, Spotted Dracaena, Japanese Bamboo	Ruscaceae	Exotic	Shrub
Drynaria quercifolia	N/A	Polypodiaceae	Native; common	Epiphyte
Durio zibethinus	Durian, Durian Kampong	Malvaceae	Exotic; casual	Tree
Echinodorus palaefolius	N/A	Alismataceae	Exotic	Herb
Eclipta prostrata	White Heads, Aring-Aring, False Daisy	Asteraceae	Exotic; naturalised	Herb
Elaeis guineensis	Oil Palm, Macaw Fat, African Oil Palm, Kelapa Sawit, Kelapa Bali, Obe Palm, Wild Oil Palm	Arecaceae	Exotic	Tree
Elaeocarpus ferrugineus	Rusty Oil Fruit	Elaeocarpaceae	Native; common	Tree
Elaeocarpus grandiflorus	N/A	Elaeocarpaceae	Exotic	Tree
Elaeocarpus mastersii	Small-leafed Oil-fruit, Cemantung Merah, Lempedu Burung, Medang Asam	Elaeocarpaceae	Native; common	Tree
Elaeocarpus pedunculatus	N/A	Elaeocarpaceae	Native; common	Tree
Elaeocarpus petiolatus	Broad-leafed Oil Fruit, Derumun Babi, Derumun Babi Hitam, Hempedu Ular, Kayu Sepuh, Medang, Medang Kelawar, Medang Keli, Medang Manih, Medang Musang, Medang Pipi Lokan, Medang Tanjung, Paruh-Paruh	Elaeocarpaceae	Native; common	Tree
Eleusine indica	Indian Goosegrass, Silver Crabgrass, Yardgrass, Wiregrass, Crowfoot Grass	Poaceae	Exotic; naturalised	Herb
Embelia canescens	N/A	Myrsinaceae	Native; endangered	Climber
Embelia ribes	False Black Pepper, White-Flowered Embelia	Myrsinaceae	Native; common	Climber
Endospermum diadenum	Bulan-bulan Tree, Senduk Senduk Mata	Euphorbiaceae	Native; vulnerable	Tree

Epipremnum aureum	Ivy Arum, Golden Pothos, Money Plant, Devil's Ivy	Araceae	Exotic; casual	Climber
Erycibe leucoxyloides	N/A	Convolvulaceae	Cryptogenic	Climber
Erycibe tomentosa	Sawtooth Coriander, Culantro, Long Coriander	Convolvulaceae	Native; common	Climber
Erythrophleum suaveolens	Ordeal Tree	Fabaceae	Exotic	Tree
Eulophia graminea	N/A	Orchidaceae	Cryptogenic	Herb
Excoecaria agallocha	Blind-Your-Eyes, Buta-Buta, Bebuta, Milky Mangrove, Kayu Buta-buta, Kampetti, Thilla, Tilai	Euphorbiaceae	Native; common	Tree
Fagraea auriculata*	N/A	Gentianaceae	Native; critically endangered	Climber
Falcataria moluccana	Albizia	Fabaceae	Exotic; naturalised	Tree
Fibraurea tinctoria	Albizia, Kayu Machis, Batai, Peacocksplume	Menispermaceae	Native; common	Climber
Ficus aurata var. aurata	Akar badi, Akar Kinching Kerbau, Akar Kuning, Akar kunyit, Akar penawar, Sekunyit	Moraceae	Native; vulnerable	Tree
Ficus benghalensis	N/A	Moraceae	Exotic; casual	Strangler
Ficus benjamina	Yellow Hairy Fig	Moraceae	Cryptogenic	Strangler
Ficus deltoidea*	N/A	Moraceae	Native; critically endangered	Epiphyte
Ficus fistulosa	Yellow Stem Fig	Moraceae	Native; common	Tree
Ficus grossularioides	Common Yellow Stem-Fig, Ara Serapat, Kelampung Bukit	Moraceae	Native; common	Tree
Ficus heteropleura	Ara putih, White-leafed Fig	Moraceae	Native; common	Climber
Ficus hispida	Hairy Fig, Rough-leafed stem-fig	Moraceae	Exotic	Tree
Ficus microcarpa	Sandy-Leafed Fig	Moraceae	Native; common	Strangler
Ficus punctata	Malayan Banyan, Jejawi, Curtain Fig, Chinese Banyan, Glossy-leaf Fig, Jawi Jawi, Small-Fruited Fig, Indian Laurel Fig, Laurel Fig	Moraceae	Exotic	Climber
Ficus recurva var. ribesoides	N/A	Moraceae	Native; critically endangered	Climber
Ficus religiosa	Climbing Fig, Tangisong Burong	Moraceae	Exotic; naturalised	Strangler
Ficus variegata	Akar beringin, Sepedih	Moraceae	Native; common	Tree
Ficus vasculosa	White Fig, Ara Nasi, Pulut-Pulut, Sepedih, Tampang Burung	Moraceae	Native; endangered	Tree
Fimbristylis littoralis	N/A	Cyperaceae	Cryptogenic	Herb
Flagellaria indica	Flagellaria, Rotan Dini, False Rattan	Flagellariaceae	Native; common	Climber
Garcinia griffithii	N/A	Clusiaceae	Native; endangered	Tree
Garcinia hombroniana*	N/A	Clusiaceae	Native; endangered	Tree
Gironniera nervosa	Rough-Laurel	Cannabaceae	Native; common	Tree
Glochidion cf arborescens	N/A	Phyllanthaceae	Not listed	Tree
Glochidion lutescens	Kasap, Common Rough-Laurel, Hampas Tebu, Medang Berbulu, Medang Hampas Tebu, Medang Hitam, Medang Kasap, Medang Merpoi, Medang Tarah, Mesekam, Tangisan Burung, Tapis, Tarah	Phyllanthaceae	Native; critically endangered	Climber
Glochidion superbum	N/A	Phyllanthaceae	Native; common	Tree
Gnetum gnemon*	Climbing Lily, Tiger's Claws, Tiger Claw, Flame Lily, Glory Lily, Gloriosa Lily	Gnetaceae	Native; critically endangered	Tree
Gnetum microcarpum	N/A	Gnetaceae	Native; critically endangered	Climber
Goniophlebium percussum	N/A	Polypodiaceae	Native; vulnerable	Epiphyte
Gonystylus confusus*	N/A	Thymelaeaceae	Native; endangered	Tree
Guettarda speciosa*	N/A	Rubiaceae	Native; endangered	Tree
Guioa bijuga	N/A	Sapindaceae	Native; critically endangered	Tree
Guioa pleuropteris*	Nyamok, Senyamok	Sapindaceae	Native; vulnerable	Tree
Gymnanthemum amygdalinum	N/A	Asteraceae	Exotic	Shrub
Gynochthodes sublanceolata	Akar Lampai Hitam	Rubiaceae	Native; common	Climber
Gynochthodes umbellata	Akar Ketang, Akar Perut Ayam, Buah Butang, Mengkudu Akar, Mengnkudu Hutan, Mengkudu Jantan, Mengkukdu Kechil	Rubiaceae	Native; common	Climber
Gynotroches axillaris	Akar Lampai Hitam	Rhizophoraceae	Native; common	Tree
Hanguana malayana*	N/A	Hanguanaceae	Native; vulnerable	Herb
Haplopteris elongata	N/A	Vittariaceae	Native; common	Epiphyte
Hedyotis auricularia	Mata Keli, Fish Eyes, Bulu Bulu, Pianggu Jantan	Rubiaceae	Native; common	Herb

Heliconia psittacorum	Parrot's Beak, Parakeet Flower, Parrot's Flower, Parrot's Plantain, False Bird-of-Paradise	Heliconiaceae	Exotic; casual	Herb
Hemigraphis alternata	Red Ivy	Acanthaceae	Exotic	Shrub
Hemigraphis primulifolia	Red Ivy, Red Flame Ivy, Metal Leaf	Acanthaceae	Exotic; naturalised	Herb
Heritiera littoralis	N/A	Malvaceae	Native; endangered	Tree
Hevea brasiliensis	Rubber Tree	Euphorbiaceae	Exotic; naturalised	Tree
Hornstedtia scyphifera var. scyphifera	N/A	Zingiberaceae	Native; vulnerable	Herb
Horsfieldia crassifolia*	N/A	Myristicaceae	Native; critically endangered	Tree
Horsfieldia irya*	Pianggu, Piasau Mamau	Myristicaceae	Native; critically endangered	Tree
Horsfieldia polyspherula	Penarahan	Myristicaceae	Native; vulnerable	Tree
Horsfieldia sucosa*	N/A	Myristicaceae	Native; endangered	Tree
Hoya diversifolia	N/A	Apocynaceae	Native; critically endangered	Epiphyte
Hoya verticillata	N/A	Apocynaceae	Native; common	Epiphyte
Hymenocallis speciosa	N/A	Amaryllidaceae	Exotic	Herb
Ilex cymosa	Marsh Holly, Mensirah, Mesirah, Timah-timah	Aquifoliaceae	Native; common	Tree
Imperata cylindrica	Lalang, cogon grass, alang-alang, blady grass, speargrass	Poaceae	Cryptogenic	Herb
Indorouchera griffithiana	Akar Biji, Akar Kait Putih, Akar Putih, Akar Tenggadin, Akar Tuai, Garam-garam	Linaceae	Native; common	Climber
Intsia bijuga	N/A	Fabaceae	Native; critically endangered	Tree
Ipomoea cairica	Messina Creeper, Mile A Minute Vine	Convolvulaceae	Exotic; naturalised	Climber
Ipomoea indica	Blue Morning Glory, Blue Dawn Flower, Dunny Creeper	Convolvulaceae	Not listed	Climber
Ipomoea pes-caprae	N/A	Convolvulaceae	Native; common	Climber
Ipomoea triloba	N/A	Convolvulaceae	Exotic; naturalised	Climber
Isachne globosa	Swamp Millet	Poaceae	Cryptogenic	Herb
Ischaemum ciliare	N/A	Poaceae	Cryptogenic	Herb
Ischaemum muticum	Seashore Centipede Grass, Rumput Tembaga Jantan, Rumput Kemarau	Poaceae	Native; common	Herb
Ixonanthes icosandra	N/A	Ixonanthaceae	Native; vulnerable	Tree
Ixonanthes reticulata	Pagar Anak, Ten Men Tree, Inggir Burong, Nyiran Burong	Ixonanthaceae	Native; common	Tree
Ixora congesta	Malayan Ixora, Jarum-jarum, Khem Deang	Rubiaceae	Native; common	Shrub
Kaempferia elegans	'Shazam' Peacock Ginger	Zingiberaceae	Exotic	Herb
Khaya grandifoliola	Large-leaved Khaya, Benin Mahogany, African Mahogany, African Mahogony	Meliaceae	Exotic	Tree
Kleinhovia hospita*	N/A	Malvaceae	Native; presumed extinct	Tree
Kopsia fruticosa	N/A	Apocynaceae	Exotic	Tree
Kyllinga nemoralis	N/A	Cyperaceae	Cryptogenic	Herb
Kyllinga polyphylla	Navua Sedge	Cyperaceae	Exotic; naturalised	Herb
Lagerstroemia speciosa	N/A	Lythraceae	Exotic	Tree
Lansium domesticum	Langsat, Duku, Langsat, Langsat Hutan	Meliaceae	Exotic	Tree
Leea angulata*	N/A	Vitaceae	Native; critically endangered	Tree
Leea indica	Common Tree-Vine, Jolok-Jolok, Merbati Padang	Vitaceae	Native; common	Tree
Leea rubra*	N/A	Vitaceae	Native; presumed extinct	Shrub
Lepisanthes rubiginosa	N/A	Sapindaceae	Native; common	Tree
Leucaena leucocephala	Lead Tree, Reuse Wattel, White Popinac, Horse Tamarind, Wild Tamarind, Leucaena, Jumbie Bean, Jumbay, Ipil-ipil, Petai Jawa	Fabaceae	Exotic; naturalised	Tree
Limacia scandens	N/A	Menispermaceae	Native; vulnerable	Climber
Limnocharis flava	N/A	Limnocharitaceae	Exotic; naturalised	Herb
Lindera lucida	N/A	Lauraceae	Native; vulnerable	Tree
Lindsaea ensifolia	Graceful Necklace Fern	Dennstaedtiaceae	Native; common	Herb
Lithocarpus cantleyanus	N/A	Fagaceae	Native; critically endangered	Tree
Lithocarpus conocarpus	N/A	Fagaceae	Native; critically endangered	Tree
Litsea elliptica	Medang, Perawas	Lauraceae	Native; common	Tree
Litsea firma	Blue Laurel, Medang	Lauraceae	Native; vulnerable	Tree
Livistona chinensis	N/A	Arecaceae	Exotic	Tree
Livistona rotundifolia	Footstool Palm, Java Palm, Sadeng, Serdang, Fan Palm	Arecaceae	Exotic	Tree
Lophatherum gracile	N/A	Poaceae	Native; common	Herb
Lumnitzera littorea	Teruntum Merah, Red Teruntum, Red-Flowered Black Mangrove	Combretaceae	Native; endangered	Tree
Lygodium flexuosum	Climbing Fern, Ribu-Ribu	Schizaeaceae	Native; common	Climber

Lygodium longifolium	N/A	Schizaeaceae	Native; vulnerable	Climber
Lygodium microphyllum	Small-Leaf Climbing Fern	Schizaeaceae	Native; common	Climber
Macaranga bancana	Common Mahang	Euphorbiaceae	Native; common	Tree
Macaranga conifera	Polpar Mahang	Euphorbiaceae	Native; common	Tree
Macaranga gigantea	Giant Mahang	Euphorbiaceae	Native; common	Tree
Macaranga heynei	Blue Mahang	Euphorbiaceae	Native; common	Tree
Macaranga hullettii	Balik angin, Mahang bulan	Euphorbiaceae	Native; critically endangered	Tree
Macaranga hypoleuca	White Mahang	Euphorbiaceae	Native; common	Tree
Macaranga recurvata	Swamp Mahang	Euphorbiaceae	Native; critically endangered	Tree
Maesa ramentacea	N/A	Maesaceae	Native; common	Shrub
Mallotus paniculatus	Turn-in-the-wind, Balik Angin, Balik Adap, Balik Angin Bukit, Balik Angin Gajah	Euphorbiaceae	Native; common	Tree
Mangifera caesia*	Binjai	Anacardiaceae	Native; critically endangered	Tree
Mangifera indica	Mango, Mangas, Mangga, Mempalam, Puah, Mempelam	Anacardiaceae	Exotic; casual	Tree
Mangifera odorata	Saipan Mango, Fragrant Mango, Kuini, Kweni, Kuweni, Kuwini, Wani	Anacardiaceae	Native; vulnerable	Tree
Manihot carthagenesis	Tree Cassava, Glaziovii	Euphorbiaceae	Exotic; naturalised	Tree
Manihot esculenta	Manihot, Tapioca, Bitter Cassava, Manioc, Mandioca, Ubi Kayu, Gari	Euphorbiaceae	Exotic; naturalised	Shrub
Manilkara zapota	N/A	Sapotaceae	Exotic	Tree
Maranthes corymbosa	Merbatu, Sea Beam	Chrysobalanaceae	Native; endangered	Tree
Megathyrsus maximus	Guinea Grass	Poaceae	Exotic; naturalised	Herb
Melaleuca dealbata	N/A	Myrtaceae	Exotic	Tree
Melastoma malabathricum	Common Sendudok, Singapore Rhododendron, Indian Rhododendron, Sesenduk, Malabar Gooseberry, Straits Rhododendron, Sendudok, Senduduk	Melastomataceae	Native; common	Shrub
Melothria pendula	Guadeloupe Cucumber , Creeping Cucumber	Cucurbitaceae	Not listed	Climber
Memecylon caeruleum*	N/A	Melastomataceae	Native; critically endangered	Tree
Memecylon pauciflorum*	N/A	Melastomataceae	Native; presumed extinct	Tree
Merope angulata	N/A	Rutaceae	Native; critically endangered	Shrub
Merremia hirta	N/A	Convolvulaceae	Cryptogenic	Climber
Merremia umbellata	Hogvine, Yellow Merremia, Yellow Wood Rose	Convolvulaceae	Cryptogenic	Climber
Mikania micrantha	American Rope, Mile-A-Minute Weed, Bittervine, Chinese Creeper, Climbing Hempvine	Asteraceae	Exotic; naturalised	Climber
Mimosa pigra	N/A	Fabaceae	Exotic; naturalised	Shrub
Mimosa pudica	Sensitive Plant, Touch-me-not, Shame Plant, Live-and-die, Humble Plant, Action Plant, Rumput Simalu, Mimosa, Malu-malu	Fabaceae	Exotic; naturalised	Shrub
Mimusops elengi	Tanjong Tree, Bunga Tanjung, Red Coondoo, Tanjong, Spanish Cherry, Medlar, Bullet Wood, Bunga Mengkula, Mengkulah, Mengkulang	Sapotaceae	Exotic; casual	Tree
Molineria latifolia var. latifolia	Lumbah Rimba, Kepala Puyuh, Weevil Lily, Hill Coconut, Lumbah, Lumbah Bukit	Hypoxidaceae	Native; vulnerable	Herb
Morella esculenta	Malay Gale, Telur Cicak, Geliche, Telur Chichak	Myricaceae	Native; common	Tree
Morinda citrifolia	N/A	Rubiaceae	Cryptogenic	Tree
Moringa oleifera	N/A	Moringaceae	Exotic	Tree
Morus alba	N/A	Moraceae	Exotic	Tree
Muntingia calabura	Calabura, Japanese Cherry, Buah Cheri, Malayan Cherry, Jamaican Cherry, Cherry Tree, Buah Cheri, West Indian Cherry Tree, Kerukup-Siam, Buah Ceri, Capulin, Panama Berry	Malvaceae	Exotic; naturalised	Tree
Musa cultivar	Banana	Musaceae	Not listed	Herb
Mussaendopsis beccariana*	N/A	Rubiaceae	Native; endangered	Tree
Neesia malayana	Bengang	Malvaceae	Native; extinct (recently rediscovered)	Tree
Nepenthes gracilis	Slender Pitcher Plant, Periok Kera, Monkey Cup	Nepenthaceae	Native; common	Climber
Nepenthes rafflesiana	N/A	Nepenthaceae	Native; vulnerable	Climber
Nephelium lappaceum*	Rambutan, Hairy Lychee	Sapindaceae	Native; critically endangered	Tree

Nephrolepis auriculata	Tuberous Sword Fern, Sword Fern	Oleandraceae	Cryptogenic	Herb
Nothaphoebe umbelliflora	Bong Tree, Yang Bong Tree	Lauraceae	Native; common	Tree
Nymphaea rubra	N/A	Nymphaeaceae	Exotic	Herb
Nypa fruticans	N/A	Arecaceae	Native; vulnerable	Shrub
Oldenlandia corymbosa	N/A	Rubiaceae	Exotic; naturalised	Herb
Oncosperma horridum	Bayas	Arecaceae	Native; vulnerable	Shrub
Oncosperma tigillaria	Nibung, Nibong, Nibung Palm	Arecaceae	Native; vulnerable	Shrub
Oxalis barrelieri	N/A	Oxalidaceae	Exotic; naturalised	Herb
Oxalis corniculata	N/A	Oxalidaceae	Exotic; naturalised	Herb
Oxyceros fragrantissimus	N/A	Rubiaceae	Native; endangered	Climber
Oxyceros longiflorus	Akar Berdara Laut	Rubiaceae	Native; vulnerable	Climber
Pachira aquatica	N/A	Malvaceae	Exotic	Tree
Pachystachys lutea	Lollypops, Golden Candles, Golden Shrimp Plant, Lollipop Plant, Yellow Shrimp Plan	Acanthaceae	Exotic	Shrub
Paederia foetida	Lesser Malayan Stinkwort, Akar Sekentut, Daun Kentut-kentut	Rubiaceae	Native; common	Climber
Palaquium obovatum	White Gutta, Nyatoh Putih, Nyatuh, Taban Puteh, Taban Balam Kuning	Sapotaceae	Native; vulnerable	Tree
Pandanus amaryllifolius	Pandan, Fragrant Pandan, Scented Pandan, Screwpine, Fragrant Screwpine, Indonesian Screwpine, Pandan Rampeh, Pandan Wangi, Daun Pandan	Pandanaceae	Exotic; casual	Shrub
Pandanus atrocarpus	N/A	Pandanaceae	Native; endangered	Tree
Pandanus monotheca*	N/A	Pandanaceae	Native; endangered	Shrub
Pandanus odorifer	N/A	Pandanaceae	Native; common	Shrub
Paraderris elliptica	Smooth Pomaderris	Fabaceae	Not listed	Climber
Parkia speciosa*	N/A	Fabaceae	Native; vulnerable	Tree
Passiflora edulis	N/A	Passifloraceae	Exotic	Climber
Passiflora foetida	N/A	Passifloraceae	Exotic; naturalised	Climber
Passiflora laurifolia	Water Lemon, Yellow Granadilla, Bell Apple, Passion Fruit, Buah Susu, Jamaica Honeysuckle, Belle Apple, Vinegar Pear, Pomme-de-Liane	Passifloraceae	Exotic; naturalised	Climber
Passiflora suberosa	Corky Passionflower, Corkystem Passionflower, Devil's Pumpkin, Indigo Berry	Passifloraceae	Exotic; naturalised	Climber
Peltophorum pterocarpum	Yellow Flame, Copper Pod, Batai Laut, Rusty Shield Bearer, Yellow Flamboyant, Jemerlang	Fabaceae	Native; critically endangered	Tree
Pennisetum polystachion	N/A	Poaceae	Exotic; naturalised	Herb
Pennisetum purpureum	Elephant Grass	Poaceae	Exotic; naturalised	Herb
Pentace triptera*	N/A	Malvaceae	Native; endangered	Tree
Peristrophe roxburghiana	Peristrophe, Magenta Plant, Noja	Acanthaceae	Cryptogenic	Herb
Peronema canescens*	N/A	Lamiaceae	Native; presumed extinct	Tree
Phanera semibifida var. semibifida	Common Bauhinia	Fabaceae	Native; vulnerable	Climber
Phyllanthus cochinchinensis	N/A	Phyllanthaceae	Exotic	Shrub
Phyllanthus myrtifolius	N/A	Phyllanthaceae	Exotic	Shrub
Phymatosorus nigrescens	N/A	Polypodiaceae	Native; common	Epiphyte
Pilea nummulariifolia	Creeping Charlie	Urticaceae	Exotic	Climber
Piper pedicellosum	Sireh Murai	Piperaceae	Native; critically endangered	Climber
Piper sarmentosum	Wild Pepper, Wild Betel, Kadok, Kaduk, Daun Kaduk, Chabei, Sri Tanah, Chaa Phluu, La Lot, Akar Bugu, Sirih Duduk	Piperaceae	Native; common	Climber
Pipturus argenteus	Native Mulberry	Urticaceae	Exotic; naturalised	Shrub
Platycerium coronarium	Staghorn Fern, Crown Staghorn, Stag's Horn Fern, Disc Stag's Horn Fern, Elkhorn Fern, Semum Bidadari, Rumah Langsuyar, Paku Langsuyar	Polypodiaceae	Native; common	Epiphyte
Platycerium grande	N/A	Polypodiaceae	Exotic	Epiphyte
Plectocomia elongata	Giant Rattan	Arecaceae	Native; vulnerable	Climber
Ploiarium alternifolium	Cicada Tree, Riang Riang, Reriang, Kayu Kuat (Kuat Kuat), Keriang, Sesudu Paya	Bonnetiaceae	Native; common	Shrub
Podocarpus polystachyus*	N/A	Podocarpaceae	Native; critically endangered	Tree
Pometia pinnata*	N/A	Sapindaceae	Native; endangered	Tree
Pongamia pinnata	Seashore Mempari, Pongam, Indian Beech, Poonga Oil Tree, Karum Tree	Fabaceae	Native; endangered	Tree
Popowia tomentosa*	N/A	Annonaceae	Native; endangered	Tree

Porterandia anisophylla	Wild Randa, Randa Utan, Chempaka Puteh Utan	Rubiaceae	Native; vulnerable	Tree
Pouteria obovata	Sea Gutta, Menasi, Northern Yellow Boxwood, Yellow Teak, Black Ash, Pulau Dammar, Misi, Nyatoh Laut	Sapotaceae	Native; vulnerable	Tree
Premna serratifolia	Headache Tree, Buas-Buas, Bastard Guelder, Bangkung Kayu, Sarunai, Singkel	Lamiaceae	Native; vulnerable	Climber
Pronephrium triphyllum	N/A	Thelypteridaceae	Native; common	Herb
Psychotria ovoidea	Psychotria ovoidea	Rubiaceae	Native; vulnerable	Climber
Pteris multifida	Spider Brake	Pteridaceae	Native; common	Herb
Pteris vittata	N/A	Pteridaceae	Cryptogenic	Herb
Pternandra coerulescens	Cursed Shade, Sial Menahun, Lidah Katak, Bunut, Bunut Paya, Kelat Biru, Nipis Kulit	Melastomataceae;	Native; vulnerable	Tree
Pterocarpus indicus	Angsana, Sena, Burmese Rosewood, Philippine Mahogany, Andaman Redwood, Red Sandalwood, Padouk, Padauk, Narra, Pokok Sena	Fabaceae	Exotic; casual	Tree
Ptychosperma macarthurii	MacArthur Palm, Hurricane Palm, Macarthur Feather Palm, Cluster Palm	Arecaceae	Exotic; naturalised	Tree
Punica granatum	N/A	Lythraceae	Exotic	Shrub
Pyrrosia longifolia	N/A	Polypodiaceae	Native; common	Epiphyte
Pyrrosia piloselloides	Dragon Scales, Sakat Ribu-Ribu, Sisek naga, Pakis Duitan, Dragon's Scale Fern	Polypodiaceae	Native; common	Epiphyte
Quisqualis indica	Rangoon Creeper, Drunken Sailor, Akar Dani, Akar Suloh, Dani, Ara Dani, Akar Pontianak, Red Jasmine	Combretaceae	Exotic; casual	Climber
Rapanea porteriana*	N/A	Myrsinaceae	Native; vulnerable	Shrub
Ravenala madagascariensis	N/A	Strelitziaceae	Exotic	Tree
Rhizophora apiculata	N/A	Rhizophoraceae	Native; common	Tree
Rhizophora mucronata	N/A	Rhizophoraceae	Native; common	Tree
Rhodamnia cinerea	Silver Back Tree, Mempoyan, Poyan, Empoyan, Tempoyai, Mengkoyan	Myrtaceae	Native; common	Tree
Rhodomyrtus tomentosa	N/A	Myrtaceae	Native; common	Shrub
Rothmannia macrophylla	N/A	Rubiaceae	Native; vulnerable	Shrub
Rourea asplenifolia	N/A	Connaraceae	Native; critically endangered	Climber
Rourea mimosoides	N/A	Connaraceae	Native; endangered	Climber
Rourea minor	N/A	Connaraceae	Native; critically endangered	Climber
Roystonea regia	Florida Royal Palm, Royal Palm, Cuban Royal Palm	Arecaceae	Exotic	Tree
Rubus moluccanus var. moluccanus	N/A	Rosaceae	Native; vulnerable	Climber
Saccharum officinarum	N/A	Poaceae	Exotic; casual	Herb
Sagittaria latifolia	N/A	Alismataceae	Exotic	Herb
Samanea saman	Rain Tree, Pukul Lima, Cow Tamarind, Hujan-Hujan, East Indian Walnut, Monkey-pod, Saman	Fabaceae	Exotic; casual	Tree
Sandoricum koetjape*	Santol, Sentol, Sentul, Kechapi, Kecapi, Kelampu, Ketjape, Ketuat, Lolly Fruit, Ranggu, Red Santol, Yellow Sentol	Meliaceae	Native; endangered	Tree
Santiria griffithii	Kedondong Kerantai	Burseraceae	Native; common	Tree
Santiria laevigata	Kedondong Kerantai Lichin	Burseraceae	Native; vulnerable	Tree
Sauropus androgynus	Cekur Manis, Chekur Manis, Cekuk Manis, Sayur Manis, Pucuk Manis, Star Gooseberry, Sweet Leaf Bush, Katuk	Phyllanthaceae	Native; common	Shrub
Schefflera actinophylla	N/A	Araliaceae	Exotic; casual	Tree
Schizostachyum brachycladum	N/A	Poaceae	Exotic; casual	Shrub
Schumannianthus dichotomus*	N/A	Marantaceae	Native; critically endangered	Herb
Scoparia dulcis	N/A	Scrophulariaceae	Exotic; naturalised	Herb
Scrotochloa urceolata	N/A	Poaceae	Native; vulnerable	Herb
Shorea curtisii*	N/A	Dipterocarpaceae	Native; vulnerable	Tree
Sindora wallichii*	N/A	Fabaceae	Native; critically endangered	Tree
Smilax setosa	Bearded Smilax, Akar Banar, Akar Keranting Jantan	Smilacaceae	Native; common	Climber
Smythea lanceata	N/A	Rhamnaceae	Native; critically endangered	Climber
Solanum torvum	Turkey Berry, Devil's Fig, Terung Pipit	Solanaceae	Exotic; naturalised	Shrub
Sonneratia alba	N/A	Lythraceae	Native; common	Tree
Sonneratia caseolaris	N/A	Lythraceae	Native; critically endangered	Tree
Spathiphyllum cannifolium	Spatheflower, Peace Lily, White Flag, White Sails	Araceae	Exotic	Herb

Spathodea campanulata	African Tulip Tree, Flame of the Forest, Fountain Tree, Fire Tree, Fire Bell, Nandi Flame, Gabon Tulip Tree, Syringe Tree, Pancut-Pancut, Panchot	Bignoniaceae	Exotic; naturalised	Tree
Spathoglottis plicata	Spathoglottis Orchid, Common Spathoglottis, Philippine Ground Orchid, Lumbah Tikus, Pleated Leaf Spathoglottis, Malayan Ground Orchid	Orchidaceae	Native; common	Herb
Spatholobus ferrugineus	N/A	Fabaceae	Native; common	Climber
Spermacoce exilis	Pacific False Buttonweed	Rubiaceae	Cryptogenic	Herb
Sphaerostephanos heterocarpus	N/A	Thelypteridaceae	Native; common	Herb
Sphagneticola trilobata	Sphagneticola trilobata	Asteraceae	Exotic; naturalised	Herb
Spondias pinnata	Wild Mango	Anacardiaceae	Exotic	Tree
Stachyphrynium latifolium	N/A	Marantaceae	Native; endangered	Herb
Stachytarpheta jamaicensis	N/A	Verbenaceae	Exotic; naturalised	Shrub
Stenochlaena palustris	Climbing Fern, Akar Paku, Paku Ranu, Paku Miding	Blechnaceae	Native; common	Climber
Sterculia cordata	Kelumpang, Kembang	Malvaceae	Native; critically endangered	Tree
Sterculia macrophylla*	Broad-leaved Sterculia, Kelumpang, Melian	Malvaceae	Native; critically endangered	Tree
Sterculia parvifolia*	Common Sterculia, Kelumpang Burong, Kelumpang Gajah	Malvaceae	Native; critically endangered	Tree
Sterculia rubiginosa*	Rusty Sterculia, Kelumpang, Kelumpang Bukit, Kelumpang Gajah, Kayu Amplas, Bayur Betina, Dedamak Hitam, Pokok Sakhlat, Tangisan Burung, Unting-unting Besar	Malvaceae	Native; vulnerable	Tree
Stereospermum fimbriatum	N/A	Bignoniaceae	Exotic	Tree
Streblus elongatus*	N/A	Moraceae	Native; vulnerable	Tree
Strobilanthes crispus	N/A	Acanthaceae	Exotic	Herb
Struchium sparganophorum	Yerba De Faja	Asteraceae	Exotic; naturalised	Herb
Suregada multiflora*	N/A	Euphorbiaceae	Native; critically endangered	Shrub
Swietenia macrophylla	N/A	Meliaceae	Exotic; casual	Tree
Syngonium podophyllum	Arrowhead Vine, Goosefoot	Araceae	Exotic; naturalised	Climber
Syzygium aqueum	Water Apple, Jambu Air Mawar, Water Rose Apple, Watery Rose Apple, Water Cherry, Java Apple, Bell Fruit, Jambu Ayer, Jambu Chili, Jambu Air	Myrtaceae	Exotic	Tree
Syzygium aromaticum	N/A	Myrtaceae	Exotic	Tree
Syzygium borneense	Bullate Eugenia	Myrtaceae	Native; common	Tree
Syzygium glaucum*	N/A	Myrtaceae	Native; vulnerable	Tree
Syzygium grande	Sea Apple, Kilat Jambu, Jambu Air Laut, Jambu Laut, Jambu Ayer Laut, Jambu Jembah, Jembah, Kerian Acheh, Kerian Ayer, Keriang Batu, Ubah	Myrtaceae	Native; common	Tree
Syzygium jambos	Rose Apple, Malabar Plum, Jambu Air Mawar, Jambu Mawar, Jambu Kraton, Jambu Kelampok, Jambu Mawer	Myrtaceae	Exotic; casual	Tree
Syzygium lineatum	Common Kelat, Gelam Tikus, Ubah, Benitan Putih, Kecam, Kelat Lapis, Kelat Merah, Kelat Nasi-nasi, Kelat Paya, Kelat Putih, Sekujah	Myrtaceae	Native; common	Tree
Syzygium malaccense	Malay Apple, Pomerac, Jambu Bol, Jambu Merah	Myrtaceae	Exotic; casual	Tree
Syzygium myrtifolium*	Red Lip, Kelat Oil	Myrtaceae	Native; presumed extinct	Tree
Syzygium palembanicum	N/A	Myrtaceae	Native; vulnerable	Tree
Syzygium polyanthum	Indonesian Bayleaf, Indian Bayleaf, Salam, Buah Salam, Samak, Kelat Samak, Serah	Myrtaceae	Native; vulnerable	Tree
Syzygium pseudoformosum	N/A	Myrtaceae	Native; critically endangered	Tree
Syzygium zeylanicum	Spicate Eugenia, Kelat Nasi Nasi, Kelat Nenasi, Gelam Tikus, Gelam Paya, Gelam Tikus Laut, Kelat Merah	Myrtaceae	Native; common	Shrub
Tabebuia rosea	Pink Poui, Rosy Trumpet Tree, Pink Tecoma, Pink Poui, Trumpet Tree, New World Trumpet	Bignoniaceae	Exotic; casual	Tree
Taenitis blechnoides	Ribbon Fern	Pteridaceae	Native; common	Climber
Taliparitiliaceum	N/A	Malvaceae	Native; common	Tree

Tamarindus indica	Tamarind	Fabaceae	Exotic; casual	Tree
Tarenna odorata*	N/A	Rubiaceae	Native; critically endangered	Shrub
Tectaria semipinnata	N/A	Dryopteridaceae	Native; endangered	Herb
Tectaria vasta	N/A	Dryopteridaceae	Native; endangered	Herb
Terminalia catappa	Sea Almond, Pacific Almond, Ketapang, Indian Almond, Tropical Almond Tree, Lingtak, Bastard Almond, Singapore Almond, Telisai, Jelawai Ketapang	Combretaceae	Native; common	Tree
Terminalia muelleri	N/A	Combretaceae	Exotic	Tree
Tetracera akara	Sandpaper Vine	Dilleniaceae	Native; vulnerable	Climber
Tetracera indica	Sandpaper Vine	Dilleniaceae	Native; common	Climber
Thalia geniculata	N/A	Marantaceae	Exotic	Herb
Theobroma cacao	Cocoa, Cacao, Chocolate Nut Tree	Malvaceae	Exotic	Tree
Thespesia populnea	N/A	Malvaceae	Native; common	Tree
Thunbergia fragrans	Angel Wings, Fragrant Thunbergia, Indra pushpa, Sweet Clock Vine, White Clock Vine, White Lady	Acanthaceae	Exotic; naturalised	Climber
Thysanolaena latifolia	N/A	Poaceae	Exotic; naturalised	Herb
Timonius flavescens	N/A	Rubiaceae	Native; critically endangered	Tree
Timonius wallichianus	Silver Timon, Triang, Berombong, Merombong	Rubiaceae	Native; common	Tree
Tinospora crispa	Petawali, Makabuhai, Liane-quinine	Menispermaceae	Exotic; casual	Climber
Torenia polygonoides	Kerak Nasi, Malayan Eyebright	Linderniaceae	Cryptogenic	Herb
Trema cannabina	Lesser Trema	Cannabaceae	Native; common	Shrub
Trema tomentosa	Poison Peach	Cannabaceae	Native; common	Shrub
Tridax procumbens	Coat Buttons, Kanching Baju	Asteraceae	Exotic; naturalised	Herb
Tristaniopsis obovata*	N/A	Myrtaceae	Native; critically endangered	Tree
Tristaniopsis whiteana*	N/A	Myrtaceae	Native; endangered	Tree
Tristellateia australasiae*	N/A	Malpighiaceae	Native; endangered	Climber
Typha angustifolia	N/A	Typhaceae	Exotic; naturalised	Herb
Uncaria gambir	Gambir	Rubiaceae	Exotic; naturalised	Climber
Urochloa mutica	N/A	Poaceae	Exotic; naturalised	Herb
Vatica pauciflora	N/A	Dipterocarpaceae	Native; critically endangered	Tree
Ventilago maingayi	N/A	Rhamnaceae	Native; not listed	Climber
Vitex pinnata	Leban, Malayan Teak, Vitex, Halban, Leban Buas, Leban Papa	Lamiaceae	Native; common	Tree
Vitex trifolia	N/A	Lamiaceae	Exotic; casual	Shrub
Vittaria ensiformis	Shoestring Fern	Vittariaceae	Native; common	Epiphyte
Willughbeia edulis	N/A	Apocynaceae	Native; presumed extinct	Climber
Wrightia religiosa	Wild Water Plum, Water Jasmine, Sacred Buddhist	Apocynaceae	Exotic; casual	Shrub
Xanthophyllum amoenum*	Keranji, Lahal, Langir, Menyerin, Nyalin, Nyalin paya, Sianglam, Tampasak	Polygalaceae	Native; critically endangered	Tree
Xanthosoma sagittifolium	Arrowleaf Elephant Ear	Araceae	Exotic	Herb
Xylocarpus granatum	N/A	Meliaceae	Native; common	Tree
Xylocarpus moluccensis*	N/A	Meliaceae	Native; endangered	Tree
Xylopia caudata	N/A	Annonaceae	Native; vulnerable	Tree

*indicate species that were planted or escaped from cultivation

Appendix B

List of Plants of Conservation Significance

National Status	Species	Family	Habit
Presumed extinct	*Cleistanthus hirsutulus**	Phyllanthaceae	Tree
Presumed extinct	*Kleinhovia hospita**	Malvaceae	Tree
Presumed extinct	*Leea rubra**	Vitaceae	Shrub
Presumed extinct	*Memecylon pauciflorum**	Melastomataceae	Tree
Presumed extinct	*Peronema canescens**	Lamiaceae	Tree
Presumed extinct	*Syzygium myrtifolium**	Myrtaceae	Tree
Presumed extinct	*Willughbeia edulis*	Apocynaceae	Climber
Presumed extinct	*Cyrtostachys renda**	Arecaceae	Shrub
Presumed extinct (recently rediscovered)	*Neesia malayana*	Malvaceae	Tree
Critically endangered	*Agelaea macrophylla*	Connaraceae	Climber
Critically endangered	*Alpinia aquatica**	Zingiberaceae	Herb
Critically endangered	*Antiaris toxicaria**	Moraceae	Tree
Critically endangered	*Artabotrys crassifolius*	Annonaceae	Climber
Critically endangered	*Artabotrys maingayi*	Annonaceae	Climber
Critically endangered	*Baccaurea bracteata*	Phyllanthaceae	Tree
Critically endangered	*Barringtonia asiatica**	Lecythidaceae	Tree
Critically endangered	*Barringtonia racemosa**	Lecythidaceae	Tree
Critically endangered	*Calophyllum inophyllum**	Clusiaceae	Tree
Critically endangered	*Calophyllum soulattri*	Clusiaceae	Tree
Critically endangered	*Cayratia japonica*	Vitaceae	Climber
Critically endangered	*Centotheca lappacea*	Poaceae	Herb
Critically endangered	*Cissus repens**	Vitaceae	Climber
Critically endangered	*Connarus semidecandrus*	Connaraceae	Climber
Critically endangered	*Cymbidium finlaysonianum**	Orchidaceae	Epiphyte
Critically endangered	*Cynometra ramiflora**	Fabaceae	Tree
Critically endangered	*Dillenia excelsa**	Dilleniaceae	Tree
Critically endangered	*Dolichandrone spathacea*	Bignoniaceae	Tree
Critically endangered	*Fagraea auriculata**	Gentianaceae	Climber
Critically endangered	*Ficus deltoidea**	Moraceae	Epiphyte
Critically endangered	*Ficus recurva var. ribesoides*	Moraceae	Climber
Critically endangered	*Glochidion lutescens*	Phyllanthaceae	Climber
Critically endangered	*Gnetum gnemon**	Gnetaceae	Tree
Critically endangered	*Gnetum microcarpum*	Gnetaceae	Climber
Critically endangered	*Guioa bijuga*	Sapindaceae	Tree
Critically endangered	*Horsfieldia crassifolia**	Myristicaceae	Tree
Critically endangered	*Horsfieldia irya**	Myristicaceae	Tree
Critically endangered	*Hoya diversifolia*	Apocynaceae	Epiphyte
Critically endangered	*Intsia bijuga*	Fabaceae	Tree
Critically endangered	*Leea angulata**	Vitaceae	Tree
Critically endangered	*Lithocarpus cantleyanus*	Fagaceae	Tree
Critically endangered	*Lithocarpus conocarpus*	Fagaceae	Tree
Critically endangered	*Macaranga hullettii*	Euphorbiaceae	Tree
Critically endangered	*Macaranga recurvata*	Euphorbiaceae	Tree
Critically endangered	*Mangifera caesia**	Anacardiaceae	Tree
Critically endangered	*Memecylon caeruleum**	Melastomataceae	Tree
Critically endangered	*Merope angulata*	Rutaceae	Shrub
Critically endangered	*Nephelium lappaceum**	Sapindaceae	Tree
Critically endangered	*Peltophorum pterocarpum*	Fabaceae	Tree
Critically endangered	*Piper pedicellosum*	Piperaceae	Climber
Critically endangered	*Podocarpus polystachyus**	Podocarpaceae	Tree
Critically endangered	*Rourea asplenifolia*	Connaraceae	Climber
Critically endangered	*Rourea minor*	Connaraceae	Climber

Critically endangered	*Schumannianthus dichotomus**	Marantaceae	Herb
Critically endangered	*Sindora wallichii**	Fabaceae	Tree
Critically endangered	*Smythea lanceata*	Rhamnaceae	Climber
Critically endangered	*Sonneratia caseolaris*	Lythraceae	Tree
Critically endangered	*Sterculia cordata*	Malvaceae	Tree
Critically endangered	*Sterculia macrophylla**	Malvaceae	Tree
Critically endangered	*Sterculia parvifolia**	Malvaceae	Tree
Critically endangered	*Suregada multiflora**	Euphorbiaceae	Shrub
Critically endangered	*Syzygium pseudoformosum*	Myrtaceae	Tree
Critically endangered	*Tarenna odorata**	Rubiaceae	Shrub
Critically endangered	*Timonius flavescens*	Rubiaceae	Tree
Critically endangered	*Tristaniopsis obovata**	Myrtaceae	Tree
Critically endangered	*Vatica pauciflora*	Dipterocarpaceae	Tree
Critically endangered	*Xanthophyllum amoenum**	Polygalaceae	Tree
Endangered	*Amphineuron opulentum*	Thelypteridaceae	Climber
Endangered	*Aphanamixis polystachya**	Meliaceae	Tree
Endangered	*Aporosa nigricans*	Phyllanthaceae	Tree
Endangered	*Ardisia elliptica*	Myrsinaceae	Tree
Endangered	*Beilschmiedia madang**	Lauraceae	Tree
Endangered	*Callicarpa longifolia*	Lamiaceae	Shrub
Endangered	*Calophyllum lanigerum var. austrocoriaceum*	Clusiaceae	Tree
Endangered	*Canthium confertum*	Rubiaceae	Tree
Endangered	*Carallia brachiata*	Rhizophoraceae	Tree
Endangered	*Cratoxylum cochinchinense**	Hypericaceae	Tree
Endangered	*Cratoxylum formosum*	Hypericaceae	Tree
Endangered	*Embelia canescens*	Myrsinaceae	Climber
Endangered	*Ficus vasculosa*	Moraceae	Tree
Endangered	*Garcinia griffithii*	Clusiaceae	Tree
Endangered	*Garcinia hombroniana**	Clusiaceae	Tree
Endangered	*Gonystylus confusus**	Thymelaeaceae	Tree
Endangered	*Guettarda speciosa**	Rubiaceae	Tree
Endangered	*Heritiera littoralis*	Malvaceae	Tree
Endangered	*Horsfieldia sucosa**	Myristicaceae	Tree
Endangered	*Lumnitzera littorea*	Combretaceae	Tree
Endangered	*Maranthes corymbosa*	Chrysobalanaceae	Tree
Endangered	*Mussaendopsis beccariana**	Rubiaceae	Tree
Endangered	*Oxyceros fragrantissimus*	Rubiaceae	Climber
Endangered	*Pandanus atrocarpus*	Pandanaceae	Tree
Endangered	*Pandanus monotheca**	Pandanaceae	Shrub
Endangered	*Pentace triptera**	Malvaceae	Tree
Endangered	*Pometia pinnata**	Sapindaceae	Tree
Endangered	*Pongamia pinnata*	Fabaceae	Tree
Endangered	*Popowia tomentosa**	Annonaceae	Tree
Endangered	*Rourea mimosoides*	Connaraceae	Climber
Endangered	*Sandoricum koetjape**	Meliaceae	Tree
Endangered	*Stachyphrynium latifolium*	Marantaceae	Herb
Endangered	*Tectaria semipinnata*	Dryopteridaceae	Herb
Endangered	*Tectaria vasta*	Dryopteridaceae	Herb
Endangered	*Tristaniopsis whiteana**	Myrtaceae	Tree
Endangered	*Tristellateia australasiae**	Malpighiaceae	Climber
Endangered	*Xylocarpus moluccensis**	Meliaceae	Tree
Vulnerable	*Acanthus volubilis*	Acanthaceae	Shrub
Vulnerable	*Aidia densiflora*	Rubiaceae	Tree

Vulnerable	*Angiopteris evecta*	Marattiaceae	Herb
Vulnerable	*Archidendron contortum*	Fabaceae	Tree
Vulnerable	*Archidendron jiringa*	Fabaceae	Tree
Vulnerable	*Baccaurea sumatrana**	Phyllanthaceae	Tree
Vulnerable	*Bouea oppositifolia**	Anacardiaceae	Tree
Vulnerable	*Caesalpinia crista*	Fabaceae	Climber
Vulnerable	*Calamus erinaceus*	Arecaceae	Climber
Vulnerable	*Cansjera rheedii*	Opiliaceae	Climber
Vulnerable	*Cerbera odollam**	Apocynaceae	Tree
Vulnerable	*Cleistanthus sumatranus**	Phyllanthaceae	Tree
Vulnerable	*Clerodendrum villosum*	Lamiaceae	Shrub
Vulnerable	*Cyathea latebrosa*	Cyatheaceae	Tree
Vulnerable	*Decaspermum fruticosum*	Myrtaceae	Tree
Vulnerable	*Diospyros buxifolia**	Ebenaceae	Tree
Vulnerable	*Dipterocarpus grandiflorus**	Dipterocarpaceae	Tree
Vulnerable	*Endospermum diadenum*	Euphorbiaceae	Tree
Vulnerable	*Ficus aurata var. aurata*	Moraceae	Tree
Vulnerable	*Goniophlebium percussum*	Polypodiaceae	Epiphyte
Vulnerable	*Guioa pleuropteris**	Sapindaceae	Tree
Vulnerable	*Hanguana malayana**	Hanguanaceae	Herb
Vulnerable	*Hornstedtia scyphifera var. scyphifera*	Zingiberaceae	Herb
Vulnerable	*Horsfieldia polyspherula*	Myristicaceae	Tree
Vulnerable	*Ixonanthes icosandra*	Ixonanthaceae	Tree
Vulnerable	*Limacia scandens*	Menispermaceae	Climber
Vulnerable	*Lindera lucida*	Lauraceae	Tree
Vulnerable	*Litsea firma*	Lauraceae	Tree
Vulnerable	*Lygodium longifolium*	Schizaeaceae	Climber
Vulnerable	*Mangifera odorata*	Anacardiaceae	Tree
Vulnerable	*Molineria latifolia var. latifolia*	Hypoxidaceae	Herb
Vulnerable	*Nepenthes rafflesiana*	Nepenthaceae	Climber
Vulnerable	*Nypa fruticans*	Arecaceae	Shrub
Vulnerable	*Oncosperma horridum*	Arecaceae	Shrub
Vulnerable	*Oncosperma tigillaria*	Arecaceae	Shrub
Vulnerable	*Oxyceros longiflorus*	Rubiaceae	Climber
Vulnerable	*Palaquium obovatum*	Sapotaceae	Tree
Vulnerable	*Parkia speciosa**	Fabaceae	Tree
Vulnerable	*Phanera semibifida var. semibifida*	Fabaceae	Climber
Vulnerable	*Plectocomia elongata*	Arecaceae	Climber
Vulnerable	*Porterandia anisophylla*	Rubiaceae	Tree
Vulnerable	*Pouteria obovata*	Sapotaceae	Tree
Vulnerable	*Premna serratifolia*	Lamiaceae	Climber
Vulnerable	*Psychotria ovoidea*	Rubiaceae	Climber
Vulnerable	*Pternandra coerulescens*	Melastomataceae;	Tree
Vulnerable	*Rapanea porteriana**	Myrsinaceae	Shrub
Vulnerable	*Rothmannia macrophylla*	Rubiaceae	Shrub
Vulnerable	*Rubus moluccanus var. moluccanus*	Rosaceae	Climber
Vulnerable	*Santiria laevigata*	Burseraceae	Tree
Vulnerable	*Scrotochloa urceolata*	Poaceae	Herb
Vulnerable	*Shorea curtisii**	Dipterocarpaceae	Tree
Vulnerable	*Sterculia rubiginosa**	Malvaceae	Tree
Vulnerable	*Streblus elongatus**	Moraceae	Tree
Vulnerable	*Syzygium glaucum**	Myrtaceae	Tree
Vulnerable	*Syzygium palembanicum*	Myrtaceae	Tree

Vulnerable	*Syzygium polyanthum*	Myrtaceae	Tree
Vulnerable	*Tetracera akara*	Dilleniaceae	Climber
Vulnerable	*Xylopia caudata*	Annonaceae	Tree
Not listed	*Ventilago maingayi*	Rhamnaceae	Climber

*Indicate species that are persistent from cultivation

Appendix C

Locations of Plants of Conservation Significance

Species	National Conservation Status	Latitude	Longitude	Habit
Acanthus volubilis	Vulnerable	1.450929	103.777844	Shrub
Acanthus volubilis	Vulnerable	1.451199	103.777964	Shrub
Acanthus volubilis	Vulnerable	1.449941	103.779393	Shrub
Agelaea macrophylla	Critically endangered	1.445273	103.780863	Climber
Aidia densiflora	Vulnerable	1.448300364	103.7778535	Tree
Aidia densiflora	Vulnerable	1.44851347	103.7837787	Tree
Amphineuron opulentum	Endangered	1.451011	103.776624	Climber
Amphineuron opulentum	Endangered	1.451207	103.777959	Climber
Amphineuron opulentum	Endangered	1.448795	103.778415	Climber
Amphineuron opulentum	Endangered	1.444939	103.781085	Climber
Amphineuron opulentum	Endangered	1.446926	103.782068	Climber
Amphineuron opulentum	Endangered	1.446801	103.780794	Climber
Angiopteris evecta	Vulnerable	1.446877	103.779428	Herb
Aporosa nigricans	Endangered	1.448370914	103.7784545	Tree
Archidendron contortum	Vulnerable	1.44638	103.78053	Tree
Archidendron contortum	Vulnerable	1.445359	103.780836	Tree
Archidendron jiringa	Vulnerable	1.450235	103.776984	Tree
Archidendron jiringa	Vulnerable	1.45041	103.776692	Tree
Archidendron jiringa	Vulnerable	1.45036	103.776988	Tree
Ardisia elliptica	Endangered	1.450108	103.777141	Tree
Ardisia elliptica	Endangered	1.45039	103.776358	Tree
Ardisia elliptica	Endangered	1.450729	103.776592	Tree
Ardisia elliptica	Endangered	1.450873299	103.7770023	Tree
Ardisia elliptica	Endangered	1.450994	103.776565	Tree
Ardisia elliptica	Endangered	1.451008	103.776574	Tree
Ardisia elliptica	Endangered	1.450608	103.777942	Tree
Ardisia elliptica	Endangered	1.450656	103.777933	Tree
Ardisia elliptica	Endangered	1.450845	103.777387	Tree
Ardisia elliptica	Endangered	1.45093	103.776595	Tree
Ardisia elliptica	Endangered	1.451141	103.77816	Tree
Ardisia elliptica	Endangered	1.451299	103.778033	Tree
Ardisia elliptica	Endangered	1.449478	103.777469	Tree
Ardisia elliptica	Endangered	1.450581	103.77779	Tree
Ardisia elliptica	Endangered	1.45003	103.779461	Tree
Ardisia elliptica	Endangered	1.450032	103.779442	Tree
Ardisia elliptica	Endangered	1.450206	103.779114	Tree
Ardisia elliptica	Endangered	1.450484	103.778898	Tree
Ardisia elliptica	Endangered	1.451006	103.779518	Tree
Ardisia elliptica	Endangered	1.447788	103.779156	Tree
Ardisia elliptica	Endangered	1.446726	103.780571	Tree
Ardisia elliptica	Endangered	1.449202	103.778515	Tree
Ardisia elliptica	Endangered	1.447612	103.781233	Tree
Ardisia elliptica	Endangered	1.447446	103.780977	Tree
Ardisia elliptica	Endangered	1.447429	103.78101	Tree
Ardisia elliptica	Endangered	1.448278	103.78066	Tree
Artabotrys cf. crassifolius	Critically endangered	1.44565	103.781363	#N/A
Artabotrys cf. maingayi	Critically endangered	1.445755	103.781293	#N/A
Artabotrys cf. maingayi	Critically endangered	1.446102	103.781005	#N/A

Artabotrys maingayi	Critically endangered	1.446096	103.781156	Climber
Baccaurea cf. bracteata	Critically endangered	1.444971	103.781177	#N/A
Caesalpinia crista	Vulnerable	1.449865	103.777382	Climber
Caesalpinia crista	Vulnerable	1.450752	103.778103	Climber
Caesalpinia crista	Vulnerable	1.450889	103.778039	Climber
Caesalpinia crista	Vulnerable	1.449677	103.778217	Climber
Caesalpinia crista	Vulnerable	1.449872	103.778796	Climber
Caesalpinia crista	Vulnerable	1.447386	103.779167	Climber
Caesalpinia crista	Vulnerable	1.447969	103.778866	Climber
Caesalpinia crista	Vulnerable	1.448376	103.778664	Climber
Caesalpinia crista	Vulnerable	1.448359	103.778451	Climber
Caesalpinia crista	Vulnerable	1.44886	103.778276	Climber
Caesalpinia crista	Vulnerable	1.445522	103.779976	Climber
Caesalpinia crista	Vulnerable	1.446024	103.779715	Climber
Caesalpinia crista	Vulnerable	1.446329	103.779684	Climber
Caesalpinia crista	Vulnerable	1.445598	103.780532	Climber
Caesalpinia crista	Vulnerable	1.446291	103.780413	Climber
Caesalpinia crista	Vulnerable	1.44619	103.780519	Climber
Caesalpinia crista	Vulnerable	1.449283	103.779117	Climber
Caesalpinia crista	Vulnerable	1.449102	103.778922	Climber
Caesalpinia crista	Vulnerable	1.449235	103.77862	Climber
Caesalpinia crista	Vulnerable	1.449235	103.778621	Climber
Calamus erinaceus	Vulnerable	1.45038	103.776376	Climber
Calamus erinaceus	Vulnerable	1.448604	103.77804	Climber
Calamus erinaceus	Vulnerable	1.448652	103.778058	Climber
Calamus erinaceus	Vulnerable	1.44687	103.778138	Climber
Calamus erinaceus	Vulnerable	1.447413	103.779187	Climber
Calamus erinaceus	Vulnerable	1.449215	103.778228	Climber
Calamus erinaceus	Vulnerable	1.44804	103.778305	Climber
Calamus erinaceus	Vulnerable	1.447789	103.779151	Climber
Calamus erinaceus	Vulnerable	1.446061	103.779759	Climber
Calamus erinaceus	Vulnerable	1.445944	103.78101	Climber
Calamus erinaceus	Vulnerable	1.449441	103.779085	Climber
Calamus erinaceus	Vulnerable	1.449012	103.778778	Climber
Callicarpa longifolia	Endangered	1.449714	103.778971	Shrub
Calophyllum cf. lanigerum var. austrocoriaceum	Endangered	1.45019026	103.7789116	#N/A
Calophyllum cf. lanigerum var. austrocoriaceum	Endangered	1.450192	103.7789	#N/A
Calophyllum cf. soulattri	Critically endangered	1.450585	103.777787	#N/A
Calophyllum cf. soulattri	Critically endangered	1.446738	103.781848	#N/A
Calophyllum cf. soulattri	Critically endangered	1.446757	103.781865	#N/A
Calophyllum cf. soulattri	Critically endangered	1.446897	103.782765	#N/A
Calophyllum cf. soulattri	Critically endangered	1.446325	103.781892	#N/A
Calophyllum soulattri	Critically endangered	1.449511	103.777096	Tree
Calophyllum soulattri	Critically endangered	1.449527	103.777083	Tree
Calophyllum soulattri	Critically endangered	1.446953	103.778984	Tree
Cansjera cf. rheedii	Vulnerable	1.446203	103.780569	#N/A
Canthium confertum	Endangered	1.445777	103.779821	Tree
Canthium confertum	Endangered	1.445784529	103.7798317	Tree
Carallia brachiata	Endangered	1.445881932	103.7813339	Tree

Cayratia japonica	Critically endangered	1.450165	103.779009	Climber
Cayratia japonica	Critically endangered	1.45043	103.779213	Climber
Cayratia japonica	Critically endangered	1.450437	103.778797	Climber
Cayratia japonica	Critically endangered	1.45055	103.779172	Climber
Cayratia japonica	Critically endangered	1.450836	103.779658	Climber
Cayratia japonica	Critically endangered	1.451016	103.779537	Climber
Cayratia japonica	Critically endangered	1.446328	103.779604	Climber
Centotheca lappacea	Critically endangered	1.445271	103.781003	Herb
Clerodendrum villosum	Vulnerable	1.449864	103.777707	Shrub
Clerodendrum villosum	Vulnerable	1.450658	103.778997	Shrub
Clerodendrum villosum	Vulnerable	1.450775	103.779289	Shrub
Clerodendrum villosum	Vulnerable	1.450836	103.779656	Shrub
Clerodendrum villosum	Vulnerable	1.450926	103.779274	Shrub
Clerodendrum villosum	Vulnerable	1.445037	103.780093	Shrub
Clerodendrum villosum	Vulnerable	1.446893	103.783392	Shrub
Clerodendrum villosum	Vulnerable	1.44721	103.783782	Shrub
Clerodendrum villosum	Vulnerable	1.447748	103.783701	Shrub
Clerodendrum villosum	Vulnerable	1.447901	103.783825	Shrub
Clerodendrum villosum	Vulnerable	1.447903	103.784653	Shrub
Clerodendrum villosum	Vulnerable	1.447931	103.783778	Shrub
Clerodendrum villosum	Vulnerable	1.44804	103.783723	Shrub
Clerodendrum villosum	Vulnerable	1.447919	103.783466	Shrub
Clerodendrum villosum	Vulnerable	1.445513	103.780956	Shrub
Clerodendrum villosum	Vulnerable	1.445626	103.780985	Shrub
Clerodendrum villosum	Vulnerable	1.44566	103.780833	Shrub
Clerodendrum villosum	Vulnerable	1.445768	103.780594	Shrub
Clerodendrum villosum	Vulnerable	1.445845	103.780667	Shrub
Clerodendrum villosum	Vulnerable	1.445869	103.780723	Shrub
Clerodendrum villosum	Vulnerable	1.445998	103.780746	Shrub
Clerodendrum villosum	Vulnerable	1.445998	103.780743	Shrub
Clerodendrum villosum	Vulnerable	1.446079	103.780719	Shrub
Clerodendrum villosum	Vulnerable	1.446131	103.780682	Shrub
Clerodendrum villosum	Vulnerable	1.445523	103.781157	Shrub
Clerodendrum villosum	Vulnerable	1.445586	103.781042	Shrub
Clerodendrum villosum	Vulnerable	1.446442	103.780502	Shrub
Clerodendrum villosum	Vulnerable	1.445575	103.780636	Shrub
Clerodendrum villosum	Vulnerable	1.445751	103.780626	Shrub
Clerodendrum villosum	Vulnerable	1.44593	103.780503	Shrub
Connarus cf. semidecandrus	Critically endangered	1.450033	103.777134	#N/A
Connarus cf. semidecandrus	Critically endangered	1.444776	103.78144	#N/A
Connarus cf. semidecandrus	Critically endangered	1.445585	103.78183	#N/A
Connarus cf. semidecandrus	Critically endangered	1.445323	103.78097	#N/A
Connarus cf. semidecandrus	Critically endangered	1.445545	103.780756	#N/A
Cratoxylum formosum	Endangered	1.449858	103.777799	Tree
Cratoxylum formosum	Endangered	1.449862	103.7778	Tree
Cyathea latebrosa	Vulnerable	1.449717	103.776973	Tree
Cyathea latebrosa	Vulnerable	1.449991	103.77749	Tree
Cyathea latebrosa	Vulnerable	1.450087	103.777043	Tree
Cyathea latebrosa	Vulnerable	1.450304	103.776945	Tree

Cyathea latebrosa	Vulnerable	1.450362	103.776978	Tree
Cyathea latebrosa	Vulnerable	1.449725	103.778285	Tree
Cyathea latebrosa	Vulnerable	1.44854	103.778097	Tree
Cyathea latebrosa	Vulnerable	1.446911	103.77818	Tree
Cyathea latebrosa	Vulnerable	1.446817	103.778287	Tree
Cyathea latebrosa	Vulnerable	1.44674	103.779174	Tree
Cyathea latebrosa	Vulnerable	1.446663	103.779105	Tree
Cyathea latebrosa	Vulnerable	1.44677	103.778793	Tree
Cyathea latebrosa	Vulnerable	1.44667	103.778625	Tree
Cyathea latebrosa	Vulnerable	1.446884	103.778419	Tree
Cyathea latebrosa	Vulnerable	1.446941	103.778302	Tree
Cyathea latebrosa	Vulnerable	1.446928	103.779298	Tree
Cyathea latebrosa	Vulnerable	1.446954	103.779013	Tree
Cyathea latebrosa	Vulnerable	1.447011	103.779061	Tree
Cyathea latebrosa	Vulnerable	1.446759	103.780717	Tree
Cyathea latebrosa	Vulnerable	1.446581	103.780996	Tree
Cyathea latebrosa	Vulnerable	1.446679	103.781723	Tree
Cyathea latebrosa	Vulnerable	1.446682	103.781871	Tree
Cyathea latebrosa	Vulnerable	1.446727	103.781836	Tree
Cyathea latebrosa	Vulnerable	1.446763	103.781813	Tree
Cyathea latebrosa	Vulnerable	1.446778	103.78179	Tree
Cyathea latebrosa	Vulnerable	1.446802	103.781892	Tree
Cyathea latebrosa	Vulnerable	1.446677992	103.7819071	Tree
Cyathea latebrosa	Vulnerable	1.446682038	103.7817496	Tree
Cyathea latebrosa	Vulnerable	1.446682738	103.781719	Tree
Cyathea latebrosa	Vulnerable	1.446683405	103.7819076	Tree
Cyathea latebrosa	Vulnerable	1.446717176	103.7818209	Tree
Cyathea latebrosa	Vulnerable	1.446797883	103.7817883	Tree
Cyathea latebrosa	Vulnerable	1.44671	103.781729	Tree
Cyathea latebrosa	Vulnerable	1.446772	103.781526	Tree
Cyathea latebrosa	Vulnerable	1.446803	103.781342	Tree
Cyathea latebrosa	Vulnerable	1.446819	103.781185	Tree
Cyathea latebrosa	Vulnerable	1.446821965	103.7816559	Tree
Cyathea latebrosa	Vulnerable	1.446828	103.781234	Tree
Cyathea latebrosa	Vulnerable	1.446834	103.781234	Tree
Cyathea latebrosa	Vulnerable	1.445161	103.781205	Tree
Cyathea latebrosa	Vulnerable	1.445321	103.780934	Tree
Cyathea latebrosa	Vulnerable	1.445321	103.780884	Tree
Cyathea latebrosa	Vulnerable	1.445343	103.781026	Tree
Cyathea latebrosa	Vulnerable	1.445519	103.780889	Tree
Cyathea latebrosa	Vulnerable	1.445686	103.780706	Tree
Cyathea latebrosa	Vulnerable	1.445767155	103.780687	Tree
Cyathea latebrosa	Vulnerable	1.445789	103.780588	Tree
Cyathea latebrosa	Vulnerable	1.445806	103.780657	Tree
Cyathea latebrosa	Vulnerable	1.445928	103.780584	Tree
Cyathea latebrosa	Vulnerable	1.446022	103.780584	Tree
Cyathea latebrosa	Vulnerable	1.446107	103.780597	Tree
Cyathea latebrosa	Vulnerable	1.445484	103.781283	Tree
Cyathea latebrosa	Vulnerable	1.446753	103.780608	Tree

Cyathea latebrosa	Vulnerable	1.446783	103.780722	Tree
Cyathea latebrosa	Vulnerable	1.446812	103.780787	Tree
Cyathea latebrosa	Vulnerable	1.446738	103.780984	Tree
Cyathea latebrosa	Vulnerable	1.446508	103.780949	Tree
Cyathea latebrosa	Vulnerable	1.446418	103.780899	Tree
Cyathea latebrosa	Vulnerable	1.446633	103.780559	Tree
Cyathea latebrosa	Vulnerable	1.444906	103.781175	Tree
Cyathea latebrosa	Vulnerable	1.44511	103.781147	Tree
Cyathea latebrosa	Vulnerable	1.445157	103.781145	Tree
Cyathea latebrosa	Vulnerable	1.445273	103.781009	Tree
Cyathea latebrosa	Vulnerable	1.445266	103.780987	Tree
Cyathea latebrosa	Vulnerable	1.445285	103.781023	Tree
Cyathea latebrosa	Vulnerable	1.445296	103.780872	Tree
Cyathea latebrosa	Vulnerable	1.445366	103.780816	Tree
Cyathea latebrosa	Vulnerable	1.445443	103.780758	Tree
Cyathea latebrosa	Vulnerable	1.445492	103.780666	Tree
Cyathea latebrosa	Vulnerable	1.445564	103.780678	Tree
Cyathea latebrosa	Vulnerable	1.445857	103.780631	Tree
Cyathea latebrosa	Vulnerable	1.445948	103.780446	Tree
Cyathea latebrosa	Vulnerable	1.446331	103.780526	Tree
Cyathea latebrosa	Vulnerable	1.446295	103.780428	Tree
Cyathea latebrosa	Vulnerable	1.446139	103.780439	Tree
Cyathea latebrosa	Vulnerable	1.44822973	103.7834258	Tree
Decaspermum fruticosum	Vulnerable	1.446381	103.780533	Tree
Dolichandrone spathacea	Critically endangered	1.450703	103.777754	Tree
Dolichandrone spathacea	Critically endangered	1.45073196	103.7777806	Tree
Dolichandrone spathacea	Critically endangered	1.449387	103.778483	Tree
Embelia canescens	Endangered	1.446359	103.780945	Climber
Embelia canescens	Endangered	1.446641	103.780535	Climber
Endospermum diadenum	Vulnerable	1.450284144	103.7771345	Tree
Endospermum diadenum	Vulnerable	1.450347	103.777817	Tree
Endospermum diadenum	Vulnerable	1.449794543	103.7782073	Tree
Endospermum diadenum	Vulnerable	1.447537793	103.7789036	Tree
Endospermum diadenum	Vulnerable	1.446892793	103.7827648	Tree
Endospermum diadenum	Vulnerable	1.446674639	103.7812748	Tree
Ficus aurata var. aurata	Vulnerable	1.44541	103.781526	Tree
Ficus aurata var. aurata	Vulnerable	1.445474	103.78151	Tree
Ficus aurata var. aurata	Vulnerable	1.445567	103.781648	Tree
Ficus aurata var. aurata	Vulnerable	1.445605	103.781282	Tree
Ficus aurata var. aurata	Vulnerable	1.44812	103.783747	Tree
Ficus aurata var. aurata	Vulnerable	1.446675456	103.7816469	Tree
Ficus aurata var. aurata	Vulnerable	1.446681783	103.7819099	Tree
Ficus aurata var. aurata	Vulnerable	1.44676839	103.7818765	Tree
Ficus aurata var. aurata	Vulnerable	1.446667888	103.7818814	Tree
Ficus aurata var. aurata	Vulnerable	1.446357773	103.781478	Tree
Ficus aurata var. aurata	Vulnerable	1.446591496	103.7815715	Tree
Ficus aurata var. aurata	Vulnerable	1.446808567	103.7816508	Tree
Ficus aurata var. aurata	Vulnerable	1.445548	103.780886	Tree
Ficus aurata var. aurata	Vulnerable	1.445562	103.781899	Tree

Ficus aurata var. aurata	Vulnerable	1.445382154	103.7815431	Tree
Ficus aurata var. aurata	Vulnerable	1.445499452	103.7814836	Tree
Ficus aurata var. aurata	Vulnerable	1.445532	103.781615	Tree
Ficus aurata var. aurata	Vulnerable	1.445547511	103.7817078	Tree
Ficus aurata var. aurata	Vulnerable	1.445625	103.781251	Tree
Ficus aurata var. aurata	Vulnerable	1.445638783	103.781411	Tree
Ficus aurata var. aurata	Vulnerable	1.445729	103.78146	Tree
Ficus aurata var. aurata	Vulnerable	1.445761	103.78138	Tree
Ficus aurata var. aurata	Vulnerable	1.445897	103.781146	Tree
Ficus aurata var. aurata	Vulnerable	1.446343	103.781199	Tree
Ficus aurata var. aurata	Vulnerable	1.446075	103.781135	Tree
Ficus aurata var. aurata	Vulnerable	1.445753	103.781338	Tree
Ficus aurata var. aurata	Vulnerable	1.445557	103.780663	Tree
Ficus aurata var. aurata	Vulnerable	1.44633	103.780583	Tree
Ficus recurva var. ribesoides	Critically endangered	1.44627	103.780394	Climber
Ficus recurva var. ribesoides	Critically endangered	1.446177	103.780519	Climber
Ficus vasculosa	Endangered	1.446038869	103.7812804	#N/A
Garcinia griffithii	Endangered	1.44544	103.780753	Tree
Garcinia griffithii	Endangered	1.445543	103.780758	Tree
Garcinia griffithii	Endangered	1.445538	103.780754	Tree
Glochidion cf. lutescens	Critically endangered	1.446001917	103.7794568	#N/A
Glochidion cf. lutescens	Critically endangered	1.446002852	103.7795822	#N/A
Glochidion cf. lutescens	Critically endangered	1.446761395	103.7816514	#N/A
Gnetum cf. microcarpum	Critically endangered	1.446665	103.780554	#N/A
Gnetum cf. microcarpum	Critically endangered	1.444861	103.781244	#N/A
Gnetum cf. microcarpum	Critically endangered	1.445721	103.781202	#N/A
Gnetum cf. microcarpum	Critically endangered	1.445834	103.781057	#N/A
Goniophlebium percussum	Vulnerable	1.450936	103.776585	Epiphyte
Goniophlebium percussum	Vulnerable	1.451185	103.778101	Epiphyte
Goniophlebium percussum	Vulnerable	1.447934	103.778328	Epiphyte
Goniophlebium percussum	Vulnerable	1.446312	103.780503	Epiphyte
Guioa cf. bijuga	Critically endangered	1.446705463	103.7814929	#N/A
Guioa cf. bijuga	Critically endangered	1.4467116	103.7814787	#N/A
Heritiera littoralis	Endangered	1.450797317	103.7778518	Tree
Heritiera littoralis	Endangered	1.450930573	103.7778383	Tree
Heritiera littoralis	Endangered	1.449167371	103.7782757	Tree
Heritiera littoralis	Endangered	1.449061	103.778873	Tree
Hornstedtia scyphifera var. scyphifera	Vulnerable	1.44556	103.781256	Herb
Hornstedtia scyphifera var. scyphifera	Vulnerable	1.446355	103.780979	Herb
Hornstedtia scyphifera var. scyphifera	Vulnerable	1.446735022	103.7811262	Herb
Hornstedtia scyphifera var. scyphifera	Vulnerable	1.445612463	103.7812039	Herb
Horsfieldia polyspherula	Vulnerable	1.449508	103.777098	Tree
Horsfieldia polyspherula	Vulnerable	1.449975	103.777296	Tree
Hoya diversifolia	Critically endangered	1.447533	103.779444	Epiphyte
Hoya diversifolia	Critically endangered	1.449774	103.778947	Epiphyte
Hoya diversifolia	Critically endangered	1.445448	103.779987	Epiphyte
Hoya diversifolia	Critically endangered	1.444591	103.781378	Epiphyte
Hoya diversifolia	Critically endangered	1.449358	103.77912	Epiphyte
Hoya diversifolia	Critically endangered	1.449189	103.779109	Epiphyte

Hoya diversifolia	Critically endangered	1.449176	103.779079	Epiphyte
Hoya diversifolia	Critically endangered	1.44918	103.77896	Epiphyte
Hoya diversifolia	Critically endangered	1.44905	103.778737	Epiphyte
Intsia bijuga	Critically endangered	1.450390372	103.7780988	Tree
Intsia bijuga	Critically endangered	1.451213	103.777941	Tree
Intsia bijuga	Critically endangered	1.446831322	103.7795735	Tree
Intsia bijuga	Critically endangered	1.447269145	103.779316	Tree
Ixonanthes icosandra	Vulnerable	1.445328	103.780901	Tree
Limacia scandens	Vulnerable	1.450441	103.776825	Climber
Limacia scandens	Vulnerable	1.445584	103.781196	Climber
Limacia scandens	Vulnerable	1.445605	103.781282	Climber
Limacia scandens	Vulnerable	1.446558	103.781104	Climber
Limacia scandens	Vulnerable	1.446581	103.781208	Climber
Limacia scandens	Vulnerable	1.446611	103.781155	Climber
Limacia scandens	Vulnerable	1.446665	103.781204	Climber
Limacia scandens	Vulnerable	1.446742	103.781417	Climber
Limacia scandens	Vulnerable	1.444889	103.781378	Climber
Limacia scandens	Vulnerable	1.445084	103.781322	Climber
Limacia scandens	Vulnerable	1.445537	103.781183	Climber
Limacia scandens	Vulnerable	1.445809	103.781076	Climber
Limacia scandens	Vulnerable	1.446111	103.780984	Climber
Limacia scandens	Vulnerable	1.446071	103.780497	Climber
Lindera cf. lucida	Vulnerable	1.446884648	103.7781008	#N/A
Lindera lucida	Vulnerable	1.449982939	103.7770988	Tree
Lindera lucida	Vulnerable	1.450006	103.777049	Tree
Lindera lucida	Vulnerable	1.450038993	103.7770262	Tree
Lindera lucida	Vulnerable	1.450132	103.777166	Tree
Lindera lucida	Vulnerable	1.450153179	103.7767997	Tree
Lindera lucida	Vulnerable	1.450233784	103.7772267	Tree
Lindera lucida	Vulnerable	1.450261	103.776779	Tree
Lindera lucida	Vulnerable	1.45027111	103.7773958	Tree
Lindera lucida	Vulnerable	1.450311999	103.7774091	Tree
Lindera lucida	Vulnerable	1.450524772	103.7772179	Tree
Lindera lucida	Vulnerable	1.450556171	103.7772978	Tree
Lindera lucida	Vulnerable	1.450591697	103.7772815	Tree
Lindera lucida	Vulnerable	1.450609	103.776267	Tree
Lindera lucida	Vulnerable	1.450614051	103.7773578	Tree
Lindera lucida	Vulnerable	1.450621336	103.7772648	Tree
Lindera lucida	Vulnerable	1.450635862	103.7766628	Tree
Lindera lucida	Vulnerable	1.450647119	103.7772353	Tree
Lindera lucida	Vulnerable	1.4506766	103.7767027	Tree
Lindera lucida	Vulnerable	1.450509	103.77688	Tree
Lindera lucida	Vulnerable	1.450614259	103.7776594	Tree
Lindera lucida	Vulnerable	1.450625436	103.7776693	Tree
Lindera lucida	Vulnerable	1.450826	103.77838	Tree
Lindera lucida	Vulnerable	1.451143482	103.7779965	Tree
Lindera lucida	Vulnerable	1.45123	103.778045	Tree
Lindera lucida	Vulnerable	1.451266881	103.7779953	Tree
Lindera lucida	Vulnerable	1.449756671	103.7775494	Tree

Lindera lucida	Vulnerable	1.450372	103.776813	Tree
Lindera lucida	Vulnerable	1.450384	103.77686	Tree
Lindera lucida	Vulnerable	1.450418	103.776911	Tree
Lindera lucida	Vulnerable	1.449808759	103.7782777	Tree
Lindera lucida	Vulnerable	1.450415768	103.7788701	Tree
Lindera lucida	Vulnerable	1.450558836	103.7791981	Tree
Lindera lucida	Vulnerable	1.450562001	103.7791658	Tree
Lindera lucida	Vulnerable	1.450583662	103.7790505	Tree
Lindera lucida	Vulnerable	1.450601729	103.7791845	Tree
Lindera lucida	Vulnerable	1.450660804	103.77916	Tree
Lindera lucida	Vulnerable	1.44783021	103.7777545	Tree
Lindera lucida	Vulnerable	1.447834817	103.7777858	Tree
Lindera lucida	Vulnerable	1.448040755	103.7779324	Tree
Lindera lucida	Vulnerable	1.448553011	103.7780568	Tree
Lindera lucida	Vulnerable	1.448640085	103.7780696	Tree
Lindera lucida	Vulnerable	1.448667167	103.7779511	Tree
Lindera lucida	Vulnerable	1.448677484	103.7780804	Tree
Lindera lucida	Vulnerable	1.448692253	103.7780583	Tree
Lindera lucida	Vulnerable	1.448794736	103.7780924	Tree
Lindera lucida	Vulnerable	1.446442611	103.7788384	Tree
Lindera lucida	Vulnerable	1.446531618	103.7787793	Tree
Lindera lucida	Vulnerable	1.446601043	103.7791311	Tree
Lindera lucida	Vulnerable	1.446672896	103.7791015	Tree
Lindera lucida	Vulnerable	1.446685599	103.7790835	Tree
Lindera lucida	Vulnerable	1.4466972	103.7788927	Tree
Lindera lucida	Vulnerable	1.44670537	103.7786974	Tree
Lindera lucida	Vulnerable	1.446720683	103.778604	Tree
Lindera lucida	Vulnerable	1.446729499	103.7787406	Tree
Lindera lucida	Vulnerable	1.446747933	103.7789958	Tree
Lindera lucida	Vulnerable	1.446761109	103.7784105	Tree
Lindera lucida	Vulnerable	1.446786764	103.7788206	Tree
Lindera lucida	Vulnerable	1.446888961	103.7781788	Tree
Lindera lucida	Vulnerable	1.446892294	103.7781784	Tree
Lindera lucida	Vulnerable	1.44690076	103.7781839	Tree
Lindera lucida	Vulnerable	1.446942018	103.7782154	Tree
Lindera lucida	Vulnerable	1.446949063	103.7781153	Tree
Lindera lucida	Vulnerable	1.446966139	103.7781567	Tree
Lindera lucida	Vulnerable	1.446974404	103.7781303	Tree
Lindera lucida	Vulnerable	1.447751707	103.7780656	Tree
Lindera lucida	Vulnerable	1.447757343	103.7780754	Tree
Lindera lucida	Vulnerable	1.444769246	103.7798984	Tree
Lindera lucida	Vulnerable	1.445152868	103.7796237	Tree
Lindera lucida	Vulnerable	1.446827516	103.7784819	Tree
Lindera lucida	Vulnerable	1.446966465	103.7783759	Tree
Lindera lucida	Vulnerable	1.4469685	103.7782891	Tree
Lindera lucida	Vulnerable	1.446973619	103.7784158	Tree
Lindera lucida	Vulnerable	1.446995879	103.7783799	Tree
Lindera lucida	Vulnerable	1.446997015	103.77837	Tree
Lindera lucida	Vulnerable	1.446997647	103.778408	Tree

Lindera lucida	Vulnerable	1.446998042	103.7784159	Tree
Lindera lucida	Vulnerable	1.44709856	103.7783178	Tree
Lindera lucida	Vulnerable	1.445422577	103.7797093	Tree
Lindera lucida	Vulnerable	1.445446065	103.7796608	Tree
Lindera lucida	Vulnerable	1.445552364	103.7797328	Tree
Lindera lucida	Vulnerable	1.446902328	103.7793562	Tree
Lindera lucida	Vulnerable	1.447862	103.778393	Tree
Lindera lucida	Vulnerable	1.448322	103.778428	Tree
Lindera lucida	Vulnerable	1.448473	103.778235	Tree
Lindera lucida	Vulnerable	1.445633348	103.7798488	Tree
Lindera lucida	Vulnerable	1.446076569	103.7797801	Tree
Lindera lucida	Vulnerable	1.446281	103.779567	Tree
Lindera lucida	Vulnerable	1.446996	103.778944	Tree
Lindera lucida	Vulnerable	1.447871	103.778354	Tree
Lindera lucida	Vulnerable	1.447924	103.778312	Tree
Lindera lucida	Vulnerable	1.445724	103.781175	Tree
Lindera lucida	Vulnerable	1.446498	103.781054	Tree
Lindera lucida	Vulnerable	1.446454	103.781007	Tree
Lindera lucida	Vulnerable	1.446515	103.78094	Tree
Lindera lucida	Vulnerable	1.446637294	103.7827699	Tree
Lindera lucida	Vulnerable	1.44792	103.783943	Tree
Lindera lucida	Vulnerable	1.448094	103.783779	Tree
Lindera lucida	Vulnerable	1.44807	103.783709	Tree
Lindera lucida	Vulnerable	1.446525263	103.7820105	Tree
Lindera lucida	Vulnerable	1.446634858	103.7815763	Tree
Lindera lucida	Vulnerable	1.446653	103.781816	Tree
Lindera lucida	Vulnerable	1.44672	103.78185	Tree
Lindera lucida	Vulnerable	1.446820152	103.7824065	Tree
Lindera lucida	Vulnerable	1.446876	103.782731	Tree
Lindera lucida	Vulnerable	1.446882	103.782736	Tree
Lindera lucida	Vulnerable	1.447016	103.782838	Tree
Lindera lucida	Vulnerable	1.447230868	103.7818978	Tree
Lindera lucida	Vulnerable	1.44664	103.78182	Tree
Lindera lucida	Vulnerable	1.446645	103.781806	Tree
Lindera lucida	Vulnerable	1.446650733	103.7817396	Tree
Lindera lucida	Vulnerable	1.446771158	103.7817755	Tree
Lindera lucida	Vulnerable	1.44567	103.781819	Tree
Lindera lucida	Vulnerable	1.44567681	103.7820234	Tree
Lindera lucida	Vulnerable	1.445679	103.781846	Tree
Lindera lucida	Vulnerable	1.445686	103.782029	Tree
Lindera lucida	Vulnerable	1.445750092	103.7819538	Tree
Lindera lucida	Vulnerable	1.445864	103.781689	Tree
Lindera lucida	Vulnerable	1.445927839	103.7817464	Tree
Lindera lucida	Vulnerable	1.445976458	103.7819772	Tree
Lindera lucida	Vulnerable	1.445984	103.782001	Tree
Lindera lucida	Vulnerable	1.44612	103.781606	Tree
Lindera lucida	Vulnerable	1.446278	103.781762	Tree
Lindera lucida	Vulnerable	1.446296	103.781909	Tree
Lindera lucida	Vulnerable	1.446300107	103.7815302	Tree

Lindera lucida	Vulnerable	1.446349515	103.7817803	Tree
Lindera lucida	Vulnerable	1.446366137	103.7816066	Tree
Lindera lucida	Vulnerable	1.446450929	103.781759	Tree
Lindera lucida	Vulnerable	1.446473852	103.7818212	Tree
Lindera lucida	Vulnerable	1.446521	103.781842	Tree
Lindera lucida	Vulnerable	1.445418	103.781647	Tree
Lindera lucida	Vulnerable	1.446120899	103.7823119	Tree
Lindera lucida	Vulnerable	1.446138113	103.7823815	Tree
Lindera lucida	Vulnerable	1.446154	103.781327	Tree
Lindera lucida	Vulnerable	1.446238	103.781362	Tree
Lindera lucida	Vulnerable	1.446303698	103.7814258	Tree
Lindera lucida	Vulnerable	1.446323985	103.7814309	Tree
Lindera lucida	Vulnerable	1.446359732	103.7814934	Tree
Lindera lucida	Vulnerable	1.446361	103.781446	Tree
Lindera lucida	Vulnerable	1.446370108	103.7814877	Tree
Lindera lucida	Vulnerable	1.446408894	103.7824364	Tree
Lindera lucida	Vulnerable	1.446451134	103.7815575	Tree
Lindera lucida	Vulnerable	1.446461315	103.7824423	Tree
Lindera lucida	Vulnerable	1.446467017	103.7813556	Tree
Lindera lucida	Vulnerable	1.446480335	103.781523	Tree
Lindera lucida	Vulnerable	1.44649527	103.7814562	Tree
Lindera lucida	Vulnerable	1.446509948	103.7814449	Tree
Lindera lucida	Vulnerable	1.446536219	103.7815868	Tree
Lindera lucida	Vulnerable	1.446557955	103.781585	Tree
Lindera lucida	Vulnerable	1.446774764	103.7811408	Tree
Lindera lucida	Vulnerable	1.445434077	103.7818922	Tree
Lindera lucida	Vulnerable	1.445507082	103.7808613	Tree
Lindera lucida	Vulnerable	1.445632761	103.7807672	Tree
Lindera lucida	Vulnerable	1.447965116	103.7820582	Tree
Lindera lucida	Vulnerable	1.445404822	103.7814842	Tree
Lindera lucida	Vulnerable	1.445429	103.781397	Tree
Lindera lucida	Vulnerable	1.445493	103.781647	Tree
Lindera lucida	Vulnerable	1.445501	103.78167	Tree
Lindera lucida	Vulnerable	1.445502	103.781522	Tree
Lindera lucida	Vulnerable	1.44550833	103.7814945	Tree
Lindera lucida	Vulnerable	1.44554	103.781272	Tree
Lindera lucida	Vulnerable	1.445561	103.781884	Tree
Lindera lucida	Vulnerable	1.445567	103.781355	Tree
Lindera lucida	Vulnerable	1.445569	103.781848	Tree
Lindera lucida	Vulnerable	1.44557058	103.7813056	Tree
Lindera lucida	Vulnerable	1.445594364	103.7816292	Tree
Lindera lucida	Vulnerable	1.445646997	103.7812725	Tree
Lindera lucida	Vulnerable	1.44565207	103.781329	Tree
Lindera lucida	Vulnerable	1.445653	103.7819	Tree
Lindera lucida	Vulnerable	1.445670627	103.781645	Tree
Lindera lucida	Vulnerable	1.445688	103.781566	Tree
Lindera lucida	Vulnerable	1.445784	103.781435	Tree
Lindera lucida	Vulnerable	1.445804	103.78126	Tree
Lindera lucida	Vulnerable	1.44583737	103.7812099	Tree

Lindera lucida	Vulnerable	1.445841229	103.7813543	Tree
Lindera lucida	Vulnerable	1.445880646	103.7813676	Tree
Lindera lucida	Vulnerable	1.445909149	103.7811821	Tree
Lindera lucida	Vulnerable	1.445975028	103.7813401	Tree
Lindera lucida	Vulnerable	1.446191	103.781252	Tree
Lindera lucida	Vulnerable	1.446289	103.781243	Tree
Lindera lucida	Vulnerable	1.446801	103.780794	Tree
Lindera lucida	Vulnerable	1.446112	103.781155	Tree
Lindera lucida	Vulnerable	1.446051	103.781056	Tree
Lindera lucida	Vulnerable	1.446327	103.780959	Tree
Lindera lucida	Vulnerable	1.445286	103.780946	Tree
Lithocarpus cantleyanus	Critically endangered	1.445332669	103.7809116	Tree
Lithocarpus cantleyanus	Critically endangered	1.445366576	103.7808903	Tree
Lithocarpus conocarpus	Critically endangered	1.445363194	103.7809079	Tree
Litsea firma	Vulnerable	1.44949	103.777216	Tree
Litsea firma	Vulnerable	1.449882154	103.7774225	Tree
Litsea firma	Vulnerable	1.449897	103.777312	Tree
Litsea firma	Vulnerable	1.450202	103.777171	Tree
Litsea firma	Vulnerable	1.45063	103.777234	Tree
Litsea firma	Vulnerable	1.450423219	103.7781103	Tree
Litsea firma	Vulnerable	1.450725	103.77824	Tree
Litsea firma	Vulnerable	1.450764	103.77808	Tree
Litsea firma	Vulnerable	1.450839	103.778347	Tree
Litsea firma	Vulnerable	1.450879	103.776592	Tree
Litsea firma	Vulnerable	1.450952	103.778037	Tree
Litsea firma	Vulnerable	1.450963	103.778068	Tree
Litsea firma	Vulnerable	1.449351598	103.777398	Tree
Litsea firma	Vulnerable	1.449401	103.777377	Tree
Litsea firma	Vulnerable	1.449692	103.777531	Tree
Litsea firma	Vulnerable	1.449746088	103.777531	Tree
Litsea firma	Vulnerable	1.449861	103.777641	Tree
Litsea firma	Vulnerable	1.450577	103.776852	Tree
Litsea firma	Vulnerable	1.450942	103.778058	Tree
Litsea firma	Vulnerable	1.448315948	103.7779263	Tree
Litsea firma	Vulnerable	1.448410976	103.7778818	Tree
Litsea firma	Vulnerable	1.448679686	103.7780401	Tree
Litsea firma	Vulnerable	1.448833	103.778065	Tree
Litsea firma	Vulnerable	1.448882	103.77796	Tree
Litsea firma	Vulnerable	1.448374	103.777898	Tree
Litsea firma	Vulnerable	1.4467	103.77864	Tree
Litsea firma	Vulnerable	1.44557412	103.7797304	Tree
Litsea firma	Vulnerable	1.44565803	103.7796411	Tree
Litsea firma	Vulnerable	1.445716988	103.7796529	Tree
Litsea firma	Vulnerable	1.44684067	103.7793883	Tree
Litsea firma	Vulnerable	1.44791762	103.7788786	Tree
Litsea firma	Vulnerable	1.448248966	103.778813	Tree
Litsea firma	Vulnerable	1.448321499	103.7786979	Tree
Litsea firma	Vulnerable	1.448691	103.778481	Tree
Litsea firma	Vulnerable	1.448242	103.778177	Tree

Litsea firma	Vulnerable	1.448423777	103.7784215	Tree
Litsea firma	Vulnerable	1.446345669	103.7796278	Tree
Litsea firma	Vulnerable	1.445623	103.781498	Tree
Litsea firma	Vulnerable	1.446610344	103.7828359	Tree
Litsea firma	Vulnerable	1.446631937	103.7827281	Tree
Litsea firma	Vulnerable	1.447041044	103.7830355	Tree
Litsea firma	Vulnerable	1.448115	103.783838	Tree
Litsea firma	Vulnerable	1.446587407	103.7819224	Tree
Litsea firma	Vulnerable	1.44671	103.781898	Tree
Litsea firma	Vulnerable	1.446717	103.781846	Tree
Litsea firma	Vulnerable	1.446746624	103.7818443	Tree
Litsea firma	Vulnerable	1.446751449	103.7817965	Tree
Litsea firma	Vulnerable	1.446778	103.78179	Tree
Litsea firma	Vulnerable	1.446818124	103.7818577	Tree
Litsea firma	Vulnerable	1.446834	103.782857	Tree
Litsea firma	Vulnerable	1.446852	103.782815	Tree
Litsea firma	Vulnerable	1.446961	103.782803	Tree
Litsea firma	Vulnerable	1.447009	103.782719	Tree
Litsea firma	Vulnerable	1.446624816	103.7818063	Tree
Litsea firma	Vulnerable	1.446648825	103.7818133	Tree
Litsea firma	Vulnerable	1.446683589	103.7817615	Tree
Litsea firma	Vulnerable	1.44669257	103.7818515	Tree
Litsea firma	Vulnerable	1.446695005	103.7818494	Tree
Litsea firma	Vulnerable	1.446697205	103.7818037	Tree
Litsea firma	Vulnerable	1.446769418	103.7818027	Tree
Litsea firma	Vulnerable	1.445598	103.782012	Tree
Litsea firma	Vulnerable	1.445669112	103.7820441	Tree
Litsea firma	Vulnerable	1.445745457	103.7819182	Tree
Litsea firma	Vulnerable	1.445756082	103.7815148	Tree
Litsea firma	Vulnerable	1.445795	103.781489	Tree
Litsea firma	Vulnerable	1.445873	103.782146	Tree
Litsea firma	Vulnerable	1.445908	103.781732	Tree
Litsea firma	Vulnerable	1.445921	103.781762	Tree
Litsea firma	Vulnerable	1.44601464	103.7814417	Tree
Litsea firma	Vulnerable	1.446135184	103.7815497	Tree
Litsea firma	Vulnerable	1.44636288	103.7815882	Tree
Litsea firma	Vulnerable	1.44637821	103.7816118	Tree
Litsea firma	Vulnerable	1.446504008	103.7817974	Tree
Litsea firma	Vulnerable	1.446118438	103.781371	Tree
Litsea firma	Vulnerable	1.44633	103.781363	Tree
Litsea firma	Vulnerable	1.446358	103.78144	Tree
Litsea firma	Vulnerable	1.446515134	103.7816043	Tree
Litsea firma	Vulnerable	1.446518449	103.7815447	Tree
Litsea firma	Vulnerable	1.446608007	103.7811619	Tree
Litsea firma	Vulnerable	1.446664	103.7811268	Tree
Litsea firma	Vulnerable	1.446682448	103.7813818	Tree
Litsea firma	Vulnerable	1.446738515	103.7813903	Tree
Litsea firma	Vulnerable	1.446813706	103.781659	Tree
Litsea firma	Vulnerable	1.444895	103.781374	Tree

Litsea firma	Vulnerable	1.445564	103.781981	Tree
Litsea firma	Vulnerable	1.445571	103.781924	Tree
Litsea firma	Vulnerable	1.445507904	103.7814968	Tree
Litsea firma	Vulnerable	1.445516	103.781486	Tree
Litsea firma	Vulnerable	1.445546834	103.7812029	Tree
Litsea firma	Vulnerable	1.445555524	103.7816825	Tree
Litsea firma	Vulnerable	1.44559	103.781588	Tree
Litsea firma	Vulnerable	1.445606	103.78127	Tree
Litsea firma	Vulnerable	1.445606308	103.7812065	Tree
Litsea firma	Vulnerable	1.445637	103.781361	Tree
Litsea firma	Vulnerable	1.445651	103.781587	Tree
Litsea firma	Vulnerable	1.445659855	103.7816018	Tree
Litsea firma	Vulnerable	1.445661504	103.7816501	Tree
Litsea firma	Vulnerable	1.445666215	103.7813681	Tree
Litsea firma	Vulnerable	1.445682162	103.7814409	Tree
Litsea firma	Vulnerable	1.445765747	103.781238	Tree
Litsea firma	Vulnerable	1.446037	103.781244	Tree
Litsea firma	Vulnerable	1.446123	103.781153	Tree
Litsea firma	Vulnerable	1.445721	103.78106	Tree
Litsea firma	Vulnerable	1.445997	103.781001	Tree
Litsea firma	Vulnerable	1.446174	103.781098	Tree
Lumnitzera littorea	Endangered	1.449167	103.778955	Tree
Lygodium longifolium	Vulnerable	1.446675	103.781708	Climber
Macaranga hullettii	Critically endangered	1.449976	103.777107	Tree
Macaranga hullettii	Critically endangered	1.450705	103.778177	Tree
Macaranga hullettii	Critically endangered	1.45073	103.778157	Tree
Macaranga hullettii	Critically endangered	1.45073	103.777991	Tree
Macaranga hullettii	Critically endangered	1.450781	103.778093	Tree
Macaranga hullettii	Critically endangered	1.45096	103.778017	Tree
Macaranga hullettii	Critically endangered	1.450979	103.778009	Tree
Macaranga hullettii	Critically endangered	1.450483	103.778903	Tree
Macaranga hullettii	Critically endangered	1.446676	103.778779	Tree
Macaranga hullettii	Critically endangered	1.447135616	103.7782463	Tree
Macaranga hullettii	Critically endangered	1.448421704	103.7787204	Tree
Macaranga hullettii	Critically endangered	1.448262	103.778184	Tree
Macaranga hullettii	Critically endangered	1.448761843	103.7837485	Tree
Macaranga hullettii	Critically endangered	1.44656	103.780985	Tree
Macaranga recurvata	Critically endangered	1.446661345	103.7816147	#N/A
Macaranga recurvata	Critically endangered	1.446730515	103.7811293	#N/A
Macaranga recurvata	Critically endangered	1.446804163	103.7813318	#N/A
Mangifera odorata	Vulnerable	1.447400987	103.7835998	Tree
Mangifera odorata	Vulnerable	1.447408416	103.7834572	Tree
Mangifera odorata	Vulnerable	1.448175408	103.7837995	Tree
Mangifera odorata	Vulnerable	1.448091647	103.7822536	Tree
Maranthes corymbosa	Endangered	1.446243	103.780956	Tree
Merope angulata	Critically endangered	1.449641	103.77899	Shrub
Molineria latifolia var. latifolia	Vulnerable	1.446402	103.781127	Herb
Molineria latifolia var. latifolia	Vulnerable	1.446618	103.78115	Herb
Molineria latifolia var. latifolia	Vulnerable	1.446422	103.781134	Herb

Molineria latifolia var. latifolia	Vulnerable	1.44671	103.781089	Herb
Molineria latifolia var. latifolia	Vulnerable	1.445388	103.780861	Herb
Neesia malayana	Extinct (Presumably)	1.445958	103.780395	Tree
Nepenthes rafflesiana	Vulnerable	1.450484	103.776877	Climber
Nepenthes rafflesiana	Vulnerable	1.446684	103.781068	Climber
Nypa fruticans	Vulnerable	1.451253994	103.778119	Shrub
Nypa fruticans	Vulnerable	1.450046906	103.77939	Shrub
Nypa fruticans	Vulnerable	1.44963	103.779307	Shrub
Nypa fruticans	Vulnerable	1.449181	103.779088	Shrub
Nypa fruticans	Vulnerable	1.44462	103.780863	Shrub
Nypa fruticans	Vulnerable	1.446343	103.780155	Shrub
Oncosperma cf. tigillaria	Vulnerable	1.444587	103.779995	#N/A
Oncosperma cf. horridum	Vulnerable	1.445740833	103.7805499	#N/A
Oncosperma horridum	Vulnerable	1.444702303	103.7814628	Shrub
Oncosperma tigillaria	Vulnerable	1.446026	103.780267	Shrub
Oncosperma tigillaria	Vulnerable	1.450010944	103.7769614	Shrub
Oncosperma tigillaria	Vulnerable	1.450427	103.77651	Shrub
Oncosperma tigillaria	Vulnerable	1.450602	103.776691	Shrub
Oncosperma tigillaria	Vulnerable	1.450724994	103.7770579	Shrub
Oncosperma tigillaria	Vulnerable	1.450736022	103.7770944	Shrub
Oncosperma tigillaria	Vulnerable	1.45087315	103.776517	Shrub
Oncosperma tigillaria	Vulnerable	1.450082891	103.7794181	Shrub
Oncosperma tigillaria	Vulnerable	1.450866138	103.7792726	Shrub
Oncosperma tigillaria	Vulnerable	1.445410675	103.7795347	Shrub
Oncosperma tigillaria	Vulnerable	1.445643402	103.7794008	Shrub
Oncosperma tigillaria	Vulnerable	1.446940128	103.7783367	Shrub
Oncosperma tigillaria	Vulnerable	1.445673991	103.7796383	Shrub
Oncosperma tigillaria	Vulnerable	1.446878351	103.7793868	Shrub
Oncosperma tigillaria	Vulnerable	1.448248731	103.7787856	Shrub
Oncosperma tigillaria	Vulnerable	1.448572986	103.7785897	Shrub
Oncosperma tigillaria	Vulnerable	1.447176517	103.7789411	Shrub
Oncosperma tigillaria	Vulnerable	1.447597	103.77873	Shrub
Oncosperma tigillaria	Vulnerable	1.445802	103.779765	Shrub
Oncosperma tigillaria	Vulnerable	1.445813453	103.7797588	Shrub
Oncosperma tigillaria	Vulnerable	1.445624	103.781271	Shrub
Oncosperma tigillaria	Vulnerable	1.446531	103.780986	Shrub
Oncosperma tigillaria	Vulnerable	1.446742595	103.781849	Shrub
Oncosperma tigillaria	Vulnerable	1.446761431	103.7818628	Shrub
Oncosperma tigillaria	Vulnerable	1.446802234	103.7818253	Shrub
Oncosperma tigillaria	Vulnerable	1.446668224	103.7817474	Shrub
Oncosperma tigillaria	Vulnerable	1.44667315	103.7817423	Shrub
Oncosperma tigillaria	Vulnerable	1.446693516	103.7817441	Shrub
Oncosperma tigillaria	Vulnerable	1.445749823	103.7820682	Shrub
Oncosperma tigillaria	Vulnerable	1.446576169	103.7812039	Shrub
Oncosperma tigillaria	Vulnerable	1.446671138	103.7814232	Shrub
Oncosperma tigillaria	Vulnerable	1.446739641	103.7814895	Shrub
Oncosperma tigillaria	Vulnerable	1.446781151	103.7813863	Shrub
Oncosperma tigillaria	Vulnerable	1.444571158	103.7814401	Shrub
Oncosperma tigillaria	Vulnerable	1.444763135	103.781386	Shrub

Oncosperma tigillaria	Vulnerable	1.44484576	103.7813831	Shrub
Oncosperma tigillaria	Vulnerable	1.444958232	103.7813039	Shrub
Oncosperma tigillaria	Vulnerable	1.445042	103.781291	Shrub
Oncosperma tigillaria	Vulnerable	1.445106	103.781393	Shrub
Oncosperma tigillaria	Vulnerable	1.445197392	103.7811097	Shrub
Oncosperma tigillaria	Vulnerable	1.445249002	103.7810856	Shrub
Oncosperma tigillaria	Vulnerable	1.44534524	103.7810349	Shrub
Oncosperma tigillaria	Vulnerable	1.445363044	103.7809676	Shrub
Oncosperma tigillaria	Vulnerable	1.445388782	103.7809046	Shrub
Oncosperma tigillaria	Vulnerable	1.445429006	103.7809035	Shrub
Oncosperma tigillaria	Vulnerable	1.445669	103.780658	Shrub
Oncosperma tigillaria	Vulnerable	1.445705822	103.7806769	Shrub
Oncosperma tigillaria	Vulnerable	1.445757799	103.7807107	Shrub
Oncosperma tigillaria	Vulnerable	1.445760386	103.7806045	Shrub
Oncosperma tigillaria	Vulnerable	1.445026924	103.7813221	Shrub
Oncosperma tigillaria	Vulnerable	1.445083	103.781319	Shrub
Oncosperma tigillaria	Vulnerable	1.445618	103.781253	Shrub
Oncosperma tigillaria	Vulnerable	1.44577	103.781112	Shrub
Oncosperma tigillaria	Vulnerable	1.4463	103.781198	Shrub
Oncosperma tigillaria	Vulnerable	1.446273	103.781072	Shrub
Oncosperma tigillaria	Vulnerable	1.445951	103.781019	Shrub
Oncosperma tigillaria	Vulnerable	1.446367	103.780948	Shrub
Oncosperma tigillaria	Vulnerable	1.446655	103.78056	Shrub
Oncosperma tigillaria	Vulnerable	1.444803	103.781239	Shrub
Oncosperma tigillaria	Vulnerable	1.444964	103.781214	Shrub
Oncosperma tigillaria	Vulnerable	1.445531	103.780704	Shrub
Oncosperma tigillaria	Vulnerable	1.445876	103.780557	Shrub
Oncosperma tigillaria	Vulnerable	1.446337	103.780456	Shrub
Oncosperma tigillaria	Vulnerable	1.447956	103.782979	Shrub
Oncosperma tigillaria	Vulnerable	1.448104	103.783725	Shrub
Oxyceros fragrantissimus	Endangered	1.446438	103.780949	Climber
Oxyceros fragrantissimus	Endangered	1.444799	103.781336	Climber
Oxyceros fragrantissimus	Endangered	1.445442	103.780751	Climber
Oxyceros longiflorus	Vulnerable	1.45056	103.777334	Climber
Oxyceros longiflorus	Vulnerable	1.4509	103.775974	Climber
Oxyceros longiflorus	Vulnerable	1.450578	103.777675	Climber
Oxyceros longiflorus	Vulnerable	1.450856	103.777532	Climber
Oxyceros longiflorus	Vulnerable	1.450547	103.777644	Climber
Oxyceros longiflorus	Vulnerable	1.450257	103.779158	Climber
Oxyceros longiflorus	Vulnerable	1.450658	103.779272	Climber
Oxyceros longiflorus	Vulnerable	1.450781	103.779279	Climber
Oxyceros longiflorus	Vulnerable	1.45092	103.779289	Climber
Oxyceros longiflorus	Vulnerable	1.451011	103.779551	Climber
Oxyceros longiflorus	Vulnerable	1.44699	103.77817	Climber
Oxyceros longiflorus	Vulnerable	1.447444	103.77918	Climber
Oxyceros longiflorus	Vulnerable	1.448329	103.778676	Climber
Oxyceros longiflorus	Vulnerable	1.448543	103.778582	Climber
Oxyceros longiflorus	Vulnerable	1.447789	103.779159	Climber
Oxyceros longiflorus	Vulnerable	1.444581	103.780457	Climber

Oxyceros longiflorus	Vulnerable	1.445762	103.779808	Climber
Oxyceros longiflorus	Vulnerable	1.445414	103.781571	Climber
Oxyceros longiflorus	Vulnerable	1.447879	103.778308	Climber
Oxyceros longiflorus	Vulnerable	1.445659	103.781394	Climber
Oxyceros longiflorus	Vulnerable	1.446499	103.781206	Climber
Oxyceros longiflorus	Vulnerable	1.446671	103.781789	Climber
Oxyceros longiflorus	Vulnerable	1.445677	103.782031	Climber
Oxyceros longiflorus	Vulnerable	1.445893	103.781512	Climber
Oxyceros longiflorus	Vulnerable	1.446555	103.781782	Climber
Oxyceros longiflorus	Vulnerable	1.446477	103.781647	Climber
Oxyceros longiflorus	Vulnerable	1.446791	103.781487	Climber
Oxyceros longiflorus	Vulnerable	1.444706	103.781487	Climber
Oxyceros longiflorus	Vulnerable	1.445381	103.781614	Climber
Oxyceros longiflorus	Vulnerable	1.445437	103.781341	Climber
Oxyceros longiflorus	Vulnerable	1.446015	103.780567	Climber
Oxyceros longiflorus	Vulnerable	1.44581	103.781367	Climber
Palaquium obovatum	Vulnerable	1.449050202	103.7781261	Tree
Palaquium obovatum	Vulnerable	1.449123265	103.7781335	Tree
Pandanus cf. atrocarpus	Endangered	1.451081	103.778045	#N/A
Pandanus cf. atrocarpus	Endangered	1.451207	103.77796	#N/A
Pandanus cf. atrocarpus	Endangered	1.451227	103.778003	#N/A
Pandanus cf. atrocarpus	Endangered	1.44668709	103.7795127	#N/A
Pandanus cf. atrocarpus	Endangered	1.445318	103.780966	#N/A
Peltophorum pterocarpum	Critically endangered	1.450506253	103.7777495	Tree
Peltophorum pterocarpum	Critically endangered	1.446250414	103.7790557	Tree
Peltophorum pterocarpum	Critically endangered	1.446299224	103.7789703	Tree
Peltophorum pterocarpum	Critically endangered	1.446496396	103.7787042	Tree
Peltophorum pterocarpum	Critically endangered	1.446683049	103.7784516	Tree
Peltophorum pterocarpum	Critically endangered	1.446848185	103.7780313	Tree
Peltophorum pterocarpum	Critically endangered	1.444864843	103.7797421	Tree
Peltophorum pterocarpum	Critically endangered	1.446100483	103.7791323	Tree
Peltophorum pterocarpum	Critically endangered	1.444785444	103.7800767	Tree
Peltophorum pterocarpum	Critically endangered	1.444810631	103.78028	Tree
Peltophorum pterocarpum	Critically endangered	1.444818423	103.7802486	Tree
Phanera semibifida var. semibifid	Vulnerable	1.446614096	103.7816694	#N/A
Phanera semibifida var. semibifid	Vulnerable	1.446619313	103.7819172	#N/A
Phanera semibifida var. semibifid	Vulnerable	1.446707882	103.7817272	#N/A
Phanera semibifida var. semibifid	Vulnerable	1.446750481	103.7814364	#N/A
Phanera semibifida var. semibifid	Vulnerable	1.446782726	103.7814554	#N/A
Phanera semibifida var. semibifida	Vulnerable	1.446682	103.781883	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446355	103.781882	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446473	103.781329	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446495	103.781463	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446538	103.781213	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446618	103.78115	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446649	103.781464	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446679	103.781315	Climber
Phanera semibifida var. semibifida	Vulnerable	1.44672	103.781366	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446735	103.781345	Climber

Phanera semibifida var. semibifida	Vulnerable	1.446745	103.78127	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446765	103.781094	Climber
Phanera semibifida var. semibifida	Vulnerable	1.446788	103.78149	Climber
Phanera semibifida var. semibifida	Vulnerable	1.44679	103.780944	Climber
Piper pedicellosum	Critically endangered	1.445453	103.781451	Climber
Piper pedicellosum	Critically endangered	1.446093	103.781082	Climber
Piper pedicellosum	Critically endangered	1.446796	103.782929	Climber
Piper pedicellosum	Critically endangered	1.448128	103.784146	Climber
Piper pedicellosum	Critically endangered	1.44712	103.782318	Climber
Piper pedicellosum	Critically endangered	1.447256	103.782472	Climber
Piper pedicellosum	Critically endangered	1.447285	103.782471	Climber
Piper pedicellosum	Critically endangered	1.447302	103.78259	Climber
Piper pedicellosum	Critically endangered	1.447418	103.783359	Climber
Piper pedicellosum	Critically endangered	1.447539	103.783319	Climber
Piper pedicellosum	Critically endangered	1.446727	103.781836	Climber
Piper pedicellosum	Critically endangered	1.446885	103.782383	Climber
Piper pedicellosum	Critically endangered	1.446943	103.782543	Climber
Piper pedicellosum	Critically endangered	1.446657	103.781829	Climber
Piper pedicellosum	Critically endangered	1.445718	103.781854	Climber
Piper pedicellosum	Critically endangered	1.445788	103.781523	Climber
Piper pedicellosum	Critically endangered	1.445935	103.781762	Climber
Piper pedicellosum	Critically endangered	1.445952	103.78229	Climber
Piper pedicellosum	Critically endangered	1.446123	103.781629	Climber
Piper pedicellosum	Critically endangered	1.446283	103.781898	Climber
Piper pedicellosum	Critically endangered	1.446283	103.781898	Climber
Piper pedicellosum	Critically endangered	1.446102	103.781321	Climber
Piper pedicellosum	Critically endangered	1.446363	103.781437	Climber
Piper pedicellosum	Critically endangered	1.446485	103.781313	Climber
Piper pedicellosum	Critically endangered	1.446581	103.781502	Climber
Piper pedicellosum	Critically endangered	1.446745	103.781114	Climber
Piper pedicellosum	Critically endangered	1.44676	103.781099	Climber
Piper pedicellosum	Critically endangered	1.446812	103.781117	Climber
Piper pedicellosum	Critically endangered	1.444607	103.781425	Climber
Piper pedicellosum	Critically endangered	1.44524	103.781244	Climber
Piper pedicellosum	Critically endangered	1.445394	103.781047	Climber
Piper pedicellosum	Critically endangered	1.445437	103.7809	Climber
Piper pedicellosum	Critically endangered	1.445465	103.78193	Climber
Piper pedicellosum	Critically endangered	1.44553	103.780883	Climber
Piper pedicellosum	Critically endangered	1.445573	103.780824	Climber
Piper pedicellosum	Critically endangered	1.445671	103.780811	Climber
Piper pedicellosum	Critically endangered	1.445812	103.780708	Climber
Piper pedicellosum	Critically endangered	1.445929	103.780573	Climber
Piper pedicellosum	Critically endangered	1.445333	103.781507	Climber
Piper pedicellosum	Critically endangered	1.445338	103.781448	Climber
Piper pedicellosum	Critically endangered	1.445438	103.781353	Climber
Piper pedicellosum	Critically endangered	1.445475	103.781646	Climber
Piper pedicellosum	Critically endangered	1.445528	103.78161	Climber
Piper pedicellosum	Critically endangered	1.445609	103.781736	Climber
Piper pedicellosum	Critically endangered	1.445793	103.781363	Climber

Piper pedicellosum	Critically endangered	1.445892	103.781361	Climber
Piper pedicellosum	Critically endangered	1.446084	103.781132	Climber
Piper pedicellosum	Critically endangered	1.446526	103.780891	Climber
Piper pedicellosum	Critically endangered	1.444914	103.781324	Climber
Plectocomia elongata	Vulnerable	1.444695	103.781422	Climber
Plectocomia elongata	Vulnerable	1.444681864	103.7814061	Climber
Plectocomia elongata	Vulnerable	1.445285114	103.7810526	Climber
Plectocomia elongata	Vulnerable	1.445362151	103.7808382	Climber
Plectocomia elongata	Vulnerable	1.445591	103.780792	Climber
Plectocomia elongata	Vulnerable	1.445767	103.781136	Climber
Plectocomia elongata	Vulnerable	1.445177	103.781113	Climber
Plectocomia elongata	Vulnerable	1.445275	103.781009	Climber
Plectocomia elongata	Vulnerable	1.446327	103.780508	Climber
Pongamia pinnata	Endangered	1.446702092	103.7793179	Tree
Porterandia anisophylla	Vulnerable	1.446310865	103.7796409	Tree
Porterandia anisophylla	Vulnerable	1.44632604	103.7796388	Tree
Porterandia anisophylla	Vulnerable	1.446329	103.779684	Tree
Porterandia anisophylla	Vulnerable	1.444986342	103.7813218	Tree
Porterandia anisophylla	Vulnerable	1.44500241	103.781298	Tree
Porterandia anisophylla	Vulnerable	1.445701851	103.7806657	Tree
Porterandia anisophylla	Vulnerable	1.445018887	103.7813449	Tree
Pouteria obovata	Vulnerable	1.450553906	103.7773433	Tree
Pouteria obovata	Vulnerable	1.450609427	103.7772323	Tree
Pouteria obovata	Vulnerable	1.450635643	103.776558	Tree
Pouteria obovata	Vulnerable	1.450807	103.776515	Tree
Pouteria obovata	Vulnerable	1.450905766	103.7766056	Tree
Pouteria obovata	Vulnerable	1.45092	103.776252	Tree
Pouteria obovata	Vulnerable	1.450930699	103.7765838	Tree
Pouteria obovata	Vulnerable	1.45094417	103.7765183	Tree
Pouteria obovata	Vulnerable	1.450993662	103.7764415	Tree
Pouteria obovata	Vulnerable	1.450995	103.776853	Tree
Pouteria obovata	Vulnerable	1.450998	103.776557	Tree
Pouteria obovata	Vulnerable	1.450363988	103.7770145	Tree
Pouteria obovata	Vulnerable	1.450515835	103.7770104	Tree
Pouteria obovata	Vulnerable	1.450875	103.776593	Tree
Pouteria obovata	Vulnerable	1.451146	103.778189	Tree
Pouteria obovata	Vulnerable	1.451281744	103.7780395	Tree
Pouteria obovata	Vulnerable	1.449416199	103.7774109	Tree
Pouteria obovata	Vulnerable	1.450627386	103.7776716	Tree
Pouteria obovata	Vulnerable	1.450634529	103.7777165	Tree
Pouteria obovata	Vulnerable	1.448148528	103.7778793	Tree
Pouteria obovata	Vulnerable	1.448360736	103.777977	Tree
Pouteria obovata	Vulnerable	1.444946424	103.7797655	Tree
Pouteria obovata	Vulnerable	1.444982998	103.7797264	Tree
Pouteria obovata	Vulnerable	1.445126981	103.779671	Tree
Pouteria obovata	Vulnerable	1.448307026	103.7782155	Tree
Pouteria obovata	Vulnerable	1.448396623	103.7784102	Tree
Pouteria obovata	Vulnerable	1.445742891	103.7798411	Tree
Pouteria obovata	Vulnerable	1.447059	103.778916	Tree

Pouteria obovata	Vulnerable	1.445652	103.781309	Tree
Pouteria obovata	Vulnerable	1.44568	103.781221	Tree
Pouteria obovata	Vulnerable	1.446477	103.78113	Tree
Pouteria obovata	Vulnerable	1.446531	103.780986	Tree
Pouteria obovata	Vulnerable	1.447521843	103.7835963	Tree
Pouteria obovata	Vulnerable	1.446764	103.781858	Tree
Pouteria obovata	Vulnerable	1.448115	103.783838	Tree
Pouteria obovata	Vulnerable	1.447679447	103.7823807	Tree
Pouteria obovata	Vulnerable	1.446979919	103.782753	Tree
Pouteria obovata	Vulnerable	1.445663	103.781724	Tree
Pouteria obovata	Vulnerable	1.445976	103.782113	Tree
Pouteria obovata	Vulnerable	1.446501	103.781247	Tree
Pouteria obovata	Vulnerable	1.446532	103.781205	Tree
Pouteria obovata	Vulnerable	1.446627	103.781542	Tree
Pouteria obovata	Vulnerable	1.444953	103.781396	Tree
Pouteria obovata	Vulnerable	1.444953964	103.7815484	Tree
Pouteria obovata	Vulnerable	1.444987283	103.7815703	Tree
Pouteria obovata	Vulnerable	1.444990015	103.7815524	Tree
Pouteria obovata	Vulnerable	1.444999666	103.7813104	Tree
Pouteria obovata	Vulnerable	1.44500141	103.7815304	Tree
Pouteria obovata	Vulnerable	1.445024711	103.7816487	Tree
Pouteria obovata	Vulnerable	1.445046537	103.7814743	Tree
Pouteria obovata	Vulnerable	1.445159622	103.7812258	Tree
Pouteria obovata	Vulnerable	1.445180912	103.7812812	Tree
Pouteria obovata	Vulnerable	1.445537306	103.7808751	Tree
Pouteria obovata	Vulnerable	1.445616288	103.7808041	Tree
Pouteria obovata	Vulnerable	1.445733097	103.7806776	Tree
Pouteria obovata	Vulnerable	1.44598082	103.7806423	Tree
Pouteria obovata	Vulnerable	1.445359	103.781366	Tree
Pouteria obovata	Vulnerable	1.445381	103.781605	Tree
Pouteria obovata	Vulnerable	1.445453	103.781371	Tree
Pouteria obovata	Vulnerable	1.445509746	103.7814011	Tree
Pouteria obovata	Vulnerable	1.445564759	103.7811416	Tree
Pouteria obovata	Vulnerable	1.445646248	103.7818535	Tree
Pouteria obovata	Vulnerable	1.445657	103.781136	Tree
Pouteria obovata	Vulnerable	1.446036135	103.7811544	Tree
Pouteria obovata	Vulnerable	1.446347	103.781183	Tree
Pouteria obovata	Vulnerable	1.449195	103.778504	Tree
Pouteria obovata	Vulnerable	1.449421	103.778417	Tree
Pouteria obovata	Vulnerable	1.449421	103.778417	Tree
Premna serratifolia	Vulnerable	1.449839333	103.778211	Climber
Premna serratifolia	Vulnerable	1.450076	103.778558	Climber
Premna serratifolia	Vulnerable	1.448023513	103.7788194	Climber
Premna serratifolia	Vulnerable	1.448124275	103.7787292	Climber
Premna serratifolia	Vulnerable	1.44872733	103.7785434	Climber
Premna serratifolia	Vulnerable	1.448834674	103.7784245	Climber
Psychotria ovoidea	Vulnerable	1.448126	103.778234	Climber
Psychotria ovoidea	Vulnerable	1.445377	103.78155	Climber
Psychotria ovoidea	Vulnerable	1.445673	103.781287	Climber

Psychotria ovoidea	Vulnerable	1.446565	103.781051	Climber
Psychotria ovoidea	Vulnerable	1.448256	103.784187	Climber
Psychotria ovoidea	Vulnerable	1.446671	103.781789	Climber
Psychotria ovoidea	Vulnerable	1.446639	103.781746	Climber
Psychotria ovoidea	Vulnerable	1.445755	103.781574	Climber
Psychotria ovoidea	Vulnerable	1.446392	103.781295	Climber
Psychotria ovoidea	Vulnerable	1.446424	103.781194	Climber
Psychotria ovoidea	Vulnerable	1.446441	103.781275	Climber
Psychotria ovoidea	Vulnerable	1.446496	103.781451	Climber
Psychotria ovoidea	Vulnerable	1.446546	103.781214	Climber
Psychotria ovoidea	Vulnerable	1.446662	103.781338	Climber
Psychotria ovoidea	Vulnerable	1.446671	103.781313	Climber
Psychotria ovoidea	Vulnerable	1.446688	103.781365	Climber
Psychotria ovoidea	Vulnerable	1.446693	103.781401	Climber
Psychotria ovoidea	Vulnerable	1.445276	103.781562	Climber
Psychotria ovoidea	Vulnerable	1.445454	103.781448	Climber
Psychotria ovoidea	Vulnerable	1.445486	103.781358	Climber
Psychotria ovoidea	Vulnerable	1.445493	103.781305	Climber
Psychotria ovoidea	Vulnerable	1.445614	103.781429	Climber
Psychotria ovoidea	Vulnerable	1.445639	103.781216	Climber
Psychotria ovoidea	Vulnerable	1.445726	103.781189	Climber
Psychotria ovoidea	Vulnerable	1.445875	103.781153	Climber
Psychotria ovoidea	Vulnerable	1.446412	103.781156	Climber
Psychotria ovoidea	Vulnerable	1.446031	103.781041	Climber
Psychotria ovoidea	Vulnerable	1.445808	103.78103	Climber
Psychotria ovoidea	Vulnerable	1.446607	103.780438	Climber
Pternandra coerulescens	Vulnerable	1.44539976	103.7816848	Tree
Rothmannia macrophylla	Vulnerable	1.445294	103.780915	Shrub
Rothmannia macrophylla	Vulnerable	1.445282	103.780896	Shrub
Rothmannia macrophylla	Vulnerable	1.44528	103.780807	Shrub
Rourea asplenifolia	Critically endangered	1.445822	103.781051	Climber
Rourea asplenifolia	Critically endangered	1.446523	103.781044	Climber
Rourea asplenifolia	Critically endangered	1.446446	103.781078	Climber
Rourea mimosoides	Endangered	1.45077	103.776514	Climber
Rourea mimosoides	Endangered	1.445535	103.781304	Climber
Rourea mimosoides	Endangered	1.446308	103.781314	Climber
Rourea mimosoides	Endangered	1.446427	103.781315	Climber
Rourea mimosoides	Endangered	1.446542	103.781216	Climber
Rourea mimosoides	Endangered	1.446546	103.781214	Climber
Rourea mimosoides	Endangered	1.445535	103.781285	Climber
Rourea mimosoides	Endangered	1.446629	103.780521	Climber
Rourea mimosoides	Endangered	1.446651	103.780492	Climber
Rourea mimosoides	Endangered	1.446585	103.780447	Climber
Rourea mimosoides	Endangered	1.446442	103.780536	Climber
Rourea mimosoides	Endangered	1.444944	103.781183	Climber
Rourea mimosoides	Endangered	1.445692	103.780541	Climber
Rourea minor	Critically endangered	1.446553	103.780429	Climber
Rourea minor	Critically endangered	1.445283	103.780843	Climber
Rourea minor	Critically endangered	1.445405	103.780768	Climber

Rubus moluccanus var. moluccanus	Vulnerable	1.450831	103.776055	Climber
Rubus moluccanus var. moluccanus	Vulnerable	1.44985	103.777782	Climber
Rubus moluccanus var. moluccanus	Vulnerable	1.449873	103.777695	Climber
Rubus moluccanus var. moluccanus	Vulnerable	1.448343	103.778643	Climber
Santiria laevigata	Vulnerable	1.446803268	103.7827765	Tree
Santiria laevigata	Vulnerable	1.446841	103.782758	Tree
Santiria laevigata	Vulnerable	1.446688137	103.7818032	Tree
Santiria laevigata	Vulnerable	1.446409753	103.7813476	Tree
Scrotochloa urceolata	Vulnerable	1.446441	103.781166	Herb
Smythea lanceata	Critically endangered	1.449319	103.778605	Climber
Sonneratia caseolaris	Critically endangered	1.446967504	103.7797306	Tree
Stachyphrynium latifolium	Endangered	1.448072	103.778279	Herb
Sterculia cordata	Critically endangered	1.449845	103.777359	Tree
Sterculia cordata	Critically endangered	1.44987	103.777309	Tree
Sterculia cordata	Critically endangered	1.449893	103.777315	Tree
Sterculia cordata	Critically endangered	1.45	103.777329	Tree
Sterculia cordata	Critically endangered	1.450704	103.777941	Tree
Sterculia cordata	Critically endangered	1.450751	103.778024	Tree
Sterculia cordata	Critically endangered	1.450779	103.778088	Tree
Sterculia cordata	Critically endangered	1.450812	103.778386	Tree
Sterculia cordata	Critically endangered	1.450948	103.777986	Tree
Sterculia cordata	Critically endangered	1.449632	103.776653	Tree
Sterculia cordata	Critically endangered	1.450991	103.778039	Tree
Sterculia cordata	Critically endangered	1.446529	103.781121	Tree
Sterculia cordata	Critically endangered	1.44736	103.78349	Tree
Sterculia cordata	Critically endangered	1.446802	103.781892	Tree
Sterculia cordata	Critically endangered	1.446439	103.781285	Tree
Sterculia cordata	Critically endangered	1.446614	103.781161	Tree
Sterculia cordata	Critically endangered	1.446486	103.780978	Tree
Syzygium palembanicum	Vulnerable	1.445652	103.781259	Tree
Syzygium palembanicum	Vulnerable	1.446522	103.781188	Tree
Syzygium palembanicum	Vulnerable	1.446539747	103.7812957	Tree
Syzygium palembanicum	Vulnerable	1.446662	103.781338	Tree
Syzygium palembanicum	Vulnerable	1.446671987	103.7813685	Tree
Syzygium palembanicum	Vulnerable	1.446687	103.781294	Tree
Syzygium palembanicum	Vulnerable	1.446696	103.781312	Tree
Syzygium palembanicum	Vulnerable	1.44676188	103.781285	Tree
Syzygium palembanicum	Vulnerable	1.44538198	103.7813457	Tree
Syzygium palembanicum	Vulnerable	1.445498	103.781354	Tree
Syzygium palembanicum	Vulnerable	1.445516668	103.781411	Tree
Syzygium palembanicum	Vulnerable	1.445565066	103.7818736	Tree
Syzygium palembanicum	Vulnerable	1.445575	103.781313	Tree
Syzygium palembanicum	Vulnerable	1.445578658	103.7813194	Tree
Syzygium palembanicum	Vulnerable	1.445585	103.781355	Tree
Syzygium palembanicum	Vulnerable	1.445589	103.781207	Tree
Syzygium palembanicum	Vulnerable	1.4455961	103.7812851	Tree
Syzygium palembanicum	Vulnerable	1.445606548	103.7812727	Tree
Syzygium palembanicum	Vulnerable	1.445628129	103.7816194	Tree
Syzygium palembanicum	Vulnerable	1.445639711	103.7811909	Tree

Syzygium palembanicum	Vulnerable	1.445809878	103.7812128	Tree
Syzygium palembanicum	Vulnerable	1.445841235	103.7813597	Tree
Syzygium palembanicum	Vulnerable	1.44588	103.781361	Tree
Syzygium palembanicum	Vulnerable	1.44656	103.781153	Tree
Syzygium palembanicum	Vulnerable	1.446498	103.781054	Tree
Syzygium polyanthum	Vulnerable	1.451008	103.778031	Tree
Syzygium polyanthum	Vulnerable	1.450100773	103.7779632	Tree
Syzygium polyanthum	Vulnerable	1.450974	103.778164	Tree
Syzygium polyanthum	Vulnerable	1.450677582	103.7790039	Tree
Syzygium polyanthum	Vulnerable	1.450851948	103.7792089	Tree
Syzygium polyanthum	Vulnerable	1.448388628	103.778025	Tree
Syzygium polyanthum	Vulnerable	1.448519813	103.7780857	Tree
Syzygium polyanthum	Vulnerable	1.448796922	103.777939	Tree
Syzygium polyanthum	Vulnerable	1.446765445	103.7787769	Tree
Syzygium polyanthum	Vulnerable	1.447824831	103.7789633	Tree
Syzygium polyanthum	Vulnerable	1.44841758	103.7784798	Tree
Syzygium polyanthum	Vulnerable	1.446952	103.779032	Tree
Syzygium polyanthum	Vulnerable	1.447728637	103.7845708	Tree
Syzygium polyanthum	Vulnerable	1.444966577	103.7816159	Tree
Syzygium polyanthum	Vulnerable	1.445305557	103.7812086	Tree
Syzygium pseudoformosum	Critically endangered	1.445657	103.781195	Tree
Syzygium pseudoformosum	Critically endangered	1.445473744	103.7814167	Tree
Syzygium pseudoformosum	Critically endangered	1.445519947	103.7813425	Tree
Syzygium pseudoformosum	Critically endangered	1.445616272	103.7812373	Tree
Syzygium pseudoformosum	Critically endangered	1.445747925	103.7813731	Tree
Syzygium pseudoformosum	Critically endangered	1.44486596	103.7814492	Tree
Syzygium pseudoformosum	Critically endangered	1.444948297	103.7813098	Tree
Tectaria cf. vasta	Endangered	1.446137	103.780428	#N/A
Tectaria semipinnata	Endangered	1.446819	103.781189	Herb
Tetracera akara	Vulnerable	1.445155	103.781082	Climber
Timonius flavescens	Critically endangered	1.446569	103.781109	Tree
Timonius flavescens	Endangered	1.446876	103.779391	Tree
Vatica pauciflora	Critically endangered	1.44601	103.780379	#N/A
Willughbeia edulis	Extinct (Presumably)	1.446715	103.781198	Climber
Willughbeia edulis	Extinct (Presumably)	1.446524	103.781165	Climber
Willughbeia edulis	Extinct (Presumably)	1.446558	103.781113	Climber
Willughbeia edulis	Extinct (Presumably)	1.446739	103.781318	Climber
Willughbeia edulis	Extinct (Presumably)	1.446612	103.780484	Climber
Willughbeia edulis	Extinct (Presumably)	1.446478	103.780526	Climber
Willughbeia edulis	Extinct (Presumably)	1.445024	103.781251	Climber
Willughbeia edulis	Extinct (Presumably)	1.445148	103.781072	Climber
Willughbeia edulis	Extinct (Presumably)	1.44554	103.780723	Climber
Willughbeia edulis	Extinct (Presumably)	1.446366	103.780447	Climber
Xylopia caudata	Vulnerable	1.447001	103.779163	Tree

Appendix D

Locations and Size Data of Significant Large Trees

Tree No.	Species	National Conservation Status	Girth (m)	Height (m)	Latitude	Longitude	Location
M001	*Nypa fruticans*	Vulnerable	10m spread	8	1.44963	103.779307	Admiralty Park
M007	*Avicennia alba*	Common	1.6	12	1.449412	103.779042	Admiralty Park
M009	*Avicennia officinalis*	Common	1.85	10	1.449337	103.778688	Admiralty Park
M013	*Avicennia rumphiana*	Common	1.8	16	1.449033	103.778936	Admiralty Park
M018	*Macaranga gigantea*	Common	1.7	16	1.445450101	103.781697	Admiralty Park
M037	*Ficus benghalensis*	Exotic	4m spread	10	1.445645426	103.7808259	Admiralty Park
M046	*Oncosperma cf. horridum*	Vulnerable	2m spread	8	1.445740833	103.7805499	Admiralty Park
M053	*Oncosperma tigillaria*	Vulnerable	1.5m spread	6	1.445429006	103.7809035	Admiralty Park
M073	*Elaeis guineensis*	Exotic	2	9	1.44491817	103.7814704	Admiralty Park
M076	*Elaeis guineensis*	Exotic	1.8	4	1.444845292	103.7813835	Admiralty Park
M077	*Oncosperma tigillaria*	Vulnerable	5m spread	10	1.444763135	103.781386	Admiralty Park
M105	*Cyrtophyllum fragrans*	Common	2.5	18	1.445473732	103.78138	Admiralty Park
M109	*Cyrtophyllum fragrans*	Common	2	18	1.445550122	103.7813624	Admiralty Park
M110	*Cyrtophyllum fragrans*	Common	1.65	18	1.445565451	103.7813442	Admiralty Park
M115	*Cyrtophyllum fragrans*	Common	2.1	18	1.445637177	103.7812773	Admiralty Park
M135	*Cyrtophyllum fragrans*	Common	2.2	18	1.445904462	103.7812754	Admiralty Park
M140	*Ixonanthes reticulata*	Common	2	18	1.4457797	103.7811351	Admiralty Park
M141	*Cyrtophyllum fragrans*	Common	3.1	18	1.445781306	103.7811425	Admiralty Park
M148	*Cyrtophyllum fragrans*	Common	2.85	18	1.446276824	103.7811683	Admiralty Park
M151	*Cyrtophyllum fragrans*	Common	1.6	16	1.446512413	103.781157	Admiralty Park
M152	*Cyrtophyllum fragrans*	Common	2.5	18	1.446512617	103.781124	Admiralty Park
M153	*Ixonanthes reticulata*	Common	2.1	18	1.446618476	103.7811072	Admiralty Park
M156	*Cyrtophyllum fragrans*	Common	2.5	20	1.446634387	103.781006	Admiralty Park
M160	*Cyrtophyllum fragrans*	Common	2.8	20	1.446301414	103.7811133	Admiralty Park
M163	*Cyrtophyllum fragrans*	Common	2.1	18	1.44606342	103.781081	Admiralty Park
M166	*Cyrtophyllum fragrans*	Common	2.8	20	1.445807175	103.7811668	Admiralty Park
M169	*Cyrtophyllum fragrans*	Common	2.6	14	1.445827954	103.7813309	Admiralty Park
M175	*Cyrtophyllum fragrans*	Common	2.1	12	1.4458202	103.7810959	Admiralty Park
M177	*Ixonanthes reticulata*	Common	1.6	16	1.445940006	103.7810577	Admiralty Park
M178	*Cyrtophyllum fragrans*	Common	2.4	18	1.445952561	103.7810202	Admiralty Park
M181	*Alstonia angustiloba*	Common	1.7	16	1.446251271	103.781013	Admiralty Park
M208	*Alstonia angustiloba*	Common	3.2	20	1.446359612	103.7804541	Admiralty Park
M211	*Litsea elliptica*	Common	2	20	1.450863715	103.7762397	Admiralty Park
M215	*Oncosperma tigillaria*	Vulnerable	5	12	1.450724994	103.7770579	Admiralty Park
M216	*Oncosperma tigillaria*	Vulnerable	3	8	1.450736022	103.7770944	Admiralty Park
M223	*Ixonanthes reticulata*	Common	1.9	20	1.450505635	103.7773224	Admiralty Park
M225	*Morella esculenta*	Common	1.9	12	1.450501219	103.7773127	Admiralty Park
M227	*Cyrtophyllum fragrans*	Common	1.9	18	1.450338732	103.7774601	Admiralty Park
M230	*Ixonanthes reticulata*	Common	1.9	20	1.450318969	103.7772562	Admiralty Park
M232	*Litsea firma*	Vulnerable	1.65	20	1.449882154	103.7774225	Admiralty Park
M233	*Litsea elliptica*	Common	1.75	20	1.449971166	103.7774068	Admiralty Park
M238	*Campnosperma auriculata*	Common	1.8	20	1.449431002	103.7772737	Admiralty Park
M242	*Oncosperma tigillaria*	Vulnerable	1.8	10	1.450010944	103.7769614	Admiralty Park
M246	*Cyrtophyllum fragrans*	Common	1.8	18	1.450213219	103.7769057	Admiralty Park
M252	*Cyrtophyllum fragrans*	Common	2.6	20	1.450809609	103.7767012	Admiralty Park
M253	*Cyrtophyllum fragrans*	Common	1.9	16	1.45082894	103.7765578	Admiralty Park
M261	*Macaranga conifera*	Common	1.8	20	1.450852	103.776233	Admiralty Park
M262	*Litsea elliptica*	Common	1.6	20	1.45077	103.776245	Admiralty Park
M266	*Casuarina equisetifolia*	Common	2.55	20	1.451122452	103.7774549	Admiralty Park
M267	*Casuarina equisetifolia*	Common	2.1	20	1.4512028	103.7776429	Admiralty Park
M268	*Casuarina equisetifolia*	Common	2.1	18	1.450964959	103.7771976	Admiralty Park
M271	*Elaeis guineensis*	Exotic	2	10	1.450994464	103.7775701	Admiralty Park
M274	*Artocarpus heterophyllus*	Exotic	2	10	1.451042795	103.77775	Admiralty Park
M276	*Elaeis guineensis*	Exotic	1.8	9	1.451164385	103.7778902	Admiralty Park
M277	*Elaeis guineensis*	Exotic	2.5	9	1.451308207	103.7779416	Admiralty Park
M278	*Elaeis guineensis*	Exotic	2.5	9	1.451277846	103.777942	Admiralty Park
M279	*Elaeis guineensis*	Exotic	2	9	1.451265589	103.7780395	Admiralty Park
M283	*Elaeis guineensis*	Exotic	2	9	1.451197001	103.7780573	Admiralty Park
M297	*Casuarina equisetifolia*	Common	1.65	20	1.451004095	103.7783573	Admiralty Park
M300	*Casuarina equisetifolia*	Common	2.1	20	1.450623844	103.7780292	Admiralty Park

M301	*Casuarina equisetifolia*	Common	2.1	22	1.450643732	103.7781075	Admiralty Park
M302	*Casuarina equisetifolia*	Common	1.7	22	1.450685045	103.7780951	Admiralty Park
M311	*Peltophorum pterocarpum*	Critically endangered	1.6	14	1.450506253	103.7777495	Admiralty Park
M318	*Ixonanthes reticulata*	Common	1.9	20	1.449488786	103.7774429	Admiralty Park
M322	*Casuarina equisetifolia*	Common	3.2	18	1.45081566	103.7794782	Admiralty Park
M323	*Casuarina equisetifolia*	Common	2.05	18	1.45080303	103.7792985	Admiralty Park
M324	*Vitex pinnata*	Common	1.55	15	1.450920412	103.7793492	Admiralty Park
M326	*Casuarina equisetifolia*	Common	2.1	18	1.450770874	103.7792535	Admiralty Park
M332	*Elaeis guineensis*	Exotic	2	8	1.450546709	103.779058	Admiralty Park
M339	*Casuarina equisetifolia*	Common	1.8	16	1.450325423	103.7791561	Admiralty Park
M340	*Casuarina equisetifolia*	Common	2	18	1.450359213	103.7791607	Admiralty Park
M342	*Casuarina equisetifolia*	Common	1.85	18	1.450078088	103.7785629	Admiralty Park
M343	*Terminalia catappa*	Common	1.8	12	1.449970643	103.778322	Admiralty Park
M347	*Taliparititi tiliaceum*	Common	2.8	12	1.449660775	103.7781473	Admiralty Park
M351	*Casuarina equisetifolia*	Common	2.45	18	1.450597285	103.7794103	Admiralty Park
M352	*Casuarina equisetifolia*	Common	2.6	20	1.450310221	103.779229	Admiralty Park
M353	*Casuarina equisetifolia*	Common	2.9	20	1.450229383	103.7791272	Admiralty Park
M354	*Casuarina equisetifolia*	Common	1.8	20	1.450245148	103.7789032	Admiralty Park
M364	*Samanea saman*	Exotic	1.55	10	1.449252209	103.7781258	Admiralty Park
M366	*Samanea saman*	Exotic	1.75	10	1.448812896	103.7781065	Admiralty Park
M368	*Ficus microcarpa*	Common	8m spread	18	1.448871862	103.7779785	Admiralty Park
M375	*Vitex pinnata*	Common	1.6	18	1.448516233	103.7778778	Admiralty Park
M393	*Erythrophleum suaveolens*	Exotic	1.8	18	1.44771161	103.777657	Admiralty Park
M394	*Erythrophleum suaveolens*	Exotic	2.4	18	1.447599585	103.7776435	Admiralty Park
M396	*Erythrophleum suaveolens*	Exotic	1.6	20	1.447205785	103.7775497	Admiralty Park
M409	*Peltophorum pterocarpum*	Critically endangered	1.7	18	1.446496396	103.7787042	Admiralty Park
M410	*Ficus microcarpa*	Common	6m spread	18	1.44642269	103.7788807	Admiralty Park
M441	*Cinnamomum iners*	Common	1.55	10	1.447022457	103.7785404	Admiralty Park
M442	*Peltophorum pterocarpum*	Critically endangered	2.5	16	1.446100483	103.7791323	Admiralty Park
M443	*Cinnamomum iners*	Common	2	8	1.445962909	103.7792355	Admiralty Park
M444	*Cyrtophyllum fragrans*	Common	1.6	16	1.445841427	103.7793638	Admiralty Park
M445	*Antidesma bunius*	Exotic	1.55	12	1.445692715	103.7794887	Admiralty Park
M448	*Delonix regia*	Exotic	1.6	16	1.445319764	103.77957	Admiralty Park
M455	*Cerbera odollam*	Vulnerable (Planted)	1.55	10	1.44426449	103.7802242	Admiralty Park
M458	*Cerbera odollam*	Vulnerable (Planted)	1.75	16	1.444294441	103.7803297	Admiralty Park
M476	*Cerbera odollam*	Vulnerable (Planted)	1.6	14	1.444267768	103.7805359	Admiralty Park
M490	*Cerbera odollam*	Vulnerable (Planted)	2	16	1.444168806	103.7806753	Admiralty Park
M495	*Cerbera odollam*	Vulnerable (Planted)	1.8	13	1.444201373	103.7807929	Admiralty Park
M497	*Syzygium grande*	Common	1.55	15	1.444088961	103.7807227	Admiralty Park
M498	*Syzygium cf. cumini*	Exotic	1.85	15	1.443984224	103.780589	Admiralty Park
M500	*Syzygium cf. cumini*	Exotic	2.7	15	1.443918519	103.7807133	Admiralty Park
M502	*Dillenia suffruticosa*	Common	2.2	5	1.444993813	103.7799848	Admiralty Park
M503	*Dillenia suffruticosa*	Common	1.8	4	1.445366744	103.7797551	Admiralty Park
M514	*Dillenia suffruticosa*	Common	1.8	5	1.446058707	103.779494	Admiralty Park
M518	*Oncosperma tigillaria*	Vulnerable	2m spread	7	1.448572986	103.7785897	Admiralty Park
M523	*Litsea elliptica*	Common	2.05	20	1.448101521	103.7787885	Admiralty Park
M530	*Cinnamomum iners*	Common	1.6	10	1.447147138	103.7792254	Admiralty Park
M533	*Litsea firma*	Vulnerable	1.6	20	1.44684067	103.7793883	Admiralty Park
M535	*Campnosperma auriculata*	Common	1.7	12	1.446845468	103.7794175	Admiralty Park
M537	*Pandanus cf. atrocarpus*	Endangered	5	9	1.44668709	103.7795127	Admiralty Park
M541	*Avicennia rumphiana*	Common	2	14	1.44968515	103.7789371	Admiralty Park
M542	*Avicennia rumphiana*	Common	2.5	12	1.449555738	103.7790006	Admiralty Park
M543	*Avicennia rumphiana*	Common	2.4	12	1.449615378	103.7789178	Admiralty Park
M544	*Avicennia rumphiana*	Common	2	12	1.449522554	103.7789666	Admiralty Park
M545	*Avicennia rumphiana*	Common	2	12	1.449619056	103.7788773	Admiralty Park
M546	*Avicennia rumphiana*	Common	2.5	12	1.449739647	103.7790191	Admiralty Park
M548	*Avicennia rumphiana*	Common	2	10	1.449703881	103.7788404	Admiralty Park
M549	*Ficus microcarpa*	Common	2.15	15	1.44865301	103.7781643	Admiralty Park
M550	*Morella esculenta*	Common	1.8	12	1.448315429	103.7782085	Admiralty Park
M553	*Erythrophleum suaveolens*	Exotic	1.55	14	1.44791234	103.7781091	Admiralty Park
M554	*Erythrophleum suaveolens*	Exotic	2.3	15	1.447878104	103.7781462	Admiralty Park

M555	*Erythrophleum suaveolens*	Exotic	2.1	15	1.447926675	103.778277	Admiralty Park
M556	*Erythrophleum suaveolens*	Exotic	2.15	16	1.447809686	103.7782686	Admiralty Park
M558	*Erythrophleum suaveolens*	Exotic	1.55	14	1.447738963	103.7782473	Admiralty Park
M559	*Erythrophleum suaveolens*	Exotic	1.8	5	1.447603954	103.7784861	Admiralty Park
M560	*Erythrophleum suaveolens*	Exotic	3.6	15	1.44749608	103.7785685	Admiralty Park
M561	*Cinnamomum iners*	Common	1.6	10	1.447199294	103.7785398	Admiralty Park
M562	*Syzygium lineatum*	Common	1.8	12	1.446854749	103.7791839	Admiralty Park
M563	*Elaeocarpus mastersii*	Common	1.9	16	1.446985902	103.7791913	Admiralty Park
M564	*Erythrophleum suaveolens*	Exotic	3.85	14	1.448092174	103.7786263	Admiralty Park
M570	*Dillenia suffruticosa*	Common	2.5	6	1.448244852	103.7783107	Admiralty Park
M571	*Erythrophleum suaveolens*	Exotic	2.3	18	1.447912466	103.7782675	Admiralty Park
M572	*Erythrophleum suaveolens*	Exotic	1.9	20	1.44799059	103.7784356	Admiralty Park
M576	*Dillenia suffruticosa*	Common	2	6	1.447386728	103.7787518	Admiralty Park
M578	*Casuarina equisetifolia*	Common	1.8	22	1.450351375	103.7793743	Admiralty Park
M579	*Casuarina equisetifolia*	Common	2.4	22	1.450317744	103.7794225	Admiralty Park
M581	*Nypa fruticans*	Vulnerable	1.5-2.0	6	1.450046906	103.77939	Admiralty Park
M583	*Avicennia rumphiana*	Common	2	8	1.449805451	103.7793671	Admiralty Park
M586	*Samanea saman*	Exotic	1.8	15	1.44986341	103.779582	Admiralty Park
M591	*Ficus variegata*	Common	2	12	1.449389315	103.7793381	Admiralty Park
M598	*Litsea elliptica*	Common	2.1	25	1.446414125	103.7795632	Admiralty Park
M602	*Campnosperma auriculata*	Common	1.7	20	1.446223346	103.779601	Admiralty Park
M604	*Vitex pinnata*	Common	1.95	18	1.446112267	103.7797412	Admiralty Park
M616	*Ficus variegata*	Common	1.8	16	1.444662605	103.7806025	Admiralty Park
TR0014	*Mangifera odorata*	Vulnerable	1.7	16	1.447400987	103.7835998	HDB development area
TR0015	*Pterocarpus indicus*	Exotic	5.1	20	1.447512054	103.78368	HDB development area
TR0017	*Cyrtophyllum fragrans*	Common	5	16	1.447540298	103.7835978	HDB development area
TR0018	*Mangifera odorata*	Vulnerable	2.65	18	1.447408416	103.7834572	HDB development area
TR0020	*Cinnamomum iners*	Common	2.1	12	1.447192245	103.7834224	HDB development area
TR0022	*Cinnamomum iners*	Common	1.7	12	1.447116492	103.7833079	HDB development area
TR0038	*Cyrtophyllum fragrans*	Common	5	20	1.446914362	103.782929	HDB development area
TR0051	*Schefflera actinophylla*	Exotic	2.05	11	1.447991827	103.7839038	HDB development area
TR0056	*Artocarpus heterophyllus*	Exotic	2.1	12	1.447655424	103.7836983	HDB development area
TR0064	*Cyrtophyllum fragrans*	Common	3	20	1.448066971	103.7838843	HDB development area
TR0065	*Cyrtophyllum fragrans*	Common	2.1	16	1.448062277	103.7838322	HDB development area
TR0087	*Macaranga gigantea*	Common	1.85	16	1.448339488	103.7838415	HDB development area
TR0105	*Polyalthia longifolia*	Exotic	1.8	10	1.447908597	103.7834512	HDB development area
TR0117	*Mangifera indica*	Exotic	1.55	14	1.447880119	103.7829906	HDB development area
TR0120	*Mangifera indica*	Exotic	1.6	16	1.4478719	103.7828485	HDB development area
TR0182	*Cyrtophyllum fragrans*	Common	3.9	18	1.446876281	103.7827838	HDB development area
TR0183	*Cyrtophyllum fragrans*	Common	2.1+2.1+1.9	20	1.44674587	103.7827042	HDB development area
TR0187	*Cyrtophyllum fragrans*	Common	2.9+2.9	18	1.446984683	103.7827706	HDB development area
TR0194	*Cyrtophyllum fragrans*	Common	2.6	18	1.446924034	103.7822356	HDB development area
TR0197	*Cyrtophyllum fragrans*	Common	4.1	16	1.446687345	103.7821059	HDB development area
TR0204	*Cyrtophyllum fragrans*	Common	2.55	20	1.446723882	103.7818748	HDB development area
TR0226	*Ixonanthes reticulata*	Common	3.5	20	1.446615255	103.7816358	HDB development area
TR0227	*Cyrtophyllum fragrans*	Common	2.6	20	1.446610046	103.7816664	HDB development area
TR0252	*Cyrtophyllum fragrans*	Common	2.9	18	1.445614023	103.7819833	HDB development area
TR0253	*Cyrtophyllum fragrans*	Common	1.6	18	1.445606039	103.7819972	HDB development area
TR0254	*Cyrtophyllum fragrans*	Common	2.7	18	1.445638092	103.7819528	HDB development area
TR0261	*Ficus microcarpa*	Common	10m spread	20	1.445732043	103.7818207	HDB development area
TR0267	*Cyrtophyllum fragrans*	Common	3	20	1.445743392	103.7814488	HDB development area
TR0290	*Cyrtophyllum fragrans*	Common	2.7	18	1.445814602	103.7821207	HDB development area
TR0328	*Cyrtophyllum fragrans*	Common	3.1	20	1.44642233	103.7816902	HDB development area
TR0376	*Ixonanthes reticulata*	Common	1.7	12	1.446783805	103.781466	HDB development area
TR0378	*Ixonanthes reticulata*	Common	2	16	1.446760694	103.7814448	HDB development area
TR0384	*Ixonanthes reticulata*	Common	3.5	16	1.446765702	103.7814284	HDB development area
TR0386	*Ixonanthes reticulata*	Common	2.4	16	1.446730341	103.7813991	HDB development area
TR0392	*Ixonanthes reticulata*	Common	1.8	18	1.446820845	103.7812972	HDB development area
TR0397	*Ixonanthes reticulata*	Common	2.9	18	1.446672537	103.7813401	HDB development area
TR0401	*Cyrtophyllum fragrans*	Common	1.6	16	1.446686211	103.7812999	HDB development area
TR0402	*Ixonanthes reticulata*	Common	2.3	18	1.446673694	103.7812895	HDB development area

TR0411	*Ixonanthes reticulata*	Common	2.4	18	1.446570017	103.7812042	HDB development area
TR0412	*Ixonanthes reticulata*	Common	3.1	18	1.446545329	103.7812586	HDB development area
TR0414	*Cyrtophyllum fragrans*	Common	2.1	8	1.446562457	103.7813162	HDB development area
TR0415	*Cyrtophyllum fragrans*	Common	1.7	9	1.446468412	103.7812282	HDB development area
TR0418	*Cyrtophyllum fragrans*	Common	4	20	1.446411154	103.7813926	HDB development area
TR0428	*Cyrtophyllum fragrans*	Common	2.3	18	1.44623429	103.7812826	HDB development area
TR0431	*Cyrtophyllum fragrans*	Common	3.2	18	1.446070151	103.7813188	HDB development area
TR0437	*Mallotus paniculatus*	Common	1.6	9	1.448687004	103.7834169	HDB development area
TR0438	*Macaranga gigantea*	Common	2	8	1.448656593	103.7833514	HDB development area
TR0439	*Macaranga gigantea*	Common	1.8	8	1.448612409	103.7832859	HDB development area
TR0480	*Mangifera odorata*	Vulnerable	1.6	12	1.448091647	103.7822536	HDB development area
TR0491	*Mangifera indica*	Exotic	2.2	9	1.448007615	103.7825468	HDB development area
TR0626	*Ficus microcarpa*	Common	6m spread	8	1.447996654	103.7827919	HDB development area
TR0629	*Artocarpus heterophyllus*	Exotic	1.9	10	1.44847117	103.7831499	HDB development area
TR0630	*Durio zibethinus*	Exotic	2.2	16	1.44851785	103.7831779	HDB development area

Appendix E

Fauna Species of Probable Occurrence and Recorded Species

BIRDS

No.	Family	Scientific name	Common name	Rarity (singaporebirds.com)	Local status (SRDB)	Global status (IUCN/CITES)	Native Status (singaporebirds.com)	Residence Status (singaporebirds.com	Probable?	Recorded?
1	Acanthizidae	*Gerygone sulphurea*	Golden-bellied Gerygone	Common	Not Listed	Least Concern	Native	Resident	Yes	No
2	Accipitridae	*Accipiter gularis*	Japanese Sparrowhawk	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
3	Accipitridae	*Accipiter trivirgatus*	Crested Goshawk	Uncommon	Critically Endangered	Least Concern	Native	Resident	Yes	No
4	Accipitridae	*Aviceda leuphotes*	Black Baza	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
5	Accipitridae	*Haliaeetus leucogaster*	White-bellied Sea Eagle	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
6	Accipitridae	*Haliastur indus*	Brahminy Kite	Common	Not Listed	Least Concern	Native	Resident	Yes	No
7	Accipitridae	*Milvus migrans*	Black Kite	Rare	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
8	Accipitridae	*Nisaetus cirrhatus*	Changeable Hawk-Eagle	Uncommon	Endangered	Least Concern	Native	Resident	Yes	Yes
9	Accipitridae	*Pernis ptilorhynchus*	Crested Honey-buzzard	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
10	Accipitridae	*Spilornis cheela*	Crested Serpent Eagle	Rare	Critically Endangered	Least Concern	Native	Resident	Yes	No
11	Acrocephalidae	*Acrocephalus orientalis*	Oriental Reed Warbler	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
12	Aegithinidae	*Aegithina tiphia*	Common Iora	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
13	Alcedinidae	*Alcedo atthis*	Common Kingfisher	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
14	Alcedinidae	*Ceyx erithaca*	Oriental Dwarf Kingfisher	Uncommon	Not Listed	Least Concern	Migrant	Passage migrant	Yes	No
15	Alcedinidae	*Halcyon coromanda*	Ruddy Kingfisher	Uncommon	Critically Endangered	Least Concern	Migrant	Winter visitor	Yes	No
16	Alcedinidae	*Halcyon pileata*	Black-capped Kingfisher	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
17	Alcedinidae	*Halcyon smyrnensis*	White-throated Kingfisher	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
18	Alcedinidae	*Pelargopsis capensis*	Stork-billed Kingfisher	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
19	Alcedinidae	*Todiramphus chloris*	Collared Kingfisher	Common	Not Listed	Least Concern	Native		Yes	Yes
	Apodidae	*Aerodramus sp.*	Swiftlet sp.					Resident		Yes
20	Apodidae	*Aerodramus fuciphagus*	Edible-nest Swiftlet	Common	Not Listed	Least Concern	Native	Resident	Yes	No
21	Apodidae	*Aerodramus germani*	Germain's Swiftlet	Common	Not Listed	Least Concern	Native	Resident	Yes	No
22	Apodidae	*Aerodramus maximus*	Black-nest Swiftlet	Common	Not Listed	Least Concern	Native	Resident	Yes	No
23	Apodidae	*Apus nipalensis*	House Swift	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
24	Apodidae	*Apus pacificus*	Pacific Swift	Uncommon	Not Listed	Least Concern	Migrant	Passage migrant	Yes	Yes
25	Apodidae	*Cypsiurus balasiensis*	Asian Palm Swift	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
26	Apodidae	*Hirundapus cochinchinensis*	Silver-backed Needletail	Rare	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
27	Apodidae	*Hirundapus giganteus*	Brown-backed Needletail	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
28	Ardeidae	*Ardea alba*	Great Egret	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
29	Ardeidae	*Ardea cinerea*	Grey Heron	Common	Vulnerable	Least Concern	Native	Resident	Yes	Yes
30	Ardeidae	*Ardea intermedia*	Intermediate Egret	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
31	Ardeidae	*Ardea purpurea*	Purple Heron	Uncommon	Endangered	Least Concern	Native	Resident	Yes	Yes
32	Ardeidae	*Ardeola bacchus*	Chinese Pond Heron	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
33	Ardeidae	*Bubulcus coromandus*	Eastern Cattle Egret	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
34	Ardeidae	*Butorides striata*	Striated Heron	Common	Not Listed	Least Concern	Native	Visitor	Yes	Yes
35	Ardeidae	*Egretta eulophotes*	Chinese Egret	Rare	Not Listed	Vulnerable	Migrant	Winter visitor	Yes	No
36	Ardeidae	*Egretta garzetta*	Little Egret	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	Yes
37	Ardeidae	*Ixobrychus eurhythmus*	von Schrenck's Bittern	Rare	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
38	Ardeidae	*Ixobrychus sinensis*	Yellow Bittern	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
39	Ardeidae	*Nycticorax nycticorax*	Black-crowned Night Heron	Uncommon	Critically Endangered	Least Concern	Native	Resident	Yes	No
40	Bucerotidae	*Anthracoceros albirostris*	Oriental Pied Hornbill	Common	Critically Endangered	Critically Endangered	Native	Resident	Yes	No
41	Cacatuidae	*Cacatua goffiniana*	Tanimbar Corella	Uncommon	Not Listed	Near Threatened	Introduced	Resident	Yes	No
42	Cacatuidae	*Cacatua sulphurea*	Yellow-crested Cockatoo	Uncommon	Not Listed	Critically Endangered	Introduced	Resident	Yes	No
43	Campephagidae	*Lalage nigra*	Pied triller	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
44	Campephagidae	*Pericrocotus divaricatus*	Ashy Minivet	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
45	Caprimulgidae	*Caprimulgus affinis*	Savanna Nightjar	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
46	Caprimulgidae	*Caprimulgus jotaka*	Grey Nightjar	Uncommon	Not Listed	Least Concern	Migrant	Visitor	Yes	No
47	Caprimulgidae	*Caprimulgus macrurus*	Large-tailed Nightjar	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
48	Charadriidae	*Vanellus indicus*	Red-wattled Lapwing	Uncommon	Endangered	Least Concern	Native	Resident	Yes	Yes
49	Cisticolidae	*Cisticola juncidis*	Zitting Cisticola	Common	Not Listed	Least Concern	Native	Resident	Yes	No
50	Cisticolidae	*Orthotomus atrogularis*	Dark-necked Tailorbird	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
51	Cisticolidae	*Orthotomus ruficeps*	Ashy Tailorbird	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
52	Cisticolidae	*Orthotomus sericeus*	Rufous-tailed Tailorbird	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
53	Cisticolidae	*Orthotomus sutorius*	Common Tailorbird	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
54	Cisticolidae	*Prinia flaviventris*	Yellow-bellied Prinia	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
55	Columbidae	*Chalcophaps indica*	Common Emerald Dove	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
56	Columbidae	*Columba livia*	Rock Dove	Common	Not Listed	Least Concern	Introduced	Resident	Yes	No
57	Columbidae	*Geopelia striata*	Zebra Dove	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
58	Columbidae	*Ptilinopus jambu*	Jambu Fruit Dove	Uncommon	Not Listed	Near Threatened	Native	Resident	Yes	No
59	Columbidae	*Spilopelia chinensis*	Spotted Dove	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
60	Columbidae	*Streptopelia tranquebarica*	Red Turtle Dove	Uncommon	Not Listed	Least Concern	Introduced	Resident	Yes	No
61	Columbidae	*Treron vernans*	Pink-necked green pigeon	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
62	Columbidae	*Treron curvirostra*	Thick-billed Green Pigeon	Uncommon	Endangered	Least Concern	Native	Resident	No	Yes
63	Coraciidae	*Eurystomus orientalis*	Oriental Dollarbird	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
64	Corvidae	*Corvus macrorhynchos*	Large-billed Crow	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
65	Corvidae	*Corvus splendens*	House Crow	Common	Not Listed	Least Concern	Introduced	Resident	Yes	Yes
66	Cuculidae	*Cacomantis merulinus*	Plaintive Cuckoo	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
67	Cuculidae	*Cacomantis sepulcralis*	Rusty-breasted Cuckoo	Uncommon	Vulnerable	Least Concern	Native	Resident	Yes	No
68	Cuculidae	*Cacomantis sonneratii*	Banded Bay Cuckoo	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
69	Cuculidae	*Centropus bengalensis*	Lesser Coucal	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
70	Cuculidae	*Centropus sinensis*	Greater Coucal	Rare	Not Listed	Least Concern	Native	Resident	Yes	No
71	Cuculidae	*Chrysococcyx basalis*	Horsfield's Bronze Cuckoo	Rare	Not Listed	Least Concern	Migrant	Visitor	Yes	No
72	Cuculidae	*Chrysococcyx minutillus*	Little Bronze-Cuckoo	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
73	Cuculidae	*Chrysococcyx xanthorhynchus*	Violet Cuckoo	Rare	Endangered	Least Concern	Native	Resident	Yes	No
74	Cuculidae	*Clamator coromandus*	Chestnut-winged Cuckoo	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
75	Cuculidae	*Cuculus micropterus*	Indian Cuckoo	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
76	Cuculidae	*Cuculus saturatus*	Himalayan Cuckoo	Rare	Not Listed	Least Concern	Migrant	Passage migrant	Yes	No
77	Cuculidae	*Eudynamys scolopaceus*	Asian Koel	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
78	Cuculidae	*Hierococcyx nisicolor*	Hodgson's Hawk Cuckoo	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
79	Cuculidae	*Hierococcyx sparverioides*	Large Hawk-Cuckoo	Uncommon	Not Listed	Least Concern	Migrant	Visitor	Yes	No
80	Cuculidae	*Surniculus lugubris*	Square-tailed Drongo-Cuckoo	Uncommon	Critically Endangered	Least Concern	Native	Resident	Yes	No
81	Dicaeidae	*Dicaeum cruentatum*	Scarlet-backed Flowerpecker	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
82	Dicruridae	*Dicrurus paradiseus*	Greater Racket-tailed Drongo	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
83	Estrildidae	*Lonchura leucogastroides*	Javan Munia	Uncommon	Not Listed	Least Concern	Introduced	Resident	Yes	No
84	Estrildidae	*Lonchura maja*	White-headed Munia	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
85	Estrildidae	*Lonchura punctulata*	Scaly-breasted munia	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
86	Hemiprocnidae	*Hemiprocne longipennis*	Grey-rumped Treeswift	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
87	Hirundinidae	*Delichon dasypus*	Asian House Martin	Rare	Not Listed	Near Threatened	Migrant	Passage migrant	Yes	No
88	Hirundinidae	*Hirundo rustica*	Barn swallow	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	Yes
89	Hirundinidae	*Hirundo tahitica*	Pacific swallow	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
90	Laniidae	*Lanius cristatus*	Brown Shrike	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	Yes
91	Laniidae	*Lanius schach*	Long-tailed Shrike	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
92	Laniidae	*Lanius tigrinus*	Tiger Shrike	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	Yes
93	Leiothrichidae	*Garrulax leucolophus*	White-crested Laughingthrush	Common	Not Listed	Least Concern	Introduced	Resident	Yes	No
94	Megalaimidae	*Psilopogon haemacephalus*	Coppersmith barbet	Common	Not Listed	Least Concern	Native	Resident	Yes	No
95	Megalaimidae	*Psilopogon lineatus*	Lineated Barbet	Uncommon	Not Listed	Least Concern	Introduced	Resident	Yes	Yes
96	Meropidae	*Merops philippinus*	Blue-tailed bee-eater	Common	Not Listed	Least Concern	Migrant	Passage migrant	Yes	Yes
97	Meropidae	*Merops viridis*	Blue-throated Bee-eater	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
98	Monarchidae	*Terpsiphone atrocaudata*	Japanese Paradise Flycatcher	Rare	Not Listed	Near Threatened	Migrant	Passage migrant	Yes	No
99	Monarchidae	*Terpsiphone incei*	Amur Paradise Flycatcher	Common	Not Listed	Least Concern	Migrant	Passage migrant	Yes	Yes
100	Motacillidae	*Anthus rufulus*	Paddyfield Pipit	Common	Not Listed	Least Concern	Native	Resident	Yes	No
101	Motacillidae	*Dendronanthus indicus*	Forest Wagtail	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
102	Motacillidae	*Motacilla cinerea*	Grey Wagtail	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
103	Muscicapidae	*Copsychus saularis*	Oriental Magpie-Robin	Uncommon	Endangered	Least Concern	Native	Resident	Yes	Yes
104	Muscicapidae	*Cyanoptila cumatilis*	Zappey's Flycatcher	Rare	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
105	Muscicapidae	*Ficedula elisae*	Green-backed Flycatcher	Uncommon	Not Listed	Least Concern	Migrant	Visitor	Yes	No
106	Muscicapidae	*Ficedula mugimaki*	Mugimaki Flycatcher	Uncommon	Not Listed	Least Concern	Migrant	Passage migrant	Yes	No
107	Muscicapidae	*Ficedula zanthopygia*	Yellow-rumped Flycatcher	Uncommon	Not Listed	Least Concern	Migrant	Passage migrant	Yes	Yes
108	Muscicapidae	*Muscicapa dauurica*	Asian Brown Flycatcher	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	Yes
109	Muscicapidae	*Muscicapa ferruginea*	Ferruginous Flycatcher	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
110	Muscicapidae	*Muscicapa sibirica*	Dark-Sided Flycatcher	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
111	Muscicapidae	*Muscicapa williamsoni*	Brown-streaked Flycatcher	Uncommon	Not Listed	Least Concern	Migrant	Visitor	Yes	No
112	Muscicapidae	*Copsychus malabaricus*	White-rumped Shama	Rare	Critically Endangered	Least Concern	Native	Resident	No	Yes
113	Nectariniidae	*Aethopyga siparaja*	Crimson Sunbird	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
114	Nectariniidae	*Anthreptes malacensis*	Brown-throated Sunbird	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
115	Nectariniidae	*Cinnyris jugularis*	Olive-backed Sunbird	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
116	Nectariniidae	*Leptocoma calcostetha*	Copper-throated Sunbird	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
117	Oriolidae	*Oriolus chinensis*	Black-naped Oriole	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
118	Pandionidae	*Pandion haliaetus*	Western Osprey	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
119	Passeridae	*Passer montanus*	Eurasian Tree Sparrow	Common	Not Listed	Least Concern	Introduced	Resident	Yes	No
120	Phasianidae	*Gallus gallus*	Red Junglefowl	Common	Endangered	Least Concern	Native	Resident	Yes	No
121	Phylloscopidae	*Phylloscopus borealis*	Arctic Warbler	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	Yes
122	Phylloscopidae	*Phylloscopus coronatus*	Eastern Crowned Warbler	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
123	Phylloscopidae	*Phylloscopus inornatus*	Yellow-browed Warbler	Rare	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
124	Picidae	*Chrysophlegma miniaceum*	Banded Woodpecker	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	No
125	Picidae	*Dinopium javanense*	Common Flameback	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes

126	Picidae	*Micropternus brachyurus*	Rufous Woodpecker	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
127	Picidae	*Picus vittatus*	Laced Woodpecker	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
128	Picidae	*Yungipicus moluccensis*	Sunda Pygmy Woodpecker	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
129	Pittidae	*Pitta moluccensis*	Blue-winged Pitta	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
130	Pittidae	*Pitta sordida*	Hooded Pitta	Uncommon	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
131	Pittidae	*Pitta megarhyncha*	Mangrove Pitta	Rare	Critically Endangered	Near Threatened	Native	Resident	No	Yes
132	Ploceidae	*Ploceus philippinus*	Baya Weaver	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
133	Psittaculidae	*Loriculus galgulus*	Blue-crowned Hanging-parrot	Common	Endangered	Least Concern	Native	Resident	Yes	Yes
134	Psittaculidae	*Psittacula alexandri*	Red-breasted Parakeet	Common	Not Listed	Near Threatened	Introduced	Resident	Yes	Yes
135	Psittaculidae	*Psittacula krameri*	Rose-ringed Parakeet	Uncommon	Not Listed	Least Concern	Introduced	Resident	Yes	Yes
136	Psittaculidae	*Psittacula longicauda*	Long-tailed Parakeet	Uncommon	Not Listed	Near Threatened	Native	Resident	Yes	Yes
137	Psittaculidae	*Trichoglossus haematodus*	Coconut Lorikeet	Uncommon	Not Listed	Least Concern	Introduced	Resident	Yes	No
138	Pycnonotidae	*Hemixos cinereus*	Cinereous Bulbul	Rare	Not Listed	Least Concern	Migrant	Visitor	Yes	No
139	Pycnonotidae	*Pycnonotus goiavier*	Yellow-vented Bulbul	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
140	Pycnonotidae	*Pycnonotus jocosus*	Red-whiskered Bulbul	Uncommon	Not Listed	Least Concern	Introduced	Resident	Yes	Yes
141	Pycnonotidae	*Pycnonotus aurigaster*	Sooty-headed Bulbul	Uncommon	Not Listed	Least Concern	Introduced	Resident	Yes	No
142	Pycnonotidae	*Pycnonotus plumosus*	Olive-winged Bulbul	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
143	Pycnonotidae	*Pycnonotus zeylanicus*	Straw-headed Bulbul	Uncommon	Endangered	Vulnerable	Native	Resident	Yes	No
144	Rallidae	*Amaurornis phoenicurus*	White-breasted Waterhen	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
145	Rallidae	*Rallina eurizonoides*	Slaty-legged Crake	Rare	Not Listed	Least Concern	Native	Visitor	Yes	No
146	Rallidae	*Rallina fasciata*	Red-legged Crake	Uncommon	Vulnerable	Least Concern	Native	Resident	Yes	Yes
147	Rallidae	*Gallirallus striatus*	Slaty-breasted Rail	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
148	Rhipiduridae	*Rhipidura javanica*	Malaysian Pied Fantail	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
149	Scolopacidae	*Actitis hypoleucos*	Common Sandpiper	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	No
150	Strigidae	*Ketupa ketupu*	Buffy Fish Owl	Uncommon	Critically Endangered	Least Concern	Native	Resident	Yes	No
151	Strigidae	*Otus lempiji*	Sunda Scops Owl	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
152	Strigidae	*Strix seloputo*	Spotted Wood Owl	Uncommon	Critically Endangered	Least Concern	Native	Resident	Yes	Yes
153	Sturnidae	*Acridotheres javanicus*	Javan Myna	Common	Not Listed	Least Concern	Introduced	Resident	Yes	Yes
154	Sturnidae	*Acridotheres tristis*	Common Myna	Common	Not Listed	Least Concern	Native	Resident	Yes	No
155	Sturnidae	*Agropsar sturninus*	Daurian Starling	Common	Not Listed	Least Concern	Migrant	Winter visitor	Yes	Yes
156	Sturnidae	*Aplonis panayensis*	Asian Glossy Starling	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
157	Sturnidae	*Gracula religiosa*	Common Hill Myna	Uncommon	Not Listed	Least Concern	Native	Resident	Yes	Yes
158	Timaliidae	*Macronus gularis*	Pin-striped Tit-babbler	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes
159	Turdidae	*Geokichla sibirica*	Siberian Thrush	Rare	Not Listed	Least Concern	Migrant	Passage migrant	Yes	No
160	Turdidae	*Turdus obscurus*	Eyebrowed Thrush	Uncommon	Not Listed	Least Concern	Migrant	Passage migrant	Yes	No
161	Zosteropidae	*Zosterops palpebrosus*	Oriental White-eye	Common	Not Listed	Least Concern	Native	Resident	Yes	Yes

BUTTERFLIES

No.	Family	Scientific name	Common name	Local status (SRDB)	Global status (IUCN/CITES)	Abundance/Rarity (Khew, 2015)	Probable?	Recorded?
1	Hesperiidae	*Ampittia dioscorides camertes*	Bush Hopper	Not Listed	Not Assessed	Moderately common	Yes	No
2	Hesperiidae	*Ancistroides nigrita maura*	Chocolate Demon	Not Listed	Not Assessed	Common	Yes	No
3	Hesperiidae	*Borbo cinnara*	Formosan Swift	Endangered	Not Assessed	Moderately common	Yes	No
4	Hesperiidae	*Burara harisa consobrina*	Orange Awlet	Not Listed	Not Assessed	Moderately rare	Yes	No
5	Hesperiidae	*Caltoris cormasa*	Full Stop Swift	Not Listed	Not Assessed	Moderately rare	Yes	Yes
6	Hesperiidae	*Cephrenes acalle niasicus*	Plain Palm Dart	Nationally Extinct	Not Assessed	Moderately rare	Yes	No
7	Hesperiidae	*Cephrenes trichopepla*	Yellow Palm Dart	Not Assessed	Not Assessed	Common	Yes	No
8	Hesperiidae	*Erionota hiraca apicalis*	White Tipped Skipper	Not Listed	Not Assessed	Moderately rare	Yes	No
9	Hesperiidae	*Erionota thrax thrax*	Banana Skipper	Not Listed	Not Assessed	Moderately common	Yes	Yes
10	Hesperiidae	*Erionota torus*	Torus Skipper	Not Listed	Not Assessed	Moderately rare	Yes	No
11	Hesperiidae	*Hasora badra badra*	Common Awl	Not Listed	Not Assessed	Moderately common	Yes	No
12	Hesperiidae	*Hidari irava*	Coconut Skipper	Not Listed	Not Assessed	Common	Yes	Yes
13	Hesperiidae	*Iambrix salsala salsala*	Chestnut Bob	Not Listed	Not Assessed	Common	Yes	Yes
14	Hesperiidae	*Iambrix stellifer*	Starry Bob	Not Listed	Not Assessed	Moderately rare	Yes	No
15	Hesperiidae	*Notocrypta paralysos varians*	Banded Demon	Not Listed	Not Assessed	Moderately common	Yes	No
16	Hesperiidae	*Oriens gola pseudolus*	Common Dartlet	Not Listed	Not Assessed	Moderately common	Yes	Yes
17	Hesperiidae	*Pelopidas agna agna*	Bengal Swift	Endangered	Not Assessed	Moderately common	Yes	No
18	Hesperiidae	*Pelopidas assamensis*	Great Swift	Not Listed	Not Assessed	Moderately rare	Yes	No
19	Hesperiidae	*Pelopidas mathias mathias*	Small Branded Swift	Not Listed	Not Assessed	Common	Yes	Yes
20	Hesperiidae	*Plastingia naga*	Chequered Lancer	Not Listed	Not Assessed	Moderately common	Yes	Yes
21	Hesperiidae	*Polytremis lubricans lubricans*	Contiguous Swift	Not Listed	Not Assessed	Common	Yes	Yes
22	Hesperiidae	*Potanthus omaha omaha*	Lesser Dart	Not Listed	Not Assessed	Common	Yes	Yes
23	Hesperiidae	*Potanthus serina*	Large Dart	Not Assessed	Not Assessed	Moderately common	Yes	No
24	Hesperiidae	*Pyroneura latoia latoia*	Yellow Vein Lancer	Not Listed	Not Assessed	Moderately common	Yes	No
25	Hesperiidae	*Suastus gremius gremius*	Palm Bob	Not Listed	Not Assessed	Common	Yes	No
26	Hesperiidae	*Tagiades japetus atticus*	Common Snow Flat	Not Listed	Not Assessed	Moderately common	Yes	No
27	Hesperiidae	*Telicota augias augias*	Pale Palm Dart	Not Listed	Not Assessed	Moderately common	Yes	No
28	Hesperiidae	*Telicota besta bina*	Besta Palm Dart	Not Listed	Not Assessed	Moderately common	Yes	No
29	Lycaenidae	*Acytolepis puspa lambi*	Common Hedge Blue	Not Listed	Not Assessed	Moderately common	Yes	No
30	Lycaenidae	*Allotinus unicolor unicolor*	Lesser Darkwing	Not Listed	Not Assessed	Moderately common	Yes	No
31	Lycaenidae	*Anthene emolus goberus*	Ciliate Blue	Not Listed	Not Assessed	Common	Yes	Yes
32	Lycaenidae	*Anthene lycaenina miya*	Pointed Ciliate Blue	Not Listed	Not Assessed	Moderately rare	Yes	Yes
33	Lycaenidae	*Arhopala amphimuta amphimuta*	-	Nationally Extinct	Not Assessed	Moderately common	Yes	No
34	Lycaenidae	*Arhopala centaurus nakula*	Centaur Oakblue	Not Listed	Not Assessed	Moderately common	Yes	No
35	Lycaenidae	*Arhopala major major*	-	Data Deficient	Not Assessed	Common	Yes	Yes
36	Lycaenidae	*Catochrysops strabo strabo*	Forget-Me-Not	Not Listed	Not Assessed	Moderately rare	Yes	Yes
37	Lycaenidae	*Catopyrops ancyra*	Ancyra Blue	Vulnerable	Not Assessed	Moderately rare	Yes	Yes
38	Lycaenidae	*Chilades pandava pandava*	Cycad Blue	Not Listed	Not Assessed	Common	Yes	No
39	Lycaenidae	*Curetis santana malayica*	Malayan Sunbeam	Not Listed	Not Assessed	Moderately common	Yes	No
40	Lycaenidae	*Curetis saronis sumatrana*	Sumatran Sunbeam	Not Listed	Not Assessed	Moderately common	Yes	No
41	Lycaenidae	*Eooxylides tharis distanti*	Branded Imperial	Not Listed	Not Assessed	Common	Yes	No
42	Lycaenidae	*Euchrysops cnejus cnejus*	Gram Blue	Not Listed	Not Assessed	Moderately common	Yes	No
43	Lycaenidae	*Everes lacturnus rileyi*	Indian Cupid	Not Listed	Not Assessed	Rare	Yes	No
44	Lycaenidae	*Flos apidanus saturatus*	Plain Plushblue	Not Listed	Not Assessed	Moderately common	Yes	No
45	Lycaenidae	*Hypolycaena erylus teatus*	Common Tit	Not Listed	Not Assessed	Common	Yes	Yes
46	Lycaenidae	*Hypolycaena thecloides thecloides*	Dark Tit	Not Listed	Not Assessed	Moderately rare	Yes	No
47	Lycaenidae	*Ionolyce helicon merguiana*	Pointed Line Blue	Not Listed	Not Assessed	Common	Yes	No
48	Lycaenidae	*Iraota rochana boswelliana*	Scarce Silverstreak	Not Listed	Not Assessed	Moderately common	Yes	No
49	Lycaenidae	*Jamides bochus nabonassar*	Dark Caerulean	Not Listed	Not Assessed	Moderately rare	Yes	No
50	Lycaenidae	*Jamides celeno aelianus*	Common Caerulean	Not Listed	Not Assessed	Common	Yes	No
51	Lycaenidae	*Lampides boeticus*	Pea Blue	Not Listed	Not Assessed	Common	Yes	No
52	Lycaenidae	*Logania marmorata damis*	Pale Mottle	Not Listed	Not Assessed	Moderately common	Yes	No
53	Lycaenidae	*Loxura atymnus fuconius*	Yamfly	Not Listed	Not Assessed	Moderately common	Yes	No
54	Lycaenidae	*Megisba malaya sikkima*	Malayan	Not Listed	Not Assessed	Moderately rare	Yes	Yes
55	Lycaenidae	*Miletus biggsii biggsii*	Bigg's Brownwing	Not Listed	Not Assessed	Moderately common	Yes	No
56	Lycaenidae	*Miletus symethus petronius*	Blue Brownwing/Great Brownie	Not Listed	Not Assessed	Moderately common	Yes	No
57	Lycaenidae	*Nacaduba berenice icena*	Rounded Sixline Blue	Not Listed	Not Assessed	Common	Yes	No
58	Lycaenidae	*Nacaduba beroe neon*	Opaque Sixline Blue	Not Listed	Not Assessed	Common	Yes	No
59	Lycaenidae	*Nacaduba kurava nemana*	Transparent Sixline Blue	Nationally Extinct	Not Assessed	Moderately common	Yes	No
60	Lycaenidae	*Nacaduba pavana singapura*	Singapore Fourline Blue	Not Listed	Not Assessed	Moderately rare	Yes	No
61	Lycaenidae	*Petrelaea dana*	Dingy Line Blue	Not Listed	Not Assessed	Moderately rare	Yes	No
62	Lycaenidae	*Prosotas dubiosa lumpura*	Tailless Line Blue	Not Listed	Not Assessed	Common	Yes	Yes
63	Lycaenidae	*Prosotas nora superdates*	Common Line Blue	Not Listed	Not Assessed	Moderately common	Yes	No
64	Lycaenidae	*Rapala dieneces dieneces*	Scarlet Flash	Not Listed	Not Assessed	Moderately rare	Yes	No
65	Lycaenidae	*Rapala iarbus iarbus*	Common Red Flash	Not Listed	Not Assessed	Moderately common	Yes	Yes
66	Lycaenidae	*Rapala manea chozeba*	Slate Flash	Not Listed	Not Assessed	Moderately rare	Yes	Yes
67	Lycaenidae	*Rapala pheretima sequeira*	Copper Flash	Not Listed	Not Assessed	Moderately common	Yes	No
68	Lycaenidae	*Rapala suffusa barthema*	Suffused Flash	Not Listed	Not Assessed	Moderately common	Yes	No
69	Lycaenidae	*Spalgis epius epius*	Apefly	Not Listed	Not Assessed	Moderately common	Yes	No
70	Lycaenidae	*Spindasis lohita senama*	Long Banded Silverline	Not Listed	Not Assessed	Moderately common	Yes	No
71	Lycaenidae	*Spindasis syama terana*	Club Silverline	Not Listed	Not Assessed	Moderately common	Yes	No
72	Lycaenidae	*Surendra vivarna amisena*	Acacia Blue	Not Listed	Not Assessed	Moderately common	Yes	No
73	Lycaenidae	*Tajuria cippus maxentius*	Peacock Royal	Not Listed	Not Assessed	Moderately common	Yes	No
74	Lycaenidae	*Virachola kessuma deliochus*	Pitcher Blue	Not Listed	Not Assessed	Rare	Yes	No
75	Lycaenidae	*Zeltus amasa maximinianus*	Fluffy Tit	Not Listed	Not Assessed	Moderately common	Yes	No
76	Lycaenidae	*Zizeeria maha serica*	Pale Grass Blue	Not Listed	Not Assessed	Common	Yes	No
77	Lycaenidae	*Zizina otis lampa*	Lesser Grass Blue	Not Listed	Not Assessed	Common	Yes	Yes
78	Lycaenidae	*Zizula hylax pygmaea*	Pygmy Grass Blue	Not Listed	Not Assessed	Common	Yes	Yes

79	Nymphalidae	*Acraea terpsicore*	Tawny Coster	Not Assessed	Not Assessed	Common	Yes	No
80	Nymphalidae	*Amathusia phidippus phidippus*	Palm King	Not Listed	Not Assessed	Moderately rare	Yes	Yes
81	Nymphalidae	*Athyma nefte subrata*	Colour Sergeant	Not Listed	Not Assessed	Common	Yes	No
82	Nymphalidae	*Cethosia cyane*	Leopard Lacewing	Not Assessed	Not Assessed	Common	Yes	No
83	Nymphalidae	*Cupha erymanthis lotis*	Rustic	Not Listed	Not Assessed	Moderately common	Yes	No
84	Nymphalidae	*Danaus chrysippus chrysippus*	Plain Tiger	Not Listed	Not Assessed	Common	Yes	No
85	Nymphalidae	*Danaus genutia genutia*	Common Tiger	Not Listed	Not Assessed	Moderately common	Yes	No
86	Nymphalidae	*Doleschallia bisaltide bisaltide*	Autumn Leaf	Not Assessed	Not Assessed	Common	Yes	No
87	Nymphalidae	*Elymnias hypermnestra agina*	Common Palmfly	Not Listed	Not Assessed	Common	Yes	Yes
88	Nymphalidae	*Elymnias panthera panthera*	Tawny Palmfly	Not Listed	Not Assessed	Moderately common	Yes	Yes
89	Nymphalidae	*Euploea midamus singapura*	Blue Spotted Crow	Not Listed	Not Assessed	Moderately common	Yes	No
90	Nymphalidae	*Euploea mulciber mulciber*	Striped Blue Crow	Not Listed	Not Assessed	Common	Yes	No
91	Nymphalidae	*Euploea phaenareta castelnaui*	King Crow	Not Listed	Not Assessed	Moderately rare	Yes	No
92	Nymphalidae	*Euthalia aconthea gurda*	Baron	Not Listed	Not Assessed	Common	Yes	Yes
93	Nymphalidae	*Euthalia adonia pinwilli*	Green Baron	Not Listed	Not Assessed	Moderately common	Yes	No
94	Nymphalidae	*Euthalia monina monina*	Malay Baron	Not Listed	Not Assessed	Common	Yes	No
95	Nymphalidae	*Faunis canens arcesilas*	Common Faun	Not Listed	Not Assessed	Common	Yes	Yes
96	Nymphalidae	*Hypolimnas anomala anomala*	Malayan Eggfly	Not Listed	Not Assessed	Common	Yes	Yes
97	Nymphalidae	*Hypolimnas bolina bolina*	Great Eggfly	Not Listed	Not Assessed	Moderately common	Yes	No
98	Nymphalidae	*Hypolimnas bolina jacintha*	Jacintha Eggfly	Not Listed	Not Assessed	Common	Yes	No
99	Nymphalidae	*Ideopsis vulgaris macrina*	Blue Glassy Tiger	Not Listed	Not Assessed	Common	Yes	Yes
100	Nymphalidae	*Junonia almana javana*	Peacock Pansy	Not Listed	Least Concern	Common	Yes	Yes
101	Nymphalidae	*Junonia atlites atlites*	Grey Pansy	Not Listed	Not Assessed	Moderately common	Yes	No
102	Nymphalidae	*Junonia hedonia ida*	Chocolate Pansy	Not Listed	Not Assessed	Common	Yes	Yes
103	Nymphalidae	*Junonia orithya wallacei*	Blue Pansy	Not Listed	Not Assessed	Common	Yes	No
104	Nymphalidae	*Lasippa tiga siaka*	Malayan Lascar	Not Listed	Not Assessed	Common	Yes	No
105	Nymphalidae	*Lebadea martha malayana*	Knight	Not Listed	Not Assessed	Rare	Yes	No
106	Nymphalidae	*Lebadea martha parkeri*	Knight	Not Listed	Not Assessed	Moderately common	Yes	No
107	Nymphalidae	*Melanitis leda leda*	Common Evening Brown	Not Listed	Not Assessed	Moderately rare	Yes	No
108	Nymphalidae	*Moduza procris milonia*	Commander	Not Listed	Not Assessed	Moderately common	Yes	No
109	Nymphalidae	*Mycalesis mineus macromalayana*	Dark Brand Bush Brown	Not Listed	Not Assessed	Common	Yes	Yes
110	Nymphalidae	*Mycalesis perseoides perseoides*	Burmese Bush Brown	Data Deficient	Not Assessed	Common	Yes	Yes
111	Nymphalidae	*Mycalesis perseus cepheus*	Dingy Bush Brown	Not Listed	Not Assessed	Moderately common	Yes	Yes
112	Nymphalidae	*Mycalesis visala phamis*	Long Brand Bush Brown	Not Listed	Not Assessed	Moderately common	Yes	Yes
113	Nymphalidae	*Neptis hylas papaja*	Common Sailor	Not Listed	Not Assessed	Moderately common	Yes	No
114	Nymphalidae	*Neptis leucoporos cresina*	Burmese Sailor	Not Listed	Not Assessed	Common	Yes	No
115	Nymphalidae	*Orsotriaena medus cinerea*	Dark Grass Brown	Not Listed	Not Assessed	Common	Yes	Yes
116	Nymphalidae	*Pantoporia hordonia hordonia*	Common Lascar	Not Listed	Not Assessed	Common	Yes	No
117	Nymphalidae	*Pantoporia paraka paraka*	Perak Lascar	Not Listed	Not Assessed	Moderately common	Yes	No
118	Nymphalidae	*Parantica agleoides agleoides*	Dark Glassy Tiger	Not Listed	Not Assessed	Common	Yes	No
119	Nymphalidae	*Phaedyma columella singa*	Short Banded Sailor	Not Listed	Not Assessed	Common	Yes	Yes
120	Nymphalidae	*Phalanta phalantha phalantha*	Leopard	Not Listed	Not Assessed	Common	Yes	Yes
121	Nymphalidae	*Polyura hebe plautus*	Plain Nawab	Not Listed	Not Assessed	Common	Yes	No
122	Nymphalidae	*Polyura schreiber tisamenus*	Blue Nawab	Not Listed	Not Assessed	Moderately rare	Yes	No
123	Nymphalidae	*Symbrenthia hippoclus selangorana*	Malayan Jester	Not Assessed	Not Assessed	Very rare (seasonal migrant)	No	Yes
124	Nymphalidae	*Tanaecia iapis puseda*	Horsfield's Baron	Not Listed	Not Assessed	Common	Yes	No
125	Nymphalidae	*Tanaecia pelea pelea*	Malay Viscount	Not Listed	Not Assessed	Common	Yes	Yes
126	Nymphalidae	*Ypthima baldus newboldi*	Common Five-Ring	Not Listed	Not Assessed	Common	Yes	No
127	Nymphalidae	*Ypthima horsfieldii humei*	Malayan Five-Ring	Not Listed	Not Assessed	Common	Yes	No
128	Nymphalidae	*Ypthima pandocus corticaria*	Common Three-Ring	Not Listed	Not Assessed	Common	Yes	No
129	Papilionidae	*Troides helena cerberus*	Common Birdwing	Vulnerable	Not assessed; CITES protected (Appendix II)	Moderately common	Yes	Yes
130	Papilionidae	*Chilasa clytia clytia*	Common Mime	Not Listed	Not Assessed	Common	Yes	No
131	Papilionidae	*Graphium agamemnon agamemnon*	Tailed Jay	Not Listed	Not Assessed	Common	Yes	No
132	Papilionidae	*Graphium evemon eventus*	Lesser Jay (Blue Jay)	Not Listed	Not Assessed	Common	Yes	No
133	Papilionidae	*Graphium sarpedon luctatius*	Common Bluebottle	Not Listed	Not Assessed	Common	Yes	Yes
	Papilionidae	*Graphium sp.*	Jay sp.					Yes
134	Papilionidae	*Papilio demoleus malayanus*	Lime Butterfly	Not Listed	Not Assessed	Common	Yes	No
135	Papilionidae	*Papilio polytes romulus*	Common Mormon	Not Listed	Not Assessed	Common	Yes	Yes
136	Pieridae	*Appias libythea olferna*	Striped Albatross	Not Listed	Not Assessed	Common	Yes	Yes
137	Pieridae	*Catopsilia pomona pomona*	Lemon Emigrant	Not Listed	Not Assessed	Common	Yes	Yes
138	Pieridae	*Catopsilia pyranthe pyranthe*	Mottled Emigrant	Not Listed	Not Assessed	Common	Yes	No
139	Pieridae	*Catopsilia scylla cornelia*	Orange Emigrant	Not Listed	Not Assessed	Common	Yes	No
140	Pieridae	*Delias hyparete metarete*	Painted Jezebel	Not Listed	Not Assessed	Common	Yes	Yes
141	Pieridae	*Eurema andersonii andersonii*	Anderson's Grass Yellow	Not Listed	Not Assessed	Moderately common	Yes	No
142	Pieridae	*Eurema blanda snelleni*	Three Spot Grass Yellow	Not Listed	Not Assessed	Comon	Yes	Yes
143	Pieridae	*Eurema hecabe contubernalis*	Common Grass Yellow	Not Listed	Not Assessed	Common	Yes	Yes
144	Pieridae	*Leptosia nina malayana*	Psyche	Not Listed	Not Assessed	Common	Yes	Yes
145	Pieridae	*Pieris canidia canidia*	Cabbage White	Not Listed	Not Assessed	Moderately rare	Yes	No
146	Riodinidae	*Abisara saturata kausambioides*	Malayan Plum Judy	Not Listed	Not Assessed	Moderately common	No	Yes

DECAPOD CRUSTACEANS ETC.

No	Family	Scientific name	Common Name	Local Status (SRDB)	Global Status (IUCN)	Residence (IUCN, Nparks Flora & Fauna Web, Sealifebase, The Biodiversity of Singapore, A Guide to Mangroves of Singapore)	Probable?	Recorded?
1	Alpheidae	*Alpheus euphrosyne*	N/A	Not Listed	Not Assessed	N/A	Yes	No
2	Alpheidae	*Alpheus microrhynchus*	N/A	Endangered	Not Assessed	N/A	Yes	No
3	Alpheidae	Potamalpheops johnsoni	N/A	Vulnerable	Not Assessed	N/A	Yes	No
4	Alpheidae	Potamalpheops tigger	N/A	Vulnerable	Not Assessed	N/A	Yes	No
5	Atyidae	*Caridina sp.**	N/A	Not Listed	Not Assessed	N/A	Yes	No
6	Camptandriinae	*Baruna trigranulum*	N/A	Not Listed	Not Assessed	N/A	Yes	No
7	Camptandriinae	*Ilyogynis microcheirum*	N/A	Not Listed	Not Assessed	N/A	Yes	No
8	Camptandriinae	*Paracleistostoma depressum*	N/A	Not Listed	Not Assessed	Native	Yes	No
9	Camptandriinae	Paracleistostoma longimanum	N/A	Not Listed	Not Assessed	Native	Yes	No
10	Camptandriinae	Paracleistostoma wardi	N/A	Not Listed	Not Assessed	Native	Yes	No
11	Dotillinae	Ilyoplax delsmani	N/A	Vulnerable	Not Assessed	Native	Yes	No
12	Dotillinae	*Ilyoplax obliqua*	N/A	Not Listed	Not Assessed	N/A	Yes	No
13	Grapsidae	*Metopograpsus frontalis*	N/A	Not Listed	Not Assessed	N/A	Yes	No
14	Grapsidae	*Metopograpsus gracilipes*	N/A	Not Listed	Not Assessed	N/A	Yes	No
15	Grapsidae	*Metopograpsus latifrons*	N/A	Not Listed	Not Assessed	N/A	Yes	No
16	Grapsidae	*Varuna yui*	N/A	Not Listed	Not Assessed	N/A	Yes	No
17	Limulidae	*Carcinoscorpius rotundicauda*	N/A	Vulnerable	Data Deficient	Native	Yes	No
18	Limulidae	*Tachypleus gigas*	N/A	Endangered	Data Deficient	Native	Yes	No
19	Menippidae	*Myomenippe hardwicki*	Thunder Crab	Not Listed	Not Assessed	N/A	Yes	Yes
20	Ocypodidae	*Uca sp.**	*N/A*	Not Listed	Not Assessed	N/A	Yes	No
21	Oziidae	*Epixanthus dentatus*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
22	Palaemonidae	Palaemon sp.*	N/A	Not Listed	Not Assessed	N/A	Yes	No
23	Palamonidae	*Macrobrachium equidens*	N/A	Not Listed	Least Concern	Native	Yes	No
24	Penaeidae	*Metapenaeus sp.**	N/A	Not Listed	Not Assessed	N/A	Yes	No
25	Penaeidae	*Penaeus sp.**	N/A	Not Listed	Not Assessed	N/A	Yes	No
26	Portunidae	*Scylla olivacea*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
27	Sesarmidae	*Episesarma chengtongense*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
28	Sesarmidae	*Episesarma mederi*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
29	Sesarmidae	*Episesarma palawanense*	N/A	Not Listed	Not Assessed	N/A	Yes	No
30	Sesarmidae	*Episesarma singaporense*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
31	Sesarmidae	*Episesarma versicolor*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
32	Sesarmidae	*Perisesarma eumolpe*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
33	Sesarmidae	*Perisesarma fasciatus*	N/A	Not Listed	Not Assessed	N/A	Yes	No
34	Sesarmidae	*Perisesarma indiarum*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
35	Sesarmidae	*Sarmatium germaini*	N/A	Not Listed	Not Assessed	N/A	Yes	No
36	Sesarmidae	*Selatium brockii*	N/A	Not Listed	Not Assessed	Native	Yes	Yes
37	Sesarmidae	*Nanosesarma batavicum*	N/A	Not Listed	Not Assessed	N/A	Yes	No
38	Thalassinidae	*Thalassina sp.**	N/A	Endangered	Not Assessed	Native	Yes	No
39	Upogebiidae	*Wolffogebia phuketensis*	N/A	Endangered	Not Assessed	Native	Yes	No
40	Varunidae	*Metaplax elegans*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
41	Varunidae	*Metaplax sp**	N/A	Not Listed	Not Assessed	N/A	Yes	No

FISHES

No	Family	Scientific name	Common Name	Local Status (SRDB)	Global Status (IUCN)	Native status (IUCN, Nparks Flora & Fauna Web, Sealifebase, The Biodiversity of Singapore, A Guide to Mangroves of Singapore)	Probable?	Recorded?
1	Adrianichthyidae	*Oryzias javanicus*	Javanese Ricefish	Not Listed	Not Assessed	Native	Yes	Yes
2	Ambassidae	*Ambassis kopsii*	Kops' Glass Perchlet	Not Listed	Not Assessed	N/A	Yes	Yes
3	Ambassidae	*Ambassis vachellii*	Vachell's Glassfish	Not Listed	Least Concern	Native	Yes	No
4	Aplocheilidae	*Aplocheilus armatus*	Whitespot	Least Concern	Least Concern	Native	Yes	Yes
5	Aplocheilidae	*Aplocheilus lineatus*	Striped Panchax	Least Concern	Least Concern	Non-native	Yes	No
6	Apogonidae	*Yarica hyalosoma*	Mangrove Cardinalfish	Not Listed	Least Concern	Native	Yes	Yes
7	Bagridae	*Mystus gulio*	Estuarine Catfish	Least Concern	Least Concern	Native	Yes	No
8	Belonidae	*Strongylura stongylura*	Spot-tail Needlefish	Not Listed	Not Assessed	N/A	Yes	No
9	Cichlidae	*Etroplus suratensis*	Green Chromide	Not Listed	Least Concern	Non-native	Yes	Yes
10	Cichlidae	*Mayaheros urophthalmus*	Mayan Cichlid	Least Concern	Not Assessed	N/A	Yes	Yes
11	Cichlidae	*Oreochromis mossambicus*	Moxambique Tilapia	Least Concern	Near Threatened	Non-native	Yes	No
12	Eleotridae	Butis butis	Crimson-tipped Gudgeon	Not Listed	Least Concern	N/A	Yes	Yes
13	Eleotridae	Butis humeralis	Flathead Gudgeon	Not Listed	Not Assessed	N/A	Yes	Yes
14	Eleotridae	Butis koilomatodon	Crested Gudgeon	Not Listed	Not Assessed	N/A	Yes	No
15	Eleotridae	*Ophiocara porocephala*	Snakehead Gudgeon	Not Listed	Least Concern	N/A	Yes	No
16	Gobiidae	*Acentrogobius gracilis*	Slender Amoya	Not Listed	Not Assessed	N/A	Yes	No
17	Gobiidae	*Acentrogobius janthinopterus*	Robust Mangrove Goby	Not Listed	Not Assessed	N/A	Yes	No
18	Gobiidae	*Acentrogobius viridipunctatus*	Papillose Goby	Not Listed	Not Assessed	N/A	Yes	No
19	Gobiidae	*Amoya moloanus*	Barcheek Goby	Not Listed	Least Concern	Non-native	Yes	Yes
20	Gobiidae	*Brachygobius kabiliensis*	Bumblebee Goby	Not Listed	Not Assessed	Native	Yes	Yes
21	Gobiidae	*Calamiana illota*	Dirty-face Brackish Goby	Not Listed	Least Concern	N/A	Yes	Yes**
22	Gobiidae	*Eugnathogobius illotus*	-	Not Listed	Least Concern	Native	Yes	No
23	Gobiidae	*Eugnathogobius variegatus*	Stripe-face Brackish Goby	Not Listed	Least Concern	N/A	Yes	No
24	Gobiidae	*Glossogobius circumspectus*	Circumspect Flat-head Goby	Not Listed	Not Assessed	N/A	Yes	Yes
25	Gobiidae	*Glossogobius circumspectus*	Circumspect Flat-head Goby	Not Listed	Not Assessed	N/A	Yes	No
26	Gobiidae	*Hemigobius hoevenii*	Banded Mullet-goby	Not Listed	Not Assessed	N/A	Yes	No
27	Gobiidae	*Hemigobius mingi*	Blue-eyed Mullet-goby	Not Listed	Not Assessed	N/A	Yes	No
28	Gobiidae	*Mugilogobius fasciatus*	Broad-barred Mangrove Goby	Not Listed	Data Deficient	N/A	Yes	No
29	Gobiidae	*Mugilogobius tigrinus*	Narrow-barred Mangrove Goby	Not Listed	Not Assessed	N/A	Yes	No
30	Gobiidae	*Periophthalmus chrysospilos*	Gold-spotted Mudskipper	Not Listed	Not Assessed	Native	Yes	Yes
31	Gobiidae	*Periophthalmus schlosseri*	Giant Mudskipper	Not Listed	Not Assessed	N/A	Yes	Yes
32	Gobiidae	*Periophthalmus walailakae*	Yellow-spotted Mudskipper	Not Listed	Not Assessed	N/A	Yes	Yes
33	Gobiidae	*Pseudogobius avicennia*	Avicennia Fat-nose Goby	Not Listed	Not Assessed	N/A	Yes	No
34	Gobiidae	*Pseudogobius isognathus*	Mangrove Bigmouth Goby	Not Listed	Least Concern	N/A	Yes	Yes
35	Gobiidae	*Pseudogobius javanicus*	Java Fat-nose Goby	Not Listed	Not Assessed	N/A	Yes	No
36	Gobiidae	*Stigmatogobius sadanundio*	Grey Knight Goby	Not Listed	Not Assessed	Native	Yes	Yes
37	Mugilidae	-	Mullet Sp.*	Not Listed	Not Assessed	N/A	Yes	No
38	Muraenidae	*Gymnothorax tile*	Estuarine Moray	Not Listed	Not Assessed	N/A	No	Yes
39	Phallostethidae	*Neostethus lankesteri*	One-horned Priapus Fish	Not Listed	Not Assessed	Native	Yes	Yes
40	Poeciliidae	*Gambusia affinis*	Mosquitofish	Not Listed	Least Concern	Non-native	Yes	Yes
41	Poeciliidae	*Poecilia reticulata*	Guppy	Least Concern	Not Assessed	Non-native	Yes	Yes
42	Poeciliidae	*Poecilia sphenops*	Common Molly	Not Listed	Not Assessed	Non-native	Yes	Yes
43	Scatophagidae	*Scatophagus argus*	Spotted Scad	Not Listed	Least Concern	Native	Yes	No
44	Syngnathidae	*Ichthyocampus carce*	*Mangrove Pipefish*	Not Listed	Least Concern	N/A	Yes	No
45	Tetraodontidae	*Dichotomyctere nigroviridis*	Spotted Green Puffer	Not Listed	Not Assessed	Native	Yes	Yes
46	Toxotidae	*Toxotes chatareus*	Spotted Archerfish	Not Listed	Not Assessed	N/A	Yes	No
47	Toxotidae	*Toxotes jaculatrix*	Banded Archerfish	Not Listed	Least Concern	Native	Yes	Yes
48	Zenarchopteridae	*Dermogenys collettei*	Malayan Pygmy Halfbeak	Not Listed	Not Assessed	Native	Yes	Yes

49	Zenarchopteridae	*dermogenys pusilla*	Wrestking halfbeak	Not Listed	Not Assessed	N/A	Yes	No
50	Zenarchopteridae	*Zenarchopterus buffonis*	Striped-nose Halfbeak	Not Listed	Not Assessed	N/A	Yes	No

HERPETOFAUNA

No.	Amphibian/ Reptile	Family	Scientific name	Common name	Local status (SRDB)	Global status (IUCN/CITES)	Abundance/Rarity (Baker & Lim, 2008)	Native status	Probable?	Recorded?
1	Amphibian	Bufonidae	*Duttaphrynus melanostictus*	Asian Toad	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
2	Amphibian	Dicroglossidae	*Fejervarya cancrivorus*	Crab-eating Frog	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
3	Amphibian	Dicroglossidae	*Fejervarya limnocharis*	Field Frog	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
4	Amphibian	Dicroglossidae	*Limnonectes blythii*	Malayan Giant Frog	Not Assessed	Near Threatened	Widespread & Common	Native	Yes	Yes
5	Amphibian	Eleutherodactylidae	*Eleutherodactylus planirostris*	Greenhouse Frog	Not Assessed	Least Concern	-	Non-native	No	Yes
6	Amphibian	Microhylidae	*Kaloula pulchra*	Banded Bull Frog	Not Assessed	Least Concern	Widespread & Common	Non-native	Yes	Yes
7	Amphibian	Microhylidae	*Microhyla butleri*	Painted Chorus Frog	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
8	Amphibian	Microhylidae	*Microhyla fissipes*	East Asian Ornate Chorus Frog	Not Assessed	Least Concern	Restricted & Rare	Non-native	Yes	No
9	Amphibian	Microhylidae	*Microhyla heymonsi*	Dark-sided Chorus Frog	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
10	Amphibian	Ranidae	*Chalcorana labialis*	Copper-cheeked Frog	Not Assessed	Least Concern	Restricted but Common	Native	Yes	Yes
11	Amphibian	Ranidae	*Hylarana erythraea*	Green Paddy Frog	Not Assessed	Least Concern	Widespread & Common	Native	Yes	No
12	Amphibian	Ranidae	*Lithobates catesbeianus*	American Bullfrog	Not Assessed	Least Concern	Widespread & Common	Non-native	Yes	No
13	Amphibian	Ranidae	*Sylvirana guentheri*	Guenther's Frog	Not Assessed	Least Concern	Widespread but Uncommon	Non-native	Yes	No
14	Amphibian	Rhacophoridae	*Polypedates leucomystax*	Four-lined Tree Frog	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
15	Reptile	Acrochordidae	*Acrochordus granulatus*	Banded File Snake	Not Assessed	Least Concern	Widespread & Common	Native	Yes	No
16	Reptile	Agamidae	*Bronchocela cristatella*	Green Crested Lizard	Not Assessed	Not Assessed	Widespread but Uncommon	Native	Yes	Yes
17	Reptile	Agamidae	*Calotes versicolor*	Changeable Lizard	Not Assessed	Not Assessed	Widespread & Common	Non-native	Yes	Yes
18	Reptile	Agamidae	*Draco sumatranus*	Sumatran Flying Dragon	Not Assessed	Not Assessed	Widespread & Common	Native	Yes	No
19	Reptile	Colubridae	*Ahaetulla prasina*	Oriental Whip Snake	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
20	Reptile	Colubridae	*Boiga dendrophila*	Gold-ringed Cat Snake	Vulnerable	Least Concern	Widespread but Rare	Native	Yes	No
21	Reptile	Colubridae	*Chrysopelea paradisi*	Paradise Gliding Snake	Not Assessed	Least Concern	Widespread & Common	Native	Yes	No
22	Reptile	Colubridae	*Coelognathus flavolineatus*	Common Malayan Racer	Endangered	Least Concern	Widespread but Rare	Native	Yes	No
23	Reptile	Colubridae	*Dendrelaphis caudolineatus*	Striped Bronzeback	Not Assessed	Least Concern	Widespread & Common	Native	Yes	No
24	Reptile	Colubridae	*Dendrelaphis pictus*	Painted Bronzeback	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
25	Reptile	Colubridae	*Lycodon capucinus*	House Wolf Snake	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
26	Reptile	Colubridae	*Oligodon octolineatus*	Striped Kukri Snake	Not Assessed	Least Concern	Widespread & Common	Native	Yes	No
27	Reptile	Colubridae	*Pseudorabdion longiceps*	Dwarf Reed Snake	Endangered	Least Concern	Widespread but Rare	Native	Yes	No
28	Reptile	Colubridae	*Ptyas korros*	Indochinese Rat Snake	Not Assessed	Least Concern	Widespread but Uncommon	Native	Yes	No
29	Reptile	Colubridae	*Xenochrophis vittatus*	Striped Keelback	Not Assessed	Least Concern	Widespread & Common	Non-native	Yes	No
30	Reptile	Cylindrophiidae	*Cylindrophis ruffus*	Red-tailed Pipe Snake	Critically Endangered	Least Concern	Widespread but Rare	Native	Yes	No
31	Reptile	Elapidae	*Calliophis intestinalis*	Banded Malayan Coral Snake	Not Assessed	Least Concern	Widespread but Rare	Native	Yes	No
32	Reptile	Elapidae	*Naja sumatrana*	Equatorial Spitting Cobra	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
33	Reptile	Emydidae	*Trachemys scripta*	Red-eared Slider	Not Assessed	Least Concern	Widespread & Common	Non-native	Yes	Yes
34	Reptile	Gekkonidae	*Cyrtodactylus majulah*	Singapore Bent-toed Gecko	Vulnerable	Not Assessed	Restricted & Rare	Native	Yes	Yes
35	Reptile	Gekkonidae	*Gehyra mutilata*	Four-clawed Gecko	Not Assessed	Not Assessed	Widespread & Common	Native	Yes	No
36	Reptile	Gekkonidae	*Gekko monarchus*	Spotted House Gecko	Not Assessed	Not Assessed	Widespread & Common	Native	Yes	Yes
37	Reptile	Gekkonidae	*Hemidactylus brookii*	Brooke's House Gecko	Not Assessed	Not Assessed	Restricted & Rare	Non-native	Yes	No
38	Reptile	Gekkonidae	*Hemidactylus frenatus*	Spiny-tailed House Gecko	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
39	Reptile	Gekkonidae	*Hemidactylus platyurus*	Flat-tailed Gecko	Not Assessed	Not Assessed	Widespread & Common	Native	Yes	No
40	Reptile	Gekkonidae	*Lepidodactylus lugubris*	Mourning Gecko	Not Assessed	Not Assessed	Widespread but Rare	Native	Yes	No
41	Reptile	Geomydidae	*Cuora amboinensis*	Malayan Box Terrapin	Not Assessed	Vulnerable	Restricted but Common	Native	Yes	Yes
42	Reptile	Geomydidae	*Heosemys grandis*	Giant Asian Pond Turtle	Not Assessed	Vulnerable	-	Non-native	Yes	No
43	Reptile	Geomydidae	*Siebenrockiella crassicollis*	Black Marsh Terrapin	Not Assessed	Vulnerable	Widespread & Common	Native	Yes	No
44	Reptile	Homalopsidae	*Cantoria violacea*	Cantor's Water Snake	Critically Endangered	Least Concern	Widespread but Rare	Native	Yes	No
45	Reptile	Homalopsidae	*Cerberus schneiderii*	Sunda Dog-faced Water Snake	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
46	Reptile	Homalopsidae	*Enhydris enhydris*	Rainbow Water Snake	Not Assessed	Least Concern	Restricted & Uncommon	Non-native	Yes	No
47	Reptile	Homalopsidae	*Fordonia leucobalia*	Crab-eating Water Snake	Endangered	Least Concern	Widespread but Rare	Native	Yes	No
48	Reptile	Homalopsidae	*Gerarda prevostiana*	Yellow-lipped Water Snake	Endangered	Least Concern	Widespread but Rare	Native	Yes	No
49	Reptile	Homalopsidae	*Homalopsis buccata*	Puff-faced Water Snake	Vulnerable	Least Concern	Widespread but Uncommon	Native	Yes	No
50	Reptile	Pareidae	*Pareas margaritophorus*	White-spotted Slug Snake	Not Assessed	Least Concern	Widespread & Common	Non-native	Yes	No
51	Reptile	Pythonidae	*Malayopython reticulatus*	Reticulated Python	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
52	Reptile	Scincidae	*Emoia atrocostata*	Mangrove Skink	Endangered	Not Assessed	Restricted & Rare	Native	Yes	No
53	Reptile	Scincidae	*Eutropis multifasciata*	Many-lined Sun Skink	Not Assessed	Not Assessed	Widespread & Common	Native	Yes	Yes
54	Reptile	Scincidae	*Lygosoma bowringii*	Garden Supple Skink	Not Assessed	Not Assessed	Widespread & Common	Native	Yes	No
55	Reptile	Typhlopidae	*Indotyphlops braminus*	Brahminy Blind Snake	Not Assessed	Least Concern	Widespread & Common	Native	Yes	No
56	Reptile	Varanidae	*Varanus salvator*	Malayan Water Monitor	Not Assessed	Least Concern	Widespread & Common	Native	Yes	Yes
57	Reptile	Viperidae	*Trimeresurus purpureomaculatus*	Shore Pit Viper	Endangered	Least Concern	Restricted & Rare	Native	Yes	No

58	Reptile	Xenopeltidae	*Xenopeltis unicolor*	Iridescent Earth Snake	Not Assessed	Least Concern	Widespread but Uncommon	Native	Yes	No

MAMMALS

No.	Non-volant/Bats	Family	Scientific name	Common name	Distribution/Rarity (Baker & Lim, 2008)	Local status (SRDB)	Global status (IUCN/CITES)	Native Status (Baker & Lim, 2008)	Probable?	Recorded?
1	Bat	Emballonuridae	*Saccolaimus saccolaimus*	Pouch-bearing Bat	Widespread & Common	Not Listed	Least Concern	Native	Yes	No
2	Bat	Emballonuridae	*Taphozous melanopogon*	Black-bearded Tomb Bat	Widespread but Rare	Endangered	Least Concern	Native	Yes	No
3	Bat	Pteropodidae	*Cynopterus brachyotis*	Lesser Dog-faced Fruit Bat	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
4	Bat	Pteropodidae	*Eonycteris spelaea*	Cave Nectar Bat	Widespread but Uncommon	Not Listed	Least Concern	Native	Yes	No
5	Bat	Vespertilionidae	*Myotis 'adversus'*	Grey Large-footed Myotis	Widespread & Common	Not Listed	Least Concern	Native	Yes	No
6	Bat	Vespertilionidae	*Myotis muricola*	Whiskered Myotis	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
7	Bat	Vespertilionidae	*Scotophilus kuhlii*	Asiatic Lesser Yellow House Bat	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
8	Non-volant	Canidae	Canis lupus	Feral Dog	Widespread & Common	Not Listed	Least Concern	Introduced	Yes	Yes
9	Non-volant	Cercopithecidae	*Macaca fascicularis*	Long-tailed Macaque	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
10	Non-volant	Muridae	*Mus musculus (Mus castaneus)*	House Mouse	Widespread & Common	Not Listed	Least Concern	Native	Yes	No
11	Non-volant	Muridae	*Rattus exulans*	Polynesian Rat	Widespread but Uncommon	Not Listed	Least Concern	Native	Yes	No
12	Non-volant	Muridae	*Rattus norvegicus*	Brown Rat	Widespread & Common	Not Listed	Least Concern	Introduced	Yes	No
13	Non-volant	Muridae	*Rattus tanezumi*	Oriental House Rat	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
14	Non-volant	Muridae	*Rattus tiomanicus*	Malaysian Wood Rat	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
15	Non-volant	Mustelidae	*Lutrogale perspicillata*	Smooth-coated Otter	Widespread but Rare	Critically Endangered	Vulnerable	Native	Yes	No
16	Non-volant	Sciuridae	*Callosciurus notatus*	Plantain Squirrel	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
17	Non-volant	Soricidae	*Suncus murinus*	House Shrew	Widespread & Common	Not Listed	Least Concern	Native	Yes	No
18	Non-volant	Suidae	*Sus scrofa*	Wild Pig	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
19	Non-volant	Tupaiidae	*Tupaia glis*	Common Treeshrew	Widespread & Common	Not Listed	Least Concern	Native	Yes	Yes
20	Non-volant	Viverridae	*Paradoxurus hermaphroditus*	Common Palm Civet	Widespread but Uncommon	Not Listed	Least Concern	Native	Yes	Yes

ODONATES

No.	Dragonfly/ Damselfly	Family	Scientific name	Common name	Updated Local Status (Ngiam & Cheong, 2016)	Local status (SRDB)	Global status (IUCN/CITES)	Abundance/Rarity (Ngiam & Cheong, 2016)	Probable?	Recorded?
1	Dragonfly	Aeshnidae	*Anax guttatus*	Emperor	Least Concern	Least Concern	Least Concern	Widespread but Uncommon	Yes	No
2	Dragonfly	Aeshnidae	*Gynacantha subinterrupta*	Dingy Duskhawker	Least Concern	Least Concern	Least Concern	Widespread but Uncommon	Yes	Yes
3	Dragonfly	Aeshnidae	*Gynacantha dohrni*	Spear-tail Duskhawker	Least Concern	Least Concern	Not Assessed	Widespread but Uncommon	Yes	No
4	Damselfly	Coenagrionidae	*Mortonagrion arthuri*	Arthur's Midget	Vulnerable	Least Concern	Near Threatened	Restricted & Rare	Yes	Yes
5	Damselfly	Coenagrionidae	*Pseudagrion microcephalum*	Blue Sprite	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
6	Damselfly	Coenagrionidae	*Ischnura senegalensis*	Common Bluetail	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
7	Damselfly	Coenagrionidae	*Ceriagrion cerinorubellum*	Ornate Coraltail	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
8	Damselfly	Coenagrionidae	*Teinobasis ruficollis*	Red-tailed Sprite	Near Threatened	Critically Endangered	Not Assessed	Widespread but Rare	Yes	Yes
9	Damselfly	Coenagrionidae	*Argiocnemis rubescens*	Variable Sprite	Least Concern	Critically Endangered	Least Concern	Widespread but Uncommon	Yes	No
10	Damselfly	Coenagrionidae	*Agriocnemis femina*	Variable Wisp	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
11	Damselfly	Coenagrionidae	*Archibasis viola*	Violet Sprite	Least Concern	Critically Endangered	Least Concern	Widespread & Common	Yes	No
12	Dragonfly	Gomphidae	*Ictinogomphus decoratus*	Common Flangetail	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
13	Dragonfly	Libellulidae	*Brachydiplax chalybea*	Blue Dasher	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
14	Dragonfly	Libellulidae	*Diplacodes trivialis*	Blue Percher	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
15	Dragonfly	Libellulidae	*Orthetrum glaucum*	Blue Skimmer	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
16	Dragonfly	Libellulidae	*Camacinia gigantea*	Sultan	Least Concern	Critically Endangered	Least Concern	Widespread but Uncommon	Yes	Yes
17	Dragonfly	Libellulidae	*Brachythemis contaminata*	Common Amberwing	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
18	Dragonfly	Libellulidae	*Neurothemis fluctuans*	Common Parasol	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
19	Dragonfly	Libellulidae	*Rhodothemis rufa*	Common Redbolt	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
20	Dragonfly	Libellulidae	*Crocothemis servilia*	Common Scarlet	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
21	Dragonfly	Libellulidae	*Trithemis aurora*	Crimson Dropwing	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
22	Dragonfly	Libellulidae	*Trithemis pallidinervis*	Dancing Dropwing	Least Concern	Least Concern	Least Concern	Widespread but Uncommon	Yes	No
23	Dragonfly	Libellulidae	*Cratilla metallica*	Dark-tipped Forest Skimmer	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
24	Dragonfly	Libellulidae	*Agrionoptera insignis*	Grenadier	Least Concern	Least Concern	Least Concern	Widespread and Common	Yes	Yes
25	Dragonfly	Libellulidae	*Agrionoptera sexlineata*	Handsome Grenadier	Least Concern	Critically Endangered	Not Assessed	Widespread but Uncommon	Yes	No
26	Dragonfly	Libellulidae	*Raphismia bispina*	Mangrove Dwarf	Near Threatened	Least Concern	Least Concern	Widespread but Uncommon	Yes	Yes
27	Dragonfly	Libellulidae	*Pornothemis starrei*	Mangrove Marshal	Near Threatened	Critically Endangered	Not Assessed	Widespread but Uncommon	Yes	Yes
28	Dragonfly	Libellulidae	*Aethriamanta gracilis*	Pond Adjudant	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
29	Dragonfly	Libellulidae	*Pseudothemis jorina*	Banded Skimmer	Least Concern	Critically Endangered	Least Concern	Widespread but Uncommon	Yes	Yes
30	Dragonfly	Libellulidae	*Tramea transmarina*	Saddlebag Glider	Least Concern	Critically Endangered	Least Concern	Widespread & Common	Yes	No
31	Dragonfly	Libellulidae	*Lathrecista asiatica*	Scarlet Grenadier	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
32	Dragonfly	Libellulidae	*Orthetrum testaceum*	Scarlet Skimmer	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
33	Dragonfly	Libellulidae	*Orthetrum luzonicum*	Slender Blue Skimmer	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
34	Dragonfly	Libellulidae	*Zyxomma petiolatum*	Slender Duskdarter	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
35	Dragonfly	Libellulidae	*Orthetrum chrysis*	Spine-tufted Skimmer	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
36	Dragonfly	Libellulidae	*Acisoma panorpoides*	Trumpet Tail	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
37	Dragonfly	Libellulidae	*Orchithemis pulcherrima*	Variable Sentinel	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
38	Dragonfly	Libellulidae	*Orthetrum sabina*	Variegated Green Skimmer	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
39	Dragonfly	Libellulidae	*Pantala flavescens*	Wandering Glider	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	Yes
40	Dragonfly	Libellulidae	*Tholymis tillarga*	White-barred Duskhawk	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No
41	Dragonfly	Libellulidae	*Rhyothemis phyllis*	Yellow-barred Flutterer	Least Concern	Nationally Extinct	Least Concern	Widespread & Common	Yes	No
42	Damselfly	Platycnemididae	*Prodasineura collaris*	Collared Threadtail	Endangered	Least Concern	Least Concern	Restricted & Uncommon	Yes	No
43	Damselfly	Platycnemididae	*Onychargia atrocyana*	Shorttail	Least Concern	Least Concern	Least Concern	Widespread but Uncommon	Yes	No
44	Damselfly	Platycnemididae	*Copera vittata*	Variable Featherlegs	Vulnerable	Critically Endangered	Least Concern	Restricted & Rare	Yes	No
45	Damselfly	Platycnemididae	*Copera marginipes*	Yellow Featherlegs	Least Concern	Least Concern	Least Concern	Widespread & Common	Yes	No

OTHERS (AQUATIC)

No	Family	Scientific name	Common Name	Local Status (SRDB)	Global Status (IUCN)	Residence (IUCN, Nparks Flora & Fauna Web, Sealifebase, The Biodiversity of Singapore, Fiddler Crabs, A Guide to Mangroves of Singapore)	Probable?	Recorded?
23	Actiniidae	*Anthopleura sp.*	N/A	Not Listed	Not Assessed	N/A	Yes	No
1	Callioplanidae	*Meixneria furva*	N/A	Data Deficient	Not Assessed	N/A	Yes	Yes
8	Capitellidae	-	N/A	Not Listed	Not Assessed	N/A	Yes	No
18	Cirratulidae	-	N/A	Not Listed	Not Assessed	N/A	Yes	No
15	Ctenodrilidae	-	N/A	Not Listed	Not Assessed	N/A	Yes	No
6	Eunicidae	*Nauphanta mossambica*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes**
5	Eunicidae*	-	N/A	Not Listed	Not Assessed	N/A	Yes	No
21	Glyceridae	-	N/A	Not Listed	Not Assessed	N/A	Yes	No
2	Limnostylochidae	*Limnostylochus sp.*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes
4	Nereididae	*Neanthes glandicincta*	N/A	Not Listed	Not Assessed	N/A	Yes	Yes**
3	Nereididae*	-	N/A	Not Listed	Not Assessed	N/A	Yes	No
9	Onuphidae	-	N/A	Not Listed	Not Assessed	N/A	Yes	No
13	Opheliidae	-	N/A	Not Listed	Not Assessed	N/A	Yes	No
22	Prosorhochmidae	*Pantinonemertes sp.*	N/A	Endangered	Not Assessed	N/A	Yes	No
7	Spionidae	-	N/A	Not Listed	Not Assessed	N/A	Yes	No

* Represent numerous species in the Family, distinct from species already stated in expected list.

** Indiative that species was likley to be recorded, but not able to confirm.

MOLLUSCS

Common name	Local status (SRDB)	Global status (IUCN/CITES)	Native status (IUCN, Nparks Flora & Fauna Web, Sealifebase, The Biodiversity of Singapore, A Guide to Mangroves of Singapore)	Probable?	Recorded?
N/A	Not Listed	Not Assessed	Non-native	No	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Least Concern	Native	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Least Concern	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	Non-native	Yes	Yes
N/A	Not Listed	Not Assessed	Non-native	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Least Concern	N/A	Yes	No
N/A	Not Listed	Not Assessed	Native	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	Non-native	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Least Concern	Native	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No

N/A	Not Listed	Least Concern	Native	Yes	Yes
N/A	Not Listed	Least Concern	Native	Yes	Yes
N/A	Not Listed	Not Assessed	Native	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	Yes
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No
N/A	Not Listed	Not Assessed	N/A	Yes	No

Appendix F

List of Fauna Species of Conservation Significance

No.	Taxon	Family	Scientific name	Common name	Local status (SRDB; Ngiam & Cheong, 2016)	Global status (IUCN/CITES)	Abundance/Rarity (Ngiam & Cheong, 2016)	Probable?	Recorded?
1	Odonate	Coenagrionidae	*Mortonagrion arthuri*	Arthur's Midget	Vulnerable	Near Threatened	Restricted & Rare	Yes	Yes
2	Odonate	Platycnemididae	*Prodasineura collaris*	Collared Threadtail	Endangered	Least Concern	Restricted & Uncommon	Yes	No
3	Odonate	Platycnemididae	*Copera vittata*	Variable Featherlegs	Vulnerable	Least Concern	Restricted & Rare	Yes	No
4	Butterfly	Hesperiidae	*Pelopidas agna agna*	Bengal Swift	Endangered	Not Assessed	Moderately common	Yes	No
5	Butterfly	Hesperiidae	*Borbo cinnara*	Formosan Swift	Endangered	Not Assessed	Moderately common	Yes	No
6	Butterfly	Hesperiidae	*Cephrenes acalle niasicus*	Plain Palm Dart	Nationally Extinct	Not Assessed	Moderately rare	Yes	No
7	Butterfly	Lycaenidae	*Arhopala amphimuta amphimuta*	-	Nationally Extinct	Not Assessed	Moderately common	Yes	No
8	Butterfly	Lycaenidae	*Catopyrops ancyra*	Ancyra Blue	Vulnerable	Not Assessed	Moderately rare	Yes	Yes
9	Butterfly	Lycaenidae	*Nacaduba kurava nemana*	Transparent Sixline Blue	Nationally Extinct	Not Assessed	Moderately common	Yes	No
10	Butterfly	Papilionidae	*Troides helena cerberus*	Common Birdwing	Vulnerable	Not assessed; CITES protected (Appendix II)	Moderately common	Yes	Yes
11	Decapod crustacean & horseshoe crab	Alpheidae	*Alpheus microrhynchus*	N/A	Endangered	Not Assessed	N/A	Yes	No
12	Decapod crustacean & horseshoe crab	Alpheidae	Potamalpheops johnsoni	N/A	Vulnerable	Not Assessed	N/A	Yes	No
13	Decapod crustacean & horseshoe crab	Alpheidae	Potamalpheops tigger	N/A	Vulnerable	Not Assessed	N/A	Yes	No
14	Decapod crustacean & horseshoe crab	Dotillinae	Ilyoplax delsmani	N/A	Vulnerable	Not Assessed	Native	Yes	No
15	Decapod crustacean & horseshoe crab	Limulidae	*Carcinoscorpius rotundicauda*	N/A	Vulnerable	Data Deficient	Native	Yes	No
16	Decapod crustacean & horseshoe crab	Limulidae	*Tachypleus gigas*	N/A	Endangered	Data Deficient	Native	Yes	No
17	Decapod crustacean & horseshoe crab	Thalassinidae	*Thalassina sp.**	N/A	Endangered	Not Assessed	Native	Yes	No
18	Decapod crustacean & horseshoe crab	Upogebiidae	*Wolffogebia phuketensis*	N/A	Endangered	Not Assessed	Native	Yes	No
19	Herpetofauna	Colubridae	*Pseudorabdion longiceps*	Dwarf Reed Snake	Endangered	Least Concern	Widespread but Rare	Yes	No
20	Herpetofauna	Colubridae	*Boiga dendrophila*	Gold-ringed Cat Snake	Vulnerable	Least Concern	Widespread but Rare	Yes	No
21	Herpetofauna	Colubridae	*Coelognathus flavolineatus*	Common Malayan Racer	Endangered	Least Concern	Widespread but Rare	Yes	No
22	Herpetofauna	Cylindrophiidae	*Cylindrophis ruffus*	Red-tailed Pipe Snake	Critically Endangered	Least Concern	Widespread but Rare	Yes	No
23	Herpetofauna	Gekkonidae	*Cyrtodactylus majulah*	Singapore Bent-toed Gecko	Vulnerable	Not Assessed	Restricted & Rare	Yes	Yes
24	Herpetofauna	Geomydidae	*Cuora amboinensis*	Malayan Box Terrapin	Not Assessed	Vulnerable	Restricted but Common	Yes	Yes
25	Herpetofauna	Geomydidae	*Heosemys grandis*	Giant Asian Pond Turtle	Not Assessed	Vulnerable	-	Yes	No
26	Herpetofauna	Geomydidae	*Siebenrockiella crassicollis*	Black Marsh Terrapin	Not Assessed	Vulnerable	Widespread & Common	Yes	No
27	Herpetofauna	Homalopsidae	*Cantoria violacea*	Cantor's Water Snake	Critically Endangered	Least Concern	Widespread but Rare	Yes	No
28	Herpetofauna	Homalopsidae	*Fordonia leucobalia*	Crab-eating Water Snake	Endangered	Least Concern	Widespread but Rare	Yes	No
29	Herpetofauna	Homalopsidae	*Gerarda prevostiana*	Yellow-lipped Water Snake	Endangered	Least Concern	Widespread but Rare	Yes	No
30	Herpetofauna	Homalopsidae	*Homalopsis buccata*	Puff-faced Water Snake	Vulnerable	Least Concern	Widespread but Uncommon	Yes	No
31	Herpetofauna	Scincidae	*Emoia atrocostata*	Mangrove Skink	Endangered	Not Assessed	Restricted & Rare	Yes	No
32	Herpetofauna	Viperidae	*Trimeresurus purpureomaculatus*	Shore Pit Viper	Endangered	Least Concern	Restricted & Rare	Yes	No
33	Bird	Accipitridae	*Accipiter trivirgatus*	Crested Goshawk	Critically Endangered	Least Concern	Uncommon	Yes	No
34	Bird	Accipitridae	*Nisaetus cirrhatus*	Changeable Hawk-Eagle	Endangered	Least Concern	Uncommon	Yes	No
35	Bird	Accipitridae	*Spilornis cheela*	Crested Serpent Eagle	Critically Endangered	Least Concern	Rare	Yes	No
36	Bird	Alcedinidae	*Halcyon coromanda*	Ruddy Kingfisher	Critically Endangered	Least Concern	Uncommon	Yes	No
37	Bird	Ardeidae	*Ardea cinerea*	Grey Heron	Vulnerable	Least Concern	Common	Yes	No
38	Bird	Ardeidae	*Ardea purpurea*	Purple Heron	Endangered	Least Concern	Uncommon	Yes	Yes
39	Bird	Ardeidae	*Egretta eulophotes*	Chinese Egret	Not Listed	Vulnerable	Rare	Yes	No
40	Bird	Ardeidae	*Nycticorax nycticorax*	Black-crowned Night Heron	Critically Endangered	Least Concern	Uncommon	Yes	No
41	Bird	Bucerotidae	*Anthracoceros albirostris*	Oriental Pied Hornbill	Critically Endangered	Critically Endangered	Common	Yes	No
42	Bird	Cacatuidae	*Cacatua sulphurea*	Yellow-crested Cockatoo	Not Listed	Critically Endangered	Uncommon	Yes	No
43	Bird	Charadriidae	*Vanellus indicus*	Red-wattled Lapwing	Endangered	Least Concern	Uncommon	Yes	Yes
44	Bird	Cuculidae	*Cacomantis sepulcralis*	Rusty-breasted Cuckoo	Vulnerable	Least Concern	Uncommon	Yes	No
45	Bird	Cuculidae	*Chrysococcyx xanthorhynchus*	Violet Cuckoo	Endangered	Least Concern	Rare	Yes	No
46	Bird	Cuculidae	*Surniculus lugubris*	Square-tailed Drongo-Cuckoo	Critically Endangered	Least Concern	Uncommon	Yes	No
47	Bird	Muscicapidae	*Copsychus saularis*	Oriental Magpie-Robin	Endangered	Least Concern	Uncommon	Yes	Yes
48	Bird	Muscicapidae	*Copsychus malabaricus*	White-rumped Shama	Critically Endangered	Least Concern	Rare	No	Yes

49	Bird	Phasianidae	*Gallus gallus*	Red Junglefowl	Endangered	Least Concern	Common	Yes	No
50	Bird	Pittidae	*Pitta megarhyncha*	Mangrove Pitta	Critically Endangered	Near Threatened	Rare	No	Yes
51	Bird	Psittaculidae	*Loriculus galgulus*	Blue-crowned Hanging-parrot	Endangered	Least Concern	Common	Yes	Yes
52	Bird	Pycnonotidae	*Pycnonotus zeylanicus*	Straw-headed Bulbul	Endangered	Vulnerable	Uncommon	Yes	No
53	Bird	Rallidae	*Rallina fasciata*	Red-legged Crake	Vulnerable	Least Concern	Uncommon	Yes	Yes
54	Bird	Strigidae	*Ketupa ketupu*	Buffy Fish Owl	Critically Endangered	Least Concern	Uncommon	Yes	No
55	Bird	Strigidae	*Strix seloputo*	Spotted Wood Owl	Critically Endangered	Least Concern	Uncommon	Yes	Yes
56	Bird	Columbidae	*Treron curvirostra*	Thick-billed Green Pigeon	Endangered	Least Concern	Uncommon	No	Yes
57	Mammal	Emballonuridae	*Taphozous melanopogon*	Black-bearded Tomb Bat	Endangered	Least Concern	Widespread but Rare	Yes	No
58	Mammal	Mustelidae	*Lutrogale perspicillata*	Smooth-coated Otter	Critically Endangered	Vulnerable	Widespread but Rare	Yes	No

Appendix G

Fauna Survey Data

DATE	WAYPOINT	LAT	LONG	SAMPLINGPOINT	LAT	LONG	TIME (H)	TAXON	SCIENTIFIC NAME	COMMON NAME	INDIVIDUALS	SEEN/HEARD	METHOD
08-Oct-18	AF2002	1.443968397	103.7821598	T2_01	1.443968397	103.7821598	0722	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Heard	Transect
08-Oct-18	AF2002	1.443968397	103.7821598	T2_01	1.443968397	103.7821598	0722	Bird	*Treron vernans*	Pink-necked Green Pigeon	2	Seen	Transect
08-Oct-18	AF2002	1.443968397	103.7821598	T2_01	1.443968397	103.7821598	0722	Bird	*Aerodramus sp.*	Swiftlet sp.	5	Seen	Transect
08-Oct-18	AF2002	1.443968397	103.7821598	T2_01	1.443968397	103.7821598	0722	Bird	*Hirundo rustica*	Barn Swallow	1	Seen	Transect
08-Oct-18	AF2002	1.443968397	103.7821598	T2_01	1.443968397	103.7821598	0722	Bird	*Psittacula krameri*	Rose-ringed Parakeet	2	Seen	Transect
08-Oct-18	AF2002	1.443968397	103.7821598	T2_01	1.443968397	103.7821598	0722	Bird	*Acridotheres javanicus*	Javan Myna	3	Seen	Transect
08-Oct-18	AF2002	1.443968397	103.7821598	T2_01	1.443968397	103.7821598	0722	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Heard	Transect
08-Oct-18	AF2002	1.443968397	103.7821598	T2_01	1.443968397	103.7821598	0722	Bird	*Yungipicus moluccensis*	Sunda Pygmy Woodpecker	1	Seen	Transect
08-Oct-18	AF2012	1.444192696	103.7817553	T2_01	1.444192696	103.7817553	0726	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	Transect
08-Oct-18	AF2012	1.444192696	103.7817553	T2_01	1.444192696	103.7817553	0726	Bird	*Butorides striata*	Striated Heron	1	Seen	Transect
08-Oct-18	AF2012	1.444192696	103.7817553	T2_01	1.444192696	103.7817553	0726	Bird	*Hirundo rustica*	Barn Swallow	1	Seen	Transect
08-Oct-18	AF2022	1.444682954	103.7809995	T2_02	1.444682954	103.7809995	0729	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	Transect
08-Oct-18	AF2032	1.444818405	103.7809745	T2_02	1.444818405	103.7809745	0731	Bird	*Lanius cristatus*	Brown Shrike	1	Seen	Transect
08-Oct-18	AF2032	1.444818405	103.7809745	T2_02	1.444818405	103.7809745	0731	Bird	*Aplonis panayensis*	Asian Glossy Starling	4	Seen	Transect
08-Oct-18	AF2032	1.444818405	103.7809745	T2_02	1.444818405	103.7809745	0731	Bird	*Acridotheres javanicus*	Javan Myna	1	Seen	Transect
08-Oct-18	AF2042	1.445029294	103.7807363	T2_02	1.445029294	103.7807363	0733	Bird	*Orthotomus sutorius*	Common Tailorbird	1	Seen	Transect
08-Oct-18	AF2052	1.445382424	103.7805881	T2_03	1.445382424	103.7805881	0735	Bird	*Macronus gularis*	Pin-striped Tit-babbler	2	Heard	Transect
08-Oct-18	AF2052	1.445382424	103.7805881	T2_03	1.445382424	103.7805881	0735	Bird	*Treron vernans*	Pink-necked Green Pigeon	4	Seen	Transect
08-Oct-18	AF2052	1.445382424	103.7805881	T2_03	1.445382424	103.7805881	0735	Bird	*Acridotheres javanicus*	Javan Myna	2	Seen	Transect
08-Oct-18	AF2052	1.445382424	103.7805881	T2_03	1.445382424	103.7805881	0735	Bird	*Aplonis panayensis*	Asian Glossy Starling	5	Seen	Transect
08-Oct-18	AF2052	1.445382424	103.7805881	T2_03	1.445382424	103.7805881	0735	Bird	*Psittacula longicauda*	Long-tailed Parakeet	2	Seen	Transect
08-Oct-18	AF2052	1.445382424	103.7805881	T2_03	1.445382424	103.7805881	0735	Bird	*Zosterops palpebrosus*	Oriental White-eye	1	Seen	Transect
08-Oct-18	AF2062	1.445748126	103.7804123	T2_04	1.445748126	103.7804123	0739	Bird	*Orthotomus ruficeps*	Ashy Tailorbird	1	Heard	Transect
08-Oct-18	AF2062	1.445748126	103.7804123	T2_04	1.445748126	103.7804123	0739	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	Transect
08-Oct-18	AF2062	1.445748126	103.7804123	T2_04	1.445748126	103.7804123	0739	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Heard	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	2	Seen	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Hirundo rustica*	Barn Swallow	1	Seen	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Eudynamys scolopaceus*	Asian Koel	1	Heard	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Corvus macrorhynchos*	Large-billed Crow	1	Seen	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Psittacula longicauda*	Long-tailed Parakeet	4	Seen	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Heard	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Psittacula krameri*	Rose-ringed Parakeet	1	Heard	Transect
08-Oct-18	AF2072	1.446054904	103.780297	T2_05	1.446054904	103.780297	0741	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
08-Oct-18	AF2082	1.446574414	103.779846	T2_06	1.446574414	103.779846	0746	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	2	Seen	Transect
08-Oct-18	AF2082	1.446574414	103.779846	T2_06	1.446574414	103.779846	0746	Bird	*Terpsiphone incei*	Amur Paradise Flycatcher	2	Seen	Transect
08-Oct-18	AF2082	1.446574414	103.779846	T2_06	1.446574414	103.779846	0746	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	2	Seen	Transect
08-Oct-18	AF2082	1.446574414	103.779846	T2_06	1.446574414	103.779846	0746	Bird	*Spilopelia chinensis*	Spotted Dove	1	Heard	Transect
08-Oct-18	AF2082	1.446574414	103.779846	T2_06	1.446574414	103.779846	0746	Bird	*Orthotomus atrogularis*	Dark-necked Tailorbird	1	Seen	Transect
08-Oct-18	AF2082	1.446574414	103.779846	T2_06	1.446574414	103.779846	0746	Bird	*Pycnonotus plumosus*	Olive-winged Bulbul	1	Heard	Transect
08-Oct-18	AF2082	1.446574414	103.779846	T2_06	1.446574414	103.779846	0746	Bird	*Anthreptes malacensis*	Brown-throated Sunbird	1	Seen	Transect
08-Oct-18	AF2082	1.446574414	103.779846	T2_06	1.446574414	103.779846	0746	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	Transect
08-Oct-18	AF2092	1.447115466	103.7792652	T2_09	1.447115466	103.7792652	0755	Bird	*Picus vittatus*	Laced Woodpecker	1	Seen	Transect
08-Oct-18	AF2092	1.447115466	103.7792652	T2_09	1.447115466	103.7792652	0755	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	3	Heard	Transect
08-Oct-18	AF2092	1.447115466	103.7792652	T2_09	1.447115466	103.7792652	0755	Bird	*Dicaeum cruentatum*	Scarlet-backed Flowerpecker	1	Heard	Transect
08-Oct-18	AF2092	1.447115466	103.7792652	T2_09	1.447115466	103.7792652	0755	Bird	*Rhipidura javanica*	Malaysian Pied Fantail	1	Heard	Transect
08-Oct-18	AF2092	1.447115466	103.7792652	T2_09	1.447115466	103.7792652	0755	Bird	*Acridotheres javanicus*	Javan Myna	1	Heard	Transect
08-Oct-18	AF2092	1.447115466	103.7792652	T2_09	1.447115466	103.7792652	0755	Bird	*Zosterops palpebrosus*	Oriental White-eye	1	Heard	Transect
08-Oct-18	AF2102	1.44798358	103.7788764	T2_11	1.44798358	103.7788764	0759	Bird	*Oriolus chinensis*	Black-naped Oriole	2	Heard	Transect
08-Oct-18	AF2102	1.44798358	103.7788764	T2_11	1.44798358	103.7788764	0759	Bird	*Pycnonotus plumosus*	Olive-winged Bulbul	2	Heard	Transect
08-Oct-18	AF2102	1.44798358	103.7788764	T2_11	1.44798358	103.7788764	0759	Bird	*Zosterops palpebrosus*	Oriental White-eye	1	Heard	Transect
08-Oct-18	AF2102	1.44798358	103.7788764	T2_11	1.44798358	103.7788764	0759	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Heard	Transect
08-Oct-18	AF2102	1.44798358	103.7788764	T2_11	1.44798358	103.7788764	0759	Bird	*Aethopyga siparaja*	Crimson Sunbird	1	Heard	Transect
08-Oct-18	AF2112	1.448604846	103.7786411	T2_12	1.448604846	103.7786411	0805	Bird	*Orthotomus ruficeps*	Ashy Tailorbird	2	Heard	Transect
08-Oct-18	AF2112	1.448604846	103.7786411	T2_12	1.448604846	103.7786411	0805	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
08-Oct-18	AF2112	1.448604846	103.7786411	T2_12	1.448604846	103.7786411	0805	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	Transect
08-Oct-18	AF2112	1.448604846	103.7786411	T2_12	1.448604846	103.7786411	0805	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Heard	Transect
08-Oct-18	AF2112	1.448604846	103.7786411	T2_12	1.448604846	103.7786411	0805	Bird	*Picus vittatus*	Laced Woodpecker	1	Heard	Transect
08-Oct-18	AF2122	1.449451754	103.7783637	T2_12	1.449451754	103.7783637	0811	Bird	*Pelargopsis capensis*	Stork-billed Kingfisher	1	Seen	Transect

08-Oct-18	AF2122	1.449451754	103.7783637	T2_14	1.449451754	103.7783637	0811	Bird	*Psittacula longicauda*	Long-tailed Parakeet	2	Heard	Transect
08-Oct-18	AF2122	1.449451754	103.7783637	T2_14	1.449451754	103.7783637	0811	Bird	*Orthotomus ruficeps*	Ashy Tailorbird	1	Heard	Transect
08-Oct-18	AF2122	1.449451754	103.7783637	T2_14	1.449451754	103.7783637	0811	Bird	*Aplonis panayensis*	Asian Glossy Starling	5	Seen	Transect
08-Oct-18	AF2122	1.449451754	103.7783637	T2_14	1.449451754	103.7783637	0811	Bird	*Pycnonotus plumosus*	Olive-winged Bulbul	1	Heard	Transect
08-Oct-18	AF2132	1.449826844	103.778481	T2_15	1.449826844	103.778481	0816	Bird	*Geopelia striata*	Zebra Dove	1	Seen	Transect
08-Oct-18	AF2132	1.449826844	103.778481	T2_15	1.449826844	103.778481	0816	Bird	*Macronus gularis*	Pin-striped Tit-babbler	2	Heard	Transect
08-Oct-18	AF2132	1.449826844	103.778481	T2_15	1.449826844	103.778481	0816	Bird	*Eurystomus orientalis*	Oriental Dollarbird	1	Seen	Transect
08-Oct-18	AF2132	1.449826844	103.778481	T2_15	1.449826844	103.778481	0816	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Heard	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Aethopyga siparaja*	Crimson Sunbird	2	Heard	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Seen	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Seen	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Zosterops palpebrosus*	Oriental White-eye	10	Seen	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Seen	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Todiramphus chloris*	Collared Kingfisher	1	Heard	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Leptocoma calcostetha*	Copper-throated Sunbird	1	Seen	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Pycnonotus plumosus*	Olive-winged Bulbul	2	Heard	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Psittacula longicauda*	Long-tailed Parakeet	1	Seen	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Seen	Transect
08-Oct-18	AF2141	1.449850649	103.7788466	T2_16	1.449850649	103.7788466	0821	Bird	*Chrysococcyx minutillus*	Little Bronze-Cuckoo	1	Heard	Transect
08-Oct-18	AF2151	1.450006636	103.7793523	T2_17	1.450006636	103.7793523	0846	Bird	*Orthotomus ruficeps*	Ashy Tailorbird	1	Heard	Transect
08-Oct-18	AF2151	1.450006636	103.7793523	T2_17	1.450006636	103.7793523	0846	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Seen	Transect
08-Oct-18	AF2151	1.450006636	103.7793523	T2_17	1.450006636	103.7793523	0846	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
08-Oct-18	AF2151	1.450006636	103.7793523	T2_17	1.450006636	103.7793523	0846	Bird	*Macronus gularis*	Pin-striped Tit-babbler	2	Heard	Transect
08-Oct-18	AF2151	1.450006636	103.7793523	T2_17	1.450006636	103.7793523	0846	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	Transect
08-Oct-18	AF2161	1.450468143	103.7793767	T2_18	1.450468143	103.7793767	0849	Bird	*Egretta garzetta*	Little Egret	1	Seen	Transect
08-Oct-18	AF2161	1.450468143	103.7793767	T2_18	1.450468143	103.7793767	0849	Bird	*Psittacula alexandri*	Red-breasted Parakeet	1	Seen	Transect
08-Oct-18	AF2161	1.450468143	103.7793767	T2_18	1.450468143	103.7793767	0849	Bird	*Spilopelia chinensis*	Spotted Dove	2	Heard	Transect
08-Oct-18	AF2161	1.450468143	103.7793767	T2_18	1.450468143	103.7793767	0849	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
08-Oct-18	AF2161	1.450468143	103.7793767	T2_18	1.450468143	103.7793767	0849	Bird	*Lalage nigra*	Pied Triller	2	Seen	Transect
08-Oct-18	AF2161	1.450468143	103.7793767	T2_18	1.450468143	103.7793767	0849	Bird	*Chrysococcyx minutillus*	Little Bronze-Cuckoo	1	Heard	Transect
08-Oct-18	AF2161	1.450468143	103.7793767	T2_18	1.450468143	103.7793767	0849	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	Transect
08-Oct-18	AF2171	1.450863099	103.7797809	T2_20	1.450863099	103.7797809	0856	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	Transect
08-Oct-18	AF2171	1.450863099	103.7797809	T2_20	1.450863099	103.7797809	0856	Bird	*Acridotheres javanicus*	Javan Myna	2	Seen	Transect
08-Oct-18	AF2181	1.451033419	103.7805236	T2_19	1.451033419	103.7805236	0901	Bird	*Aegithina tiphia*	Common Iora	1	Seen	Transect
08-Oct-18	AF2181	1.451033419	103.7805236	T2_19	1.451033419	103.7805236	0901	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Seen	Transect
08-Oct-18	AF2181	1.451033419	103.7805236	T2_19	1.451033419	103.7805236	0901	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Seen	Transect
08-Oct-18	AF2181	1.451033419	103.7805236	T2_19	1.451033419	103.7805236	0901	Bird	*Ficedula zanthopygia*	Yellow-rumped Flycatcher	1	Seen	Transect
08-Oct-18	AF2181	1.451033419	103.7805236	T2_19	1.451033419	103.7805236	0901	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	2	Seen	Transect
08-Oct-18	AF2191	1.451386968	103.7803046	T2_20	1.451386968	103.7803046	0907	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Seen	Transect
08-Oct-18	AF2191	1.451386968	103.7803046	T2_20	1.451386968	103.7803046	0907	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	Transect
08-Oct-18	AF2191	1.451386968	103.7803046	T2_20	1.451386968	103.7803046	0907	Bird	*Spilopelia chinensis*	Spotted Dove	1	Heard	Transect
08-Oct-18	AF2191	1.451386968	103.7803046	T2_20	1.451386968	103.7803046	0907	Bird	*Lalage nigra*	Pied Triller	1	Seen	Transect
08-Oct-18	AF2191	1.451386968	103.7803046	T2_20	1.451386968	103.7803046	0907	Bird	*Acridotheres javanicus*	Javan Myna	1	Seen	Transect
08-Oct-18	AF2201	1.450865194	103.7786314	T2_21	1.450865194	103.7786314	0917	Bird	*Psittacula alexandri*	Red-breasted Parakeet	10	Seen	Transect
08-Oct-18	AF2211	1.450625388	103.7780589	T2_22	1.450625388	103.7780589	0920	Bird	*Eudynamys scolopaceus*	Asian Koel	1	Heard	Transect
08-Oct-18	AF2211	1.450625388	103.7780589	T2_22	1.450625388	103.7780589	0920	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	Transect
08-Oct-18	AF2221	1.451037023	103.7781002	T2_22	1.451037023	103.7781002	0926	Bird	*Picus vittatus*	Laced Woodpecker	1	Seen	Transect
10-Oct-18	J3052	1.445109006	103.781425	T1_02	1.445163	103.781445	0732	Bird	*Dinopium javanense*	Common Flameback	1	Seen	Transect
10-Oct-18	J3052	1.445109006	103.781425	T1_02	1.445163	103.781445	0732	Bird	*Picus vittatus*	Laced Woodpecker	1	Heard	
10-Oct-18	J3052	1.445109006	103.781425	T1_02	1.445163	103.781445	0732	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	
10-Oct-18	J3052	1.445109006	103.781425	T1_02	1.445163	103.781445	0732	Bird	*Acridotheres javanicus*	Javan Myna	1	Heard	
10-Oct-18	J3052	1.445109006	103.781425	T1_02	1.445163	103.781445	0732	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	
10-Oct-18	J3052	1.445109006	103.781425	T1_02	1.445163	103.781445	0732	Bird	*Apodidae*	Swiftlet sp.	1	Seen	
10-Oct-18	J3052	1.445109006	103.781425	T1_02	1.445163	103.781445	0736	Bird	*Psittacula longicauda*	Long-tailed Parakeet	2	Heard	
10-Oct-18	J3053	1.445330959	103.781627	T1_02	1.445163	103.781445	0742	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	
10-Oct-18	J3053	1.445330959	103.781627	T1_02	1.445163	103.781445	0742	Bird	*Chalcophaps indica*	Common Emerald Dove	1	Heard	
10-Oct-18	J3053	1.445330959	103.781627	T1_02	1.445163	103.781445	0742	Bird	*Copsychus malabaricus*	White-rumped Shama	1	Heard	
10-Oct-18	J3054	1.445483007	103.781552	T1_03	1.445554	103.781554	0744	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	
10-Oct-18	J3054	1.445483007	103.781552	T1_03	1.445554	103.781554	0744	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	

10-Oct-18	J3054	1.445483007	103.781552	T1_03	1.445554	103.781554	0744	Bird	*Picus vittatus*	Laced Woodpecker	1	Heard	
10-Oct-18	J3054	1.445483007	103.781552	T1_03	1.445554	103.781554	0744	Bird	*Halcyon smyrnensis*	White-throated Kingfisher	1	Heard	
10-Oct-18	J3055	1.445564982	103.781541	T1_03	1.445554	103.781554	0746	Bird	*Geopelia striata*	Zebra Dove	1	Heard	
10-Oct-18	J3056	1.445733039	103.781385	T1_04	1.445837	103.781252	0749	Bird	*Psittacula longicauda*	Long-tailed Parakeet	1	Heard	
10-Oct-18	J3056	1.445733039	103.781385	T1_04	1.445837	103.781252	0749	Bird	*Eudynamys scolopaceus*	Asian Koel	1	Heard	
10-Oct-18	J3057	1.446049958	103.781095	T1_05	1.446148297	103.7811011	0754	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	
10-Oct-18	J3058	1.446208963	103.781145	T1_05	1.446148297	103.7811011	0755	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	
10-Oct-18	J3059	1.446390012	103.781267	T1_06	1.446523159	103.7812848	0757	Bird	*Psittacula krameri*	Rose-ringed Parakeet	1	Heard	
10-Oct-18	J3059	1.446390012	103.781267	T1_06	1.446523159	103.7812848	0757	Bird	*Nisaetus cirrhatus*	Changeable Hawk-Eagle	1	Heard	
10-Oct-18	J3060	1.446585981	103.781342	T1_06	1.446523159	103.7812848	0800	Bird	*Aegithina tiphia*	Common Iora	1	Heard	
10-Oct-18	J3060	1.446585981	103.781342	T1_06	1.446523159	103.7812848	0800	Bird	*Spilopelia chinensis*	Spotted Dove	1	Heard	
10-Oct-18	J3060	1.446585981	103.781342	T1_06	1.446523159	103.7812848	0800	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Heard	
10-Oct-18	J3060	1.446585981	103.781342	T1_06	1.446523159	103.7812848	0800	Bird	*Ficedula zanthopygia*	Yellow-rumped Flycatcher	1	Heard	
10-Oct-18	J3061	1.446742974	103.781491	T1_07	1.446646287	103.7816454	0804	Bird	*Lanius tigrinus*	Tiger Shrike	1	Heard	
10-Oct-18	J3061	1.446742974	103.781491	T1_07	1.446646287	103.7816454	0804	Bird	*Dinopium javanense*	Common Flameback	1	Heard	
10-Oct-18	J3062	1.446403004	103.781971	T1_08	1.446506124	103.7820842	0812	Bird	*Aplonis panayensis*	Asian Glossy Starling	1	Heard	
10-Oct-18	J3063	1.446358999	103.782119	T1_08	1.446506124	103.7820842	0814	Bird	*Lalage nigra*	Pied Triller	1	Seen	
10-Oct-18	J3063	1.446358999	103.782119	T1_08	1.446506124	103.7820842	0814	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Heard	
10-Oct-18	J3064	1.446362017	103.782083	T1_08	1.446506124	103.7820842	0822	Bird	*Treron curvirostra*	Thick-billed Green Pigeon	1	Seen	
10-Oct-18	J3064	1.446362017	103.782083	T1_08	1.446506124	103.7820842	0822	Bird	*Aplonis panayensis*	Asian Glossy Starling	2	Seen	
10-Oct-18	J3065	1.446478022	103.78235	T1_09	1.446465606	103.7824875	0829	Bird	*Eudynamys scolopaceus*	Asian Koel	1	Heard	
10-Oct-18	J3065	1.446478022	103.78235	T1_09	1.446465606	103.7824875	0829	Bird	*Psittacula longicauda*	Long-tailed Parakeet	1	Seen	
10-Oct-18	J3066	1.44670601	103.782491	T1_09	1.446465606	103.7824875	0832	Bird	*Psittacula longicauda*	Long-tailed Parakeet	1	Seen	
10-Oct-18	J3066	1.44670601	103.782491	T1_09	1.446465606	103.7824875	0832	Bird	*Psittacula krameri*	Rose-ringed Parakeet	1	Seen	
10-Oct-18	J3066	1.44670601	103.782491	T1_09	1.446465606	103.7824875	0832	Bird	*Geopelia striata*	Zebra Dove	2	Heard	
10-Oct-18	J3066	1.44670601	103.782491	T1_09	1.446465606	103.7824875	0832	Bird	*Dicaeum cruentatum*	Scarlet-backed Flowerpecker	1	Heard	
10-Oct-18	J3066	1.44670601	103.782491	T1_09	1.446465606	103.7824875	0832	Bird	*Lanius sp.*	Shrike sp.	1	Heard	
10-Oct-18	J3067	1.447209008	103.782628	T1_11	1.447299507	103.7827003	0839	Bird	*Oriolus chinensis*	Black-naped Oriole	2	Heard	
10-Oct-18	J3067	1.447209008	103.782628	T1_11	1.447299507	103.7827003	0839	Bird	*Aethopyga siparaja*	Crimson Sunbird	1	Heard	
10-Oct-18	J3067	1.447209008	103.782628	T1_11	1.447299507	103.7827003	0839	Bird	*Geopelia striata*	Zebra Dove	1	Heard	
10-Oct-18	J3068	1.447324008	103.782674	T1_11	1.447299507	103.7827003	0842	Bird	*Aegithina tiphia*	Common Iora	1	Seen	
10-Oct-18	J3068	1.447324008	103.782674	T1_11	1.447299507	103.7827003	0842	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Heard	
10-Oct-18	J3068	1.447324008	103.782674	T1_11	1.447299507	103.7827003	0842	Bird	*Zosterops palpebrosus*	Oriental White-eye	5	Heard	
10-Oct-18	J3068	1.447324008	103.782674	T1_11	1.447299507	103.7827003	0842	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Heard	
10-Oct-18	J3069	1.447483012	103.78258	T1_11	1.447299507	103.7827003	0845	Bird	*Orthotomus atrogularis*	Dark-necked Tailorbird	1	Heard	
10-Oct-18	J3070	1.447660038	103.782592	T1_11	1.447299507	103.7827003	0859	Bird	*Lanius sp.*	Shrike sp.	1	Heard	
10-Oct-18	J3071	1.448805006	103.783439	T1_16	1.448710252	103.783164	0909	Bird	*Ficedula zanthopygia*	Yellow-rumped Flycatcher	1	Heard	
10-Oct-18	J3071	1.448805006	103.783439	T1_16	1.448710252	103.783164	0909	Bird	*Lanius cristatus*	Brown Shrike	1	Heard	
10-Oct-18	J3071	1.448805006	103.783439	T1_16	1.448710252	103.783164	0909	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	
10-Oct-18	J3071	1.448805006	103.783439	T1_16	1.448710252	103.783164	0909	Bird	*Apodidae*	Swiftlet sp.	1	Seen	
10-Oct-18	J3072	1.448515998	103.782493	T1_18	1.448364716	103.7823522	0915	Bird	*Pycnonotus plumosus*	Olive-winged Bulbul	1	Heard	
10-Oct-18	J3072	1.448515998	103.782493	T1_18	1.448364716	103.7823522	0915	Bird	*Psittacula krameri*	Rose-ringed Parakeet	2	Heard	
10-Oct-18	J3073	1.44798601	103.781759	T1_20	1.447950778	103.7815395	0917	Bird	*Spilopelia chinensis*	Spotted Dove	2	Seen	
10-Oct-18	J3073	1.44798601	103.781759	T1_20	1.447950778	103.7815395	0917	Bird	*Geopelia striata*	Zebra Dove	3	Seen	
10-Oct-18	J3073	1.44798601	103.781759	T1_20	1.447950778	103.7815395	0917	Bird	*Acridotheres javanicus*	Javan Myna	1	Seen	
10-Oct-18	J3074	1.448123977	103.781144	T1_21	1.448075023	103.7810838	0920	Bird	*Aegithina tiphia*	Common Iora	1	Seen	
10-Oct-18	J3074	1.448123977	103.781144	T1_21	1.448075023	103.7810838	0920	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	
10-Oct-18	J3074	1.448123977	103.781144	T1_21	1.448075023	103.7810838	0920	Bird	*Apodidae*	Swiftlet sp.	5	Seen	
10-Oct-18	J3074	1.448123977	103.781144	T1_21	1.448075023	103.7810838	0920	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Heard	
10-Oct-18	J3074	1.448123977	103.781144	T1_21	1.448075023	103.7810838	0920	Bird	*Eurystomus orientalis*	Oriental Dollarbird	3	Seen	
10-Oct-18	J3075	1.448445003	103.780695	T1_21	1.448075023	103.7810838	0924	Bird	*Aegithina tiphia*	Common Iora	1	Seen	
10-Oct-18	J3076	1.449029977	103.780493	T1_24	1.449107	103.780387	0928	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	
12-Oct-18	CH3044	1.450826973	103.780046	T1_29	1.45075	103.78005	0718	Bird	*Lanius cristatus*	Brown Shrike	1	Seen	Transect
12-Oct-18	CH3045	1.450637039	103.780056	T1_29	1.45075	103.78005	0722	Bird	*Agropsar sturninus*	Daurian Starling	1	Seen	Transect
12-Oct-18	CH3045	1.450637039	103.780056	T1_29	1.45075	103.78005	0722	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	2	Seen	Transect
12-Oct-18	CH3045	1.450637039	103.780056	T1_29	1.45075	103.78005	0722	Bird	*Apodidae*	Swiftlet sp.	5	Seen	Transect
12-Oct-18	CH3046	1.450363034	103.780028	T1_28	1.45024	103.78005	0722	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	Transect
12-Oct-18	CH3047	1.449975036	103.780027	T1_27	1.44974	103.78006	0725	Bird	*Aplonis panayensis*	Asian Glossy Starling	5	Seen	Transect
12-Oct-18	CH3047	1.449975036	103.780027	T1_27	1.44974	103.78006	0725	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	Transect
12-Oct-18	CH3048	1.449579997	103.780017	T1_27	1.44974	103.78006	0726	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Heard	Transect

12-Oct-18	CH3049	1.448885975	103.779806	T1_25	1.44894	103.77997	0728	Bird	*Acridotheres javanicus*	Javan Myna	2	Seen	Transect
12-Oct-18	CH3049	1.448885975	103.779806	T1_25	1.44894	103.77997	0730	Bird	*Psittacula longicauda*	Long-tailed Parakeet	2	Heard	Transect
12-Oct-18	CH3050	1.448985972	103.779974	T1_25	1.44894	103.77997	0731	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	Transect
12-Oct-18	CH3050	1.448985972	103.779974	T1_25	1.44894	103.77997	0731	Bird	*Dinopium javanense*	Common Flameback	1	Heard	Transect
12-Oct-18	CH3050	1.448985972	103.779974	T1_25	1.44894	103.77997	0731	Bird	*Lanius sp.*	Shrike sp.	1	Heard	Transect
12-Oct-18	CH3051	1.449028971	103.780177	T1_24	1.44911	103.78039	0735	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	2	Heard	Transect
12-Oct-18	CH3051	1.449028971	103.780177	T1_24	1.44911	103.78039	0735	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	8	Seen	Transect
12-Oct-18	CH3052	1.448583975	103.780408	T1_23	1.44866	103.78042	0740	Bird	*Dicaeum cruentatum*	Scarlet-backed Flowerpecker	2	Heard	Transect
12-Oct-18	CH3052	1.448583975	103.780408	T1_23	1.44866	103.78042	0740	Bird	*Psittacula longicauda*	Long-tailed Parakeet	1	Heard	Transect
12-Oct-18	CH3053	1.448489008	103.780585	T1_22	1.44831	103.78070	0740	Bird	*Spilopelia chinensis*	Spotted Dove	1	Seen	Transect
12-Oct-18	CH3053	1.448489008	103.780585	T1_22	1.44831	103.78070	0740	Bird	*Acridotheres javanicus*	Javan Myna	2	Seen	Transect
12-Oct-18	CH3053	1.448489008	103.780585	T1_22	1.44831	103.78070	0741	Bird	*Nisaetus cirrhatus*	Changeable Hawk-Eagle	1	Heard	Transect
12-Oct-18	CH3053	1.448489008	103.780585	T1_22	1.44831	103.78070	0741	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Heard	Transect
12-Oct-18	CH3054	1.448363028	103.780808	T1_22	1.44831	103.78070	0742	Bird	*Apodidae*	Swiftlet sp.	2	Seen	Transect
12-Oct-18	CH3054	1.448363028	103.780808	T1_22	1.44831	103.78070	0742	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0746	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Heard	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0746	Bird	*Psittacula alexandri*	Red-breasted Parakeet	10	Seen	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0746	Bird	*Spilopelia chinensis*	Spotted Dove	2	Seen	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0750	Bird	*Hemiprocne longipennis*	Grey-rumped Treeswift	2	Seen	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0750	Bird	*Loriculus galgulus*	Blue-crowned Hanging-parrot	1	Seen	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0750	Bird	*Geopelia striata*	Zebra Dove	1	Seen	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0750	Bird	*Psittacula longicauda*	Long-tailed Parakeet	6	Seen	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0750	Bird	*Aplonis panayensis*	Asian Glossy Starling	2	Seen	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0751	Bird	*Hirundo tahitica*	Pacific Swallow	2	Seen	Transect
12-Oct-18	CH3055	1.447972013	103.781648	T1_20	1.44795	103.78154	0754	Bird	*Lanius sp.*	Shrike sp.	1	Heard	Transect
12-Oct-18	CH3056	1.448010989	103.781938	T1_19	1.44810	103.78196	0758	Bird	*Lanius cristatus*	Brown Shrike	1	Seen	Transect
12-Oct-18	CH3056	1.448010989	103.781938	T1_19	1.44810	103.78196	0758	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
12-Oct-18	CH3056	1.448010989	103.781938	T1_19	1.44810	103.78196	0759	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	Transect
12-Oct-18	CH3057	1.448212992	103.782192	T1_18	1.44836	103.78235	0800	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	Transect
12-Oct-18	CH3058	1.448379038	103.782452	T1_18	1.44836	103.78235	0800	Bird	*Aplonis panayensis*	Asian Glossy Starling	2	Seen	Transect
12-Oct-18	CH3059	1.448578024	103.782638	T1_17	1.44864	103.78271	0801	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
12-Oct-18	CH3059	1.448578024	103.782638	T1_17	1.44864	103.78271	0801	Bird	*Halcyon smyrnensis*	White-throated Kingfisher	1	Heard	Transect
12-Oct-18	CH3059	1.448578024	103.782638	T1_17	1.44864	103.78271	0802	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Seen	Transect
12-Oct-18	CH3060	1.44870501	103.782928	T1_17	1.44864	103.78271	0803	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Seen	Transect
12-Oct-18	CH3060	1.44870501	103.782928	T1_17	1.44864	103.78271	0803	Bird	*Psittacula longicauda*	Long-tailed Parakeet	2	Seen	Transect
12-Oct-18	CH3060	1.44870501	103.782928	T1_17	1.44864	103.78271	0804	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	Transect
12-Oct-18	CH3061	1.448685983	103.783295	T1_16	1.44871	103.78316	0805	Bird	*Aplonis panayensis*	Asian Glossy Starling	2	Seen	Transect
12-Oct-18	CH3062	1.448848005	103.783746	T1_15	1.44880	103.78379	0807	Bird	*Aplonis panayensis*	Asian Glossy Starling	4	Seen	Transect
12-Oct-18	CH3062	1.448848005	103.783746	T1_15	1.44880	103.78379	0808	Bird	*Hirundo tahitica*	Pacific Swallow	1	Seen	Transect
12-Oct-18	CH3062	1.448848005	103.783746	T1_15	1.44880	103.78379	0809	Bird	*Psittacula longicauda*	Long-tailed Parakeet	1	Seen	Transect
12-Oct-18	CH3063	1.448318018	103.783665	T1_14	1.44838	103.78362	0811	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	Transect
12-Oct-18	CH3064	1.448231013	103.783574	T1_14	1.44838	103.78362	0811	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
12-Oct-18	CH3064	1.448231013	103.783574	T1_14	1.44838	103.78362	0811	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	2	Heard	Transect
12-Oct-18	CH3065	1.448149038	103.783452	T1_13	1.44805	103.78328	0812	Bird	*Dicaeum cruentatum*	Scarlet-backed Flowerpecker	1	Heard	Transect
12-Oct-18	CH3066	1.448060023	103.783328	T1_13	1.44805	103.78328	0813	Bird	*Spilopelia chinensis*	Spotted Dove	1	Heard	Transect
12-Oct-18	CH3067	1.447878974	103.783143	T1_13	1.44805	103.78328	0815	Bird	*Geopelia striata*	Zebra Dove	1	Heard	Transect
12-Oct-18	CH3068	1.447704965	103.783002	T1_12	1.44774	103.78294	0816	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	Transect
12-Oct-18	CH3069	1.447657021	103.782949	T1_12	1.44774	103.78294	0818	Bird	*Haliaeetus leucogaster*	White-bellied Sea Eagle	2	Seen	Transect
12-Oct-18	CH3069	1.447657021	103.782949	T1_12	1.44774	103.78294	0818	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	2	Seen	Transect
12-Oct-18	CH3069	1.447657021	103.782949	T1_12	1.44774	103.78294	0818	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	2	Seen	Transect
12-Oct-18	CH3069	1.447657021	103.782949	T1_12	1.44774	103.78294	0818	Bird	*Yungipicus moluccensis*	Sunda Pygmy Woodpecker	1	Seen	Transect
12-Oct-18	CH3069	1.447657021	103.782949	T1_12	1.44774	103.78294	0818	Bird	*Acridotheres javanicus*	Javan Myna	1	Seen	Transect
12-Oct-18	CH3070	1.44762299	103.782846	T1_12	1.44774	103.78294	0820	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
12-Oct-18	CH3072	1.447506985	103.782654	T1_11	1.44730	103.78270	0823	Bird	*Aplonis panayensis*	Asian Glossy Starling	1	Heard	Transect
12-Oct-18	CH3072	1.447506985	103.782654	T1_11	1.44730	103.78270	0823	Bird	*Psittacula longicauda*	Long-tailed Parakeet	2	Heard	Transect
12-Oct-18	CH3073	1.447517965	103.782606	T1_11	1.44730	103.78270	0824	Bird	*Geopelia striata*	Zebra Dove	2	Seen	Transect
12-Oct-18	CH3074	1.447352003	103.782705	T1_11	1.44730	103.78270	0827	Bird	*Zosterops palpebrosus*	Oriental White-eye	7	Seen	Transect
12-Oct-18	CH3074	1.447352003	103.782705	T1_11	1.44730	103.78270	0827	Bird	*Orthotomus sutorius*	Common Tailorbird	1	Heard	Transect
12-Oct-18	CH3074	1.447352003	103.782705	T1_11	1.44730	103.78270	0827	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Heard	Transect
12-Oct-18	CH3075	1.446942966	103.782684	T1_10	1.44687	103.78258	0831	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	Transect

12-Oct-18	CH3075	1.446942966	103.782684	T1_10	1.44687	103.78258	0831	Bird	*Psittacula alexandri*	Red-breasted Parakeet	1	Heard	Transect
12-Oct-18	CH3076	1.446856968	103.782605	T1_10	1.44687	103.78258	0832	Bird	*Orthotomus atrogularis*	Dark-necked Tailorbird	1	Heard	Transect
12-Oct-18	CH3077	1.446740963	103.782613	T1_10	1.44687	103.78258	0833	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Heard	Transect
12-Oct-18	CH3077	1.446740963	103.782613	T1_10	1.44687	103.78258	0833	Bird	*Geopelia striata*	Zebra Dove	2	Heard	Transect
12-Oct-18	CH3077	1.446740963	103.782613	T1_10	1.44687	103.78258	0833	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	Transect
12-Oct-18	CH3078	1.446700981	103.782671	T1_10	1.44687	103.78258	0834	Bird	*Spilopelia chinensis*	Spotted Dove	1	Heard	Transect
12-Oct-18	CH3079	1.446563015	103.782686	T1_09	1.44647	103.78249	0837	Bird	*Copsychus sp.*	N/A	1	Heard	Transect
12-Oct-18	CH3079	1.446563015	103.782686	T1_09	1.44647	103.78249	0838	Bird	*Acridotheres javanicus*	Javan Myna	3	Seen	Transect
12-Oct-18	CH3080	1.446504006	103.782551	T1_09	1.44647	103.78249	0839	Bird	*Psittacula longicauda*	Long-tailed Parakeet	1	Seen	Transect
12-Oct-18	CH3082	1.446370985	103.782524	T1_09	1.44647	103.78249	0841	Bird	*Dicrurus paradiseus*	Greater Racket-tailed Drongo	1	Heard	Transect
12-Oct-18	CH3083	1.446294039	103.782312	T1_09	1.44647	103.78249	0841	Bird	*Geopelia striata*	Zebra Dove	1	Heard	Transect
12-Oct-18	CH3084	1.446311977	103.78232	T1_09	1.44647	103.78249	0847	Bird	*Dicrurus paradiseus*	Greater Racket-tailed Drongo	1	Seen	Transect
12-Oct-18	CH3084	1.446311977	103.78232	T1_09	1.44647	103.78249	0847	Bird	*Psittacula alexandri*	Red-breasted Parakeet	1	Seen	Transect
12-Oct-18	CH3084	1.446311977	103.78232	T1_09	1.44647	103.78249	0848	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Heard	Transect
12-Oct-18	CH3084	1.446311977	103.78232	T1_09	1.44647	103.78249	0848	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Heard	Transect
12-Oct-18	CH3085	1.446110979	103.782139	T1_08	1.44651	103.78208	0851	Bird	*Dinopium javanense*	Common Flameback	1	Heard	Transect
12-Oct-18	CH3086	1.445939988	103.781955	T1_08	1.44651	103.78208	0853	Bird	*Phylloscopus borealis*	Arctic Warbler	2	Heard	Transect
12-Oct-18	CH3086	1.445939988	103.781955	T1_08	1.44651	103.78208	0853	Bird	*Eurystomus orientalis*	Oriental Dollarbird	2	Heard	Transect
12-Oct-18	CH3086	1.445939988	103.781955	T1_08	1.44651	103.78208	0854	Bird	*Zosterops palpebrosus*	Oriental White-eye	2	Heard	Transect
12-Oct-18	CH3086	1.445939988	103.781955	T1_08	1.44651	103.78208	0854	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Heard	Transect
12-Oct-18	CH3087	1.445086962	103.781429	T1_02	1.44516	103.78145	0908	Bird	*Acridotheres javanicus*	Javan Myna	1	Seen	Transect
12-Oct-18	CH3087	1.445086962	103.781429	T1_02	1.44516	103.78145	0908	Bird	*Zosterops palpebrosus*	Oriental White-eye	1	Heard	Transect
12-Oct-18	CH3087	1.445086962	103.781429	T1_02	1.44516	103.78145	0908	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Heard	Transect
15-Oct-18	CH3088	1.452190038	103.778827	WWP			0719	Bird	*Acridotheres javanicus*	Javan Myna	2	Seen	Transect
15-Oct-18	CH3088	1.452190038	103.778827	WWP			0719	Bird	*Apodidae*	Swiftlet sp.	2	Seen	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0721	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0721	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0721	Bird	*Acridotheres javanicus*	Javan Myna	30	Seen	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0721	Bird	*Spilopelia chinensis*	Spotted Dove	4	Seen	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0724	Bird	*Orthotomus sutorius*	Common Tailorbird	1	Seen	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0724	Bird	*Ficedula zanthopygia*	Yellow-rumped Flycatcher	1	Seen	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0724	Bird	*Aplonis panayensis*	Asian Glossy Starling	10	Seen	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0724	Bird	*Dicaeum cruentatum*	Scarlet-backed Flowerpecker	1	Heard	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0724	Bird	*Corvus splendens*	House Crow	4	Heard	Transect
15-Oct-18	CH3089	1.452288022	103.778715	WWP			0724	Bird	*Eudynamys scolopaceus*	Asian Koel	1	Heard	Transect
15-Oct-18	CH3090	1.452659005	103.778721	WWP			0725	Bird	*Geopelia striata*	Zebra Dove	4	Seen	Transect
15-Oct-18	CH3092	1.45286	103.778852	WWP			0725	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	Transect
15-Oct-18	CH3093	1.45309302	103.779311	WWP			0728	Bird	*Anthreptes malacensis*	Brown-throated Sunbird	2	Seen	Transect
15-Oct-18	CH3093	1.45309302	103.779311	WWP			0728	Bird	*Rhipidura javanica*	Malaysian Pied Fantail	2	Seen	Transect
15-Oct-18	CH3093	1.45309302	103.779311	WWP			0728	Bird	*Terpsiphone incei*	Amur Paradise Flycatcher	1	Seen	Transect
15-Oct-18	CH3093	1.45309302	103.779311	WWP			0728	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
15-Oct-18	CH3093	1.45309302	103.779311	WWP			0728	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Seen	Transect
15-Oct-18	CH3093	1.45309302	103.779311	WWP			0728	Bird	*Copsychus saularis*	Oriental Magpie-Robin	1	Heard	Transect
15-Oct-18	CH3094	1.453206008	103.779433	WWP			0729	Bird	*Orthotomus ruficeps*	Ashy Tailorbird	1	Seen	Transect
15-Oct-18	CH3094	1.453206008	103.779433	WWP			0730	Bird	*Aegithina tiphia*	Common Iora	1	Seen	Transect
15-Oct-18	CH3095	1.453178013	103.779454	WWP			0731	Bird	*Zosterops palpebrosus*	Oriental White-eye	1	Seen	Transect
15-Oct-18	CH3095	1.453178013	103.779454	WWP			0732	Bird	*Anthreptes malacensis*	Brown-throated Sunbird	1	Seen	Transect
15-Oct-18	CH3095	1.453178013	103.779454	WWP			0735	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	Transect
15-Oct-18	CH3095	1.453178013	103.779454	WWP			0735	Bird	*Orthotomus ruficeps*	Ashy Tailorbird	1	Seen	Transect
15-Oct-18	CH3095	1.453178013	103.779454	WWP			0735	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	Transect
15-Oct-18	CH3096	1.453234004	103.779589	WWP			0736	Mammal	*Callosciurus notatus*	Plantain Squirrel	1	Seen	Transect
15-Oct-18	CH3096	1.453234004	103.779589	WWP			0736	Bird	*Todiramphus chloris*	Collared Kingfisher	1	Seen	Transect
15-Oct-18	CH3097	1.453603981	103.780217	WWP			0739	Bird	*Anthreptes malacensis*	Brown-throated Sunbird	1	Seen	Transect
15-Oct-18	CH3097	1.453603981	103.780217	WWP			0739	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	Transect
15-Oct-18	CH3097	1.453603981	103.780217	WWP			0739	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
15-Oct-18	CH3097	1.453603981	103.780217	WWP			0740	Butterfly	*Eurema sp.*	Grass Yellow sp.	1	Seen	Transect
15-Oct-18	CH3097	1.453603981	103.780217	WWP			0740	Bird	*Orthotomus ruficeps*	Ashy Tailorbird	2	Seen	Transect
15-Oct-18	CH3097	1.453603981	103.780217	WWP			0740	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Seen	Transect
15-Oct-18	CH3097	1.453603981	103.780217	WWP			0740	Bird	*Geopelia striata*	Zebra Dove	2	Seen	Transect
15-Oct-18	CH3098	1.45371303	103.780275	WWP			0742	Bird	*Anthreptes malacensis*	Brown-throated Sunbird	1	Seen	Transect

15-Oct-18	CH3098	1.45371303	103.780275	WWP			0742	Bird	*Lanius sp.*	Shrike sp.	1	Seen	Transect
15-Oct-18	CH3098	1.45371303	103.780275	WWP			0742	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Seen	Transect
15-Oct-18	CH3098	1.45371303	103.780275	WWP			0742	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
15-Oct-18	CH3098	1.45371303	103.780275	WWP			0742	Bird	*Hirundo tahitica*	Pacific Swallow	1	Seen	Transect
15-Oct-18	CH3099	1.453817971	103.780448	WWP			0745	Bird	*Ardea cinerea*	Grey Heron	1	Seen	Transect
15-Oct-18	CH3100	1.453983011	103.780768	WWP			0746	Bird	*Ixobrychus sinensis*	Yellow Bittern	1	Seen	Transect
15-Oct-18	CH3101	1.454204042	103.781117	WWP			0747	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Heard	Transect
15-Oct-18	CH3101	1.454204042	103.781117	WWP			0747	Bird	*Corvus splendens*	House Crow	1	Heard	Transect
15-Oct-18	CH3101	1.454204042	103.781117	WWP			0747	Bird	*Aplonis panayensis*	Asian Glossy Starling	6	Seen	Transect
15-Oct-18	CH3101	1.454204042	103.781117	WWP			0747	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	Transect
15-Oct-18	CH3102	1.454347959	103.781363	WWP			0748	Butterfly	*Eurema sp.*	Grass Yellow sp.	1	Seen	Transect
15-Oct-18	CH3103	1.454493972	103.781606	WWP			0749	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	Transect
15-Oct-18	CH3103	1.454493972	103.781606	WWP			0749	Bird	*Apodidae*	Swiftlet sp.	2	Seen	Transect
15-Oct-18	CH3104	1.454724977	103.781989	WWP			0750	Bird	*Aegithina tiphia*	Common Iora	1	Heard	Transect
15-Oct-18	CH3105	1.454775017	103.782226	WWP			0752	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Heard	Transect
15-Oct-18	CH3106	1.454703016	103.782402	WWP			0753	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	Transect
15-Oct-18	CH3106	1.454703016	103.782402	WWP			0754	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Heard	Transect
15-Oct-18	CH3106	1.454703016	103.782402	WWP			0755	Bird	*Agropsar sturninus*	Daurian Starling	20	Seen	Transect
15-Oct-18	CH3106	1.454703016	103.782402	WWP			0755	Bird	*Acridotheres javanicus*	Javan Myna	2	Seen	Transect
15-Oct-18	CH3106	1.454703016	103.782402	WWP			0755	Bird	*Macronus gularis*	Pin-striped Tit-babbler	1	Heard	Transect
15-Oct-18	CH3106	1.454703016	103.782402	WWP			0755	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Heard	Transect
15-Oct-18	CH3107	1.454701005	103.782523	WWP			0755	Bird	*Micropternus brachyurus*	Rufous Woodpecker	1	Seen	Transect
15-Oct-18	CH3107	1.454701005	103.782523	WWP			0756	Bird	*Merops philippinus*	Blue-tailed Bee-eater	1	Seen	Transect
15-Oct-18	CH3108	1.454533031	103.782523	WWP			0758	Bird	*Psittacula alexandri*	Red-breasted Parakeet	1	Heard	Transect
15-Oct-18	CH3108	1.454533031	103.782523	WWP			0758	Bird	*Acridotheres javanicus*	Javan Myna	6	Seen	Transect
15-Oct-18	CH3108	1.454533031	103.782523	WWP			0758	Bird	*Treron vernans*	Pink-necked Green Pigeon	3	Seen	Transect
15-Oct-18	CH3108	1.454533031	103.782523	WWP			0758	Bird	*Dinopium javanense*	Common Flameback	1	Heard	Transect
15-Oct-18	CH3108	1.454533031	103.782523	WWP			0758	Bird	*Anthreptes malacensis*	Brown-throated Sunbird	1	Seen	Transect
15-Oct-18	CH3108	1.454533031	103.782523	WWP			0759	Butterfly	*Delias hyparete metarete*	Painted Jezebel	1	Seen	Transect
15-Oct-18	CH3109	1.454563038	103.782632	WWP			0800	Bird	*Copsychus saularis*	Oriental Magpie-Robin	1	Heard	Transect
15-Oct-18	CH3109	1.454563038	103.782632	WWP			0800	Bird	*Orthotomus atrogularis*	Dark-necked Tailorbird	1	Heard	Transect
15-Oct-18	CH3109	1.454563038	103.782632	WWP			0800	Butterfly	*Mycalesis sp.*	Bush Brown sp.	1	Seen	Transect
15-Oct-18	CH3109	1.454563038	103.782632	WWP			0800	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Heard	Transect
15-Oct-18	CH3109	1.454563038	103.782632	WWP			0800	Butterfly	*Troides helena cerberus*	Common Birdwing	1	Seen	Transect
15-Oct-18	CH3110	1.454321975	103.782296	WWP			0802	Bird	*Spilopelia chinensis*	Spotted Dove	1	Heard	Transect
15-Oct-18	CH3111	1.453998014	103.782426	WWP			0803	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	Transect
15-Oct-18	CH3111	1.453998014	103.782426	WWP			0803	Bird	*Geopelia striata*	Zebra Dove	1	Heard	Transect
15-Oct-18	CH3111	1.453998014	103.782426	WWP			0803	Bird	*Psittacula alexandri*	Red-breasted Parakeet	1	Heard	Transect
15-Oct-18	CH3112	1.453800034	103.782462	WWP			0804	Bird	*Aegithina tiphia*	Common Iora	1	Seen	Transect
15-Oct-18	CH3112	1.453800034	103.782462	WWP			0804	Bird	*Apodidae*	Swiftlet sp.	10	Seen	Transect
15-Oct-18	CH3113	1.453654021	103.782208	WWP			0806	Odonate	*Pantala flavescens*	Wandering Glider	1	Seen	Transect
15-Oct-18	CH3113	1.453654021	103.782208	WWP			0806	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Seen	Transect
15-Oct-18	CH3114	1.453629965	103.782539	WWP			0807	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	3	Seen	Transect
15-Oct-18	CH3115	1.453522006	103.782547	WWP			0807	Bird	*Hirundo rustica*	Barn Swallow	1	Seen	Transect
15-Oct-18	CH3116	1.453393009	103.782556	WWP			0808	Bird	*Lanius cristatus*	Brown Shrike	1	Seen	Transect
15-Oct-18	CH3116	1.453393009	103.782556	WWP			0808	Mammal	*Callosciurus notatus*	Plantain Squirrel	1	Seen	Transect
15-Oct-18	CH3116	1.453393009	103.782556	WWP			0808	Butterfly	*Delias hyparete metarete*	Painted Jezebel	1	Seen	Transect
15-Oct-18	CH3117	1.453043986	103.782727	WWP			0810	Bird	*Dicaeum cruentatum*	Scarlet-backed Flowerpecker	1	Heard	Transect
15-Oct-18	CH3117	1.453043986	103.782727	WWP			0810	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	2	Seen	Transect
15-Oct-18	CH3117	1.453043986	103.782727	WWP			0810	Bird	*Haliaeetus leucogaster*	White-bellied Sea Eagle	1	Heard	Transect
15-Oct-18	CH3118	1.453412035	103.782394	WWP			0814	Butterfly	*Anthene emolus goberus*	Ciliate Blue	4	Seen	Transect
15-Oct-18	CH3119	1.453474984	103.782058	WWP			0814	Bird	*Hirundo rustica*	Barn Swallow	1	Seen	Transect
15-Oct-18	CH3119	1.453474984	103.782058	WWP			0816	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	Transect
15-Oct-18	CH3119	1.453474984	103.782058	WWP			0817	Butterfly	*Hypolycaena erylus teatus*	Common Tit	1	Seen	Transect
15-Oct-18	CH3119	1.453474984	103.782058	WWP			0817	Butterfly	*Anthene emolus goberus*	Ciliate Blue	4	Seen	Transect
15-Oct-18	CH3119	1.453474984	103.782058	WWP			0817	Bird	*Aplonis panayensis*	Asian Glossy Starling	1	Seen	Transect
15-Oct-18	CH3119	1.453474984	103.782058	WWP			0817	Butterfly	*Delias hyparete metarete*	Painted Jezebel	1	Seen	Transect
15-Oct-18	CH3120	1.453264011	103.7818	WWP			0821	Butterfly	*Anthene emolus goberus*	Ciliate Blue	4	Seen	Transect
15-Oct-18	CH3120	1.453264011	103.7818	WWP			0821	Odonate	*Pantala flavescens*	Wandering Glider	1	Seen	Transect
15-Oct-18	CH3120	1.453264011	103.7818	WWP			0821	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	2	Seen	Transect

15-Oct-18	CH3120	1.453264011	103.7818	WWP			0821	Bird	*Ficedula zanthopygia*	Yellow-rumped Flycatcher	1	Seen	Transect
15-Oct-18	CH3121	1.453137025	103.781421	WWP			0824	Butterfly	*Junonia hedonia ida*	Chocolate Pansy	2	Seen	Transect
15-Oct-18	CH3121	1.453137025	103.781421	WWP			0824	Bird	*Orthotomus atrogularis*	Dark-necked Tailorbird	1	Seen	Transect
15-Oct-18	CH3121	1.453137025	103.781421	WWP			0824	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
15-Oct-18	CH3121	1.453137025	103.781421	WWP			0824	Bird	*Orthotomus sutorius*	Common Tailorbird	1	Seen	Transect
15-Oct-18	CH3121	1.453137025	103.781421	WWP			0824	Bird	*Corvus splendens*	House Crow	1	Seen	Transect
15-Oct-18	CH3121	1.453137025	103.781421	WWP			0824	Bird	*Oriolus chinensis*	Black-naped Oriole	1	Seen	Transect
15-Oct-18	CH3122	1.453094026	103.781135	WWP			0825	Mammal	*Callosciurus notatus*	Plantain Squirrel	1	Seen	Transect
15-Oct-18	CH3122	1.453094026	103.781135	WWP			0825	Bird	*Aplonis panayensis*	Asian Glossy Starling	2	Seen	Transect
15-Oct-18	CH3123	1.453106012	103.780873	WWP			0825	Bird	*Acridotheres javanicus*	Javan Myna	1	Seen	Transect
15-Oct-18	CH3124	1.452759001	103.780502	WWP			0827	Bird	*Todiramphus chloris*	Collared Kingfisher	1	Seen	Transect
15-Oct-18	CH3125	1.452584993	103.780349	WWP			0829	Butterfly	*Anthene emolus goberus*	Ciliate Blue	2	Seen	Transect
15-Oct-18	CH3125	1.452584993	103.780349	WWP			0829	Bird	*Haliaeetus leucogaster*	White-bellied Sea Eagle	1	Seen	Transect
15-Oct-18	CH3125	1.452584993	103.780349	WWP			0830	Bird	*Hirundo rustica*	Barn Swallow	1	Seen	Transect
15-Oct-18	CH3125	1.452584993	103.780349	WWP			0830	Bird	*Anthreptes malacensis*	Brown-throated Sunbird	1	Heard	Transect
15-Oct-18	CH3126	1.452029021	103.780093	WWP			0832	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Seen	Transect
15-Oct-18	CH3127	1.451948974	103.779623	WWP			0833	Bird	*Anthreptes malacensis*	Brown-throated Sunbird	1	Seen	Transect
15-Oct-18	CH3127	1.451948974	103.779623	WWP			0833	Odonate	*Pantala flavescens*	Wandering Glider	1	Seen	Transect
15-Oct-18	CH3127	1.451948974	103.779623	WWP			0833	Bird	*Geopelia striata*	Zebra Dove	1	Heard	Transect
15-Oct-18	CH3128	1.451314967	103.777715	T2_23	1.45101	103.77741	0837	Bird	*Acridotheres javanicus*	Javan Myna	3	Seen	Transect
15-Oct-18	CH3128	1.451314967	103.777715	T2_23	1.45101	103.77741	0837	Bird	*Aplonis panayensis*	Asian Glossy Starling	5	Seen	Transect
15-Oct-18	CH3129	1.450960999	103.777472	T2_23	1.45101	103.77741	0839	Bird	*Cinnyris jugularis*	Olive-backed Sunbird	1	Seen	Transect
15-Oct-18	CH3130	1.450732006	103.777524	T2_22	1.45066	103.77775	0841	Bird	*Amaurornis phoenicurus*	White-breasted Waterhen	1	Seen	Transect
15-Oct-18	CH3131	1.451255037	103.779024	T2_19	1.45077	103.77945	0847	Bird	*Eudynamys scolopaceus*	Asian Koel	1	Seen	Transect
15-Oct-18	CH3132	1.450685989	103.778413	T2_21	1.45033	103.77809	0848	Bird	*Psittacula longicauda*	Long-tailed Parakeet	1	Seen	Transect
15-Oct-18	CH3132	1.450685989	103.778413	T2_21	1.45033	103.77809	0849	Bird	*Apodidae*	Swiftlet sp.	20	Seen	Transect
15-Oct-18	CH3133	1.450691018	103.779375	T2_19	1.45077	103.77945	0903	Bird	*Lanius sp.*	Shrike sp.	1	Heard	Transect
15-Oct-18	CH3134	1.450255997	103.779313	T2_18	1.45035	103.77929	0905	Reptile	*Bronchocela cristatella*	Green Crested Lizard	1	Seen	Incidental
15-Oct-18	CH3134	1.450255997	103.779313	T2_18	1.45035	103.77929	0905	Bird	*Psittacula longicauda*	Long-tailed Parakeet	5	Seen	Transect
15-Oct-18	CH3135	1.449822988	103.779198	T2_17	1.44985	103.77928	0908	Bird	*Spilopelia chinensis*	Spotted Dove	1	Seen	Transect
15-Oct-18	CH3135	1.449822988	103.779198	T2_17	1.44985	103.77928	0908	Bird	*Zosterops palpebrosus*	Oriental White-eye	1	Seen	Transect
15-Oct-18	CH3135	1.449822988	103.779198	T2_17	1.44985	103.77928	0908	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Seen	Transect
15-Oct-18	CH3135	1.449822988	103.779198	T2_17	1.44985	103.77928	0908	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	5	Seen	Transect
15-Oct-18	CH3136	1.449768003	103.778994	T2_16	1.44975	103.77893	0909	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Seen	Transect
15-Oct-18	CH3136	1.449768003	103.778994	T2_16	1.44975	103.77893	0909	Bird	*Orthotomus atrogularis*	Dark-necked Tailorbird	1	Heard	Transect
15-Oct-18	CH3137	1.449336	103.778266	T2_14	1.44934	103.77828	0915	Bird	*Aplonis panayensis*	Asian Glossy Starling	6	Seen	Transect
15-Oct-18	CH3138	1.447674036	103.779027	T2_10	1.44767	103.77902	0920	Bird	*Phylloscopus borealis*	Arctic Warbler	1	Seen	Transect
15-Oct-18	CH3138	1.447674036	103.779027	T2_10	1.44767	103.77902	0920	Bird	*Macronus gularis*	Pin-striped Tit-babbler	4	Seen	Transect
15-Oct-18	CH3139	1.447426016	103.779119	T2_09	1.44722	103.77916	0922	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
15-Oct-18	CH3140	1.446820004	103.779321	T2_08	1.44677	103.77931	0925	Bird	*Muscicapa dauurica*	Asian Brown Flycatcher	1	Seen	Transect
15-Oct-18	CH3141	1.446466036	103.779519	T2_07	1.44648	103.77960	0925	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
15-Oct-18	CH3142	1.446637027	103.779971	T2_06	1.44657	103.78004	0926	Bird	*Eurystomus orientalis*	Oriental Dollarbird	1	Seen	Transect
15-Oct-18	CH3143	1.446317006	103.780136	T2_05	1.44614	103.78022	0928	Bird	*Nisaetus cirrhatus*	Changeable Hawk-Eagle	2	Seen	Transect
15-Oct-18	CH3144	1.445401032	103.780611	T2_03	1.44531	103.78065	0930	Bird	*Pycnonotus goiavier*	Yellow-vented Bulbul	1	Seen	Transect
15-Oct-18	CH3145	1.445033988	103.780761	T2_02	1.44480	103.78087	0931	Bird	*Todiramphus chloris*	White-throated Kingfisher	1	Seen	Transect
17-Oct-18	457	1.453589983	103.780079	WWP			1951	Mammal	*Rattus sp.*	Rat sp.	1	Seen	Transect
17-Oct-18	459	1.454507969	103.781652	WWP			1958	Mammal	*Cynopterus brachyotis*	Lesser Dog-faced Fruit Bat	1	Seen	Transect
17-Oct-18	460	1.454674015	103.781945	WWP			2000	Mammal	*Cynopterus brachyotis*	Lesser Dog-faced Fruit Bat	1	Seen	Transect
17-Oct-18	461	1.454753978	103.782037	WWP			2001	Reptile	*Gekko monarchus*	Spotted House Gecko	1	Heard	Transect
17-Oct-18	463	1.454056017	103.782733	WWP			2004	Bird	*Caprimulgus sp.*	Nightjar sp.	1	Seen	Transect
17-Oct-18	464	1.453787964	103.782711	WWP			2006	Bird	*Caprimulgus sp.*	Nightjar sp.	1	Seen	Transect
17-Oct-18	465	1.453545978	103.782523	WWP			2007	Mammal	*Cynopterus brachyotis*	Lesser Dog-faced Fruit Bat	1	Seen	Transect
17-Oct-18	466	1.453248002	103.782593	WWP			2008	Bird	*Caprimulgus sp.*	Nightjar sp.	1	Heard	Transect
17-Oct-18	467	1.453254037	103.781834	WWP			2014	Bird	*Lanius cristatus*	Brown Shrike	1	Seen	Transect
17-Oct-18	468	1.453153035	103.781588	WWP			2015	Bird	*Caprimulgus sp.*	Nightjar sp.	1	Seen	Transect
17-Oct-18	469	1.453115987	103.781025	WWP			2016	Mammal	*Cynopterus brachyotis*	Lesser Dog-faced Fruit Bat	1	Seen	Transect
17-Oct-18	470	1.453138031	103.780921	WWP			2018	Reptile	*Lycodon capucinus*	House Wolf Snake	1	Seen	Transect
17-Oct-18	470	1.453138031	103.780921	WWP			2018	Mammal	*Cynopterus brachyotis*	Lesser Dog-faced Fruit Bat	1	Seen	Transect
17-Oct-18	470	1.453138031	103.780921	WWP			2018	Bird	*Treron vernans*	Pink-necked Green Pigeon	1	Seen	Transect
17-Oct-18	471	1.452092975	103.779534	WWP			2024	Reptile	*Hemidactylus frenatus*	Spiny-tailed House Gecko	1	Seen	Transect

17-Oct-18	472	1.452145027	103.779491	WWP			2024	Reptile	*Hemidactylus frenatus*	Spiny-tailed House Gecko	1	Seen	Transect

Appendix H

Camera Trap Location and Data

CAMERA TRAP LOCATION

Camera trap number	Vegetation type	latitude	longitude	Date of deployment	Date of retrieval	Number of trap-nights
WL01	Abandoned-land forest	1.450444004	103.776708	15-May-18	16-Jul-18	62
WL02	Mangrove	1.450000014	103.779533	15-May-18	14-Aug-18	64
WL03	Forest beside mangrove	1.449697008	103.778617	15-May-18	16-Jul-18	51
WL04	Swampy area beside secondary forest	1.446877001	103.779125	15-May-18	14-Aug-18	54
WL05	Dillenia patch	1.445786012	103.779562	15-May-18	16-Jul-18	62
WL06	Abandoned-land forest	1.445670007	103.781236	15-May-18	16-Jul-18	62
WL07	Stream	1.446863003	103.780639	15-May-18	16-Jul-18	62
WL08	Abandoned-land forest; burrow	1.44662898	103.781511	15-May-18	16-Jul-18	62
WL09	Abandoned-land forest	1.447597006	103.782669	15-May-18	14-Aug-18	41
WL10	Forest edge beside scrubland	1.448526978	103.783152	15-May-18	16-Jul-18	62

CAMERA TRAP DATA

CTNumber	Lat	Long	SamplingEvent (date of maintenance)	Date of detection	Time of detection	Date_Time	Filename	Genus	sp.	Species	ber of individ	Remarks	Behaviour
WL09	1.447597006	103.782669	2018-05-24	2018-05-15	14:57:00	5/15/2018 14:57:00	IMG_0004.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-15	16:02:00	5/15/2018 16:02:00	IMG_0005.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-15	17:37:00	5/15/2018 17:37:00	IMG_0006.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-05-24	2018-05-15	17:40:00	5/15/2018 17:40:00	IMG_0008.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-15	18:12:00	5/15/2018 18:12:00	IMG_0004.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-15	18:41:00	5/15/2018 18:41:00	IMG_0007.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-15	18:42:00	5/15/2018 18:42:00	IMG_0008.AVI	Rallina	fasciata	Rallina fasciata	1		
WL06	1.445670007	103.781236	2018-05-24	2018-05-15	18:43:00	5/15/2018 18:43:00	IMG_0004.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-15	18:46:00	5/15/2018 18:46:00	IMG_0009.AVI	Rallina	fasciata	Rallina fasciata	1		
WL01	1.450444004	103.776708	2018-05-24	2018-05-16	12:59:00	5/16/2018 12:59:00	IMG_0025.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-05-24	2018-05-17	9:30:00	5/17/2018 9:30:00	IMG_0003.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL02	1.450000014	103.779533	2018-05-23	2018-05-17	10:09:00	5/17/2018 10:09:00	IMG_0045.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-17	11:34:00	5/17/2018 11:34:00	IMG_0078.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-17	11:34:00	5/17/2018 11:34:00	IMG_0079.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-17	12:24:00	5/17/2018 12:24:00	IMG_0087.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL07	1.446863003	103.780639	2018-05-24	2018-05-17	15:00:00	5/17/2018 15:00:00	IMG_0010.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL10	1.448526978	103.783152	2018-05-24	2018-05-17	17:34:00	5/17/2018 17:34:00	IMG_0005.AVI	Callosciurus	notatus	Callosciurus notatus	2		
WL10	1.448526978	103.783152	2018-05-24	2018-05-17	18:16:00	5/17/2018 18:16:00	IMG_0006.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-05-24	2018-05-18	9:45:00	5/18/2018 9:45:00	IMG_0004.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	10:26:00	5/18/2018 10:26:00	IMG_0113.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL09	1.447597006	103.782669	2018-05-24	2018-05-18	11:03:00	5/18/2018 11:03:00	IMG_0013.AVI	Rallina	fasciata	Rallina fasciata	1		
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:12:00	5/18/2018 11:12:00	IMG_0134.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:13:00	5/18/2018 11:13:00	IMG_0135.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:14:00	5/18/2018 11:14:00	IMG_0137.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:15:00	5/18/2018 11:15:00	IMG_0138.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:15:00	5/18/2018 11:15:00	IMG_0139.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:16:00	5/18/2018 11:16:00	IMG_0140.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:17:00	5/18/2018 11:17:00	IMG_0141.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:19:00	5/18/2018 11:19:00	IMG_0143.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:20:00	5/18/2018 11:20:00	IMG_0144.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:21:00	5/18/2018 11:21:00	IMG_0146.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL08	1.44662898	103.781511	2018-05-24	2018-05-18	11:26:00	5/18/2018 11:26:00	IMG_0007.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:54:00	5/18/2018 11:54:00	IMG_0195.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:55:00	5/18/2018 11:55:00	IMG_0196.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	11:57:00	5/18/2018 11:57:00	IMG_0197.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL08	1.44662898	103.781511	2018-05-24	2018-05-18	11:57:00	5/18/2018 11:57:00	IMG_0008.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	12:10:00	5/18/2018 12:10:00	IMG_0200.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	12:48:00	5/18/2018 12:48:00	IMG_0219.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL09	1.447597006	103.782669	2018-05-24	2018-05-18	12:53:00	5/18/2018 12:53:00	IMG_0014.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	12:55:00	5/18/2018 12:55:00	IMG_0223.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL06	1.445670007	103.781236	2018-05-24	2018-05-18	12:55:00	5/18/2018 12:55:00	IMG_0007.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	12:56:00	5/18/2018 12:56:00	IMG_0224.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	12:56:00	5/18/2018 12:56:00	IMG_0225.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	12:56:00	5/18/2018 12:56:00	IMG_0226.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	13:01:00	5/18/2018 13:01:00	IMG_0227.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	13:02:00	5/18/2018 13:02:00	IMG_0228.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	13:02:00	5/18/2018 13:02:00	IMG_0229.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	14:55:00	5/18/2018 14:55:00	IMG_0241.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	14:56:00	5/18/2018 14:56:00	IMG_0242.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	14:57:00	5/18/2018 14:57:00	IMG_0243.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	14:59:00	5/18/2018 14:59:00	IMG_0244.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	15:00:00	5/18/2018 15:00:00	IMG_0245.AVI	Todiramphus	chloris	Todiramphus chloris	2	outside nest	mating pair?
WL02	1.450000014	103.779533	2018-05-23	2018-05-18	15:00:00	5/18/2018 15:00:00	IMG_0246.AVI	Todiramphus	chloris	Todiramphus chloris	1	outside nest	
WL09	1.447597006	103.782669	2018-05-24	2018-05-18	15:21:00	5/18/2018 15:21:00	IMG_0015.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-18	17:49:00	5/18/2018 17:49:00	IMG_0016.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-18	7:30:00	5/19/2018 7:30:00	IMG_0005.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-18	7:39:00	5/19/2018 7:39:00	IMG_0006.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-19	9:48:00	5/19/2018 9:48:00	IMG_0017.AVI	Tupaia	glis	Tupaia glis	1	With Rallina fasicata	
WL09	1.447597006	103.782669	2018-05-24	2018-05-19	9:48:00	5/19/2018 9:48:00	IMG_0017.AVI	Rallina	fasciata	Rallina fasciata	1		Aggression against Tupaia glis
WL09	1.447597006	103.782669	2018-05-24	2018-05-19	9:58:00	5/19/2018 9:58:00	IMG_0018.AVI	Rallina	fasciata	Rallina fasciata	1		

WL09	1.447597006	103.782669	2018-05-24	2018-05-19	12:01:00	5/19/2018 12:01:00	IMG_0019.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-19	14:27:00	5/19/2018 14:27:00	IMG_0020.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-19	1900-01-00	43239.69861	IMG_0021.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-05-24	2018-05-19	17:04:00	5/19/2018 17:04:00	IMG_0014.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-19	17:48:00	5/19/2018 17:48:00	IMG_0022.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-19	18:03:00	5/19/2018 18:03:00	IMG_0023.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-19	18:28:00	5/19/2018 18:28:00	IMG_0024.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-20	7:12:00	5/20/2018 7:12:00	IMG_0025.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-20	8:29:00	5/20/2018 8:29:00	IMG_0026.AVI	Tupaia	glis	Tupaia glis	2		
WL07	1.446863003	103.780639	2018-05-24	2018-05-20	10:40:00	5/20/2018 10:40:00	IMG_0015.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-20	13:06:00	5/20/2018 13:06:00	IMG_0011.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL01	1.450444004	103.776708	2018-05-24	2018-05-20	13:33:00	5/20/2018 13:33:00	IMG_0028.AVI	Chalcophaps	indica	Chalcophaps indica	1	with Sundasciurus tenuis	
WL01	1.450444004	103.776708	2018-05-24	2018-05-20	13:33:00	5/20/2018 13:33:00	IMG_0028.AVI	Callosciurus	notatus	Callosciurus notatus	1	with Chalcophaps indica	
WL09	1.447597006	103.782669	2018-05-24	2018-05-20	13:50:00	5/20/2018 13:50:00	IMG_0027.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-05-24	2018-05-20	15:57:00	5/20/2018 15:57:00	IMG_0029.AVI	Callosciurus	notatus	Callosciurus notatus	2		
WL09	1.447597006	103.782669	2018-05-24	2018-05-20	17:58:00	5/20/2018 17:58:00	IMG_0028.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-20	18:53:00	5/20/2018 18:53:00	IMG_0029.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	4:00:00	5/21/2018 4:00:00	IMG_0030.AVI	Paradoxurus	hermaphroditus	Paradoxurus hermaphroditus	1		
WL06	1.445670007	103.781236	2018-05-24	2018-05-21	6:26:00	5/21/2018 6:26:00	IMG_0008.AVI	Paradoxurus	hermaphroditus	Paradoxurus hermaphroditus	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	7:20 AM	5/21/2018 7:20:00	IMG_0031.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	7:26:00	5/21/2018 7:26:00	IMG_0032.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	7:41:00	5/21/2018 7:41:00	IMG_0033.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	7:42:00	5/21/2018 7:42:00	IMG_0034.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-20	7:44:00	5/21/2018 7:44:00	IMG_0010.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	7:44:00	5/21/2018 7:44:00	IMG_0035.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	7:51:00	5/21/2018 7:51:00	IMG_0036.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	7:53:00	5/21/2018 7:53:00	IMG_0037.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-21	10:18:00	5/21/2018 10:18:00	IMG_0012.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	11:51:00	5/21/2018 11:51:00	IMG_0040.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	12:41:00	5/21/2018 12:41:00	IMG_0041.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-05-24	2018-05-21	13:46:00	5/21/2018 13:46:00	IMG_0016.AVI	Pycnonotus	goiavier	Pycnonotus goiavier	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-21	14:00:00	5/21/2018 14:00:00	IMG_0013.AVI	Geopelia	striata	Geopelia striata	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-21	14:19:00	5/21/2018 14:19:00	IMG_0014.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	14:32:00	5/21/2018 14:32:00	IMG_0042.AVI	Geopelia	striata	Geopelia striata	1		
WL07	1.446863003	103.780639	2018-05-24	2018-05-21	14:51:00	5/21/2018 14:51:00	IMG_0017.AVI	Pycnonotus	goiavier	Pycnonotus goiavier	1		
WL07	1.446863003	103.780639	2018-05-24	2018-05-21	15:40:00	5/21/2018 15:40:00	IMG_0018.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	15:43:00	5/21/2018 15:43:00	IMG_0043.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	15:44:00	5/21/2018 15:44:00	IMG_0044.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	15:50:00	5/21/2018 15:50:00	IMG_0045.AVI	Chalcophaps	indica	Chalcophaps indica	1	with Geopelia striata	
WL09	1.447597006	103.782669	2018-05-24	2018-05-21	15:50:00	5/21/2018 15:50:00	IMG_0045.AVI	Geopelia	striata	Geopelia striata	1	with Chalcophaps indica	
WL07	1.446863003	103.780639	2018-05-24	2018-05-21	18:56:00	5/21/2018 18:56:00	IMG_0019.AVI	Rallina	fasciata	Rallina fasciata	2		
WL09	1.447597006	103.782669	2018-05-24	2018-05-22	8:45:00	5/22/2018 8:45:00	IMG_0046.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-22	16:03:00	5/22/2018 16:03:00	IMG_0047.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-22	18:26:00	5/22/2018 18:26:00	IMG_0048.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-22	18:46:00	5/22/2018 18:46:00	IMG_0015.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-23	0:49:00	5/23/2018 0:49:00	IMG_0049.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-23	7:31:00	5/23/2018 7:31:00	IMG_0050.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-23	8:44:00	5/23/2018 8:44:00	IMG_0051.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-05-24	2018-05-23	18:18:00	5/23/2018 18:18:00	IMG_0016.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-24	14:42:00	5/24/2018 14:42:00	IMG_0052.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-24	14:46:00	5/24/2018 14:46:00	IMG_0053.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-05-24	2018-05-24	14:47:00	5/24/2018 14:47:00	IMG_0054.AVI	Tupaia	glis	Tupaia glis	2		
WL09	1.447597006	103.782669	2018-05-24	2018-05-24	14:48:00	5/24/2018 14:48:00	IMG_0055.AVI	Tupaia	glis	Tupaia glis	1		
WL02	1.450000014	103.779533	2018-06-20	2018-05-24	11:33:00	5/24/2018 11:33:00	IMG_0098.AVI	unid	sp.	unid sp.	1	bird	
WL02	1.450000014	103.779533	2018-06-20	2018-05-24	11:48:00	5/24/2018 11:48:00	IMG_0117.AVI	Varanus	sp.	Varanus sp.	1		
WL02	1.450000014	103.779533	2018-06-20	2018-05-24	11:48:00	5/24/2018 11:48:00	IMG_0118.AVI	Varanus	sp.	Varanus sp.	1		
WL03	1.449697008	103.778617	2018-06-20	2018-05-25	9:28:00	5/25/2018 9:28:00	IMG_0001.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-05-26	10:05:00	5/26/2018 10:05:00	IMG_0002.AVI	Tupaia	glis	Tupaia glis	1		
WL03	1.449697008	103.778617	2018-06-20	2018-05-29	12:49:00	5/29/2018 12:49:00	IMG_0003.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-05-30	15:01:00	5/30/2018 15:01:00	IMG_0006.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-03	11:10:00	6/3/2018 11:10:00	IMG_0007.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-05	12:35:00	6/5/2018 12:35:00	IMG_0008.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-06	10:46:00	6/6/2018 10:46:00	IMG_0009.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-08	11:55:00	6/8/2018 11:55:00	IMG_0010.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-08	15:31:00	6/8/2018 15:31:00	IMG_0011.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-11	11:25:00	6/11/2018 11:25:00	IMG_0012.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-11	11:28:00	6/11/2018 11:28:00	IMG_0013.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-12	9:44:00	6/12/2018 9:44:00	IMG_0014.AVI	Tupaia	glis	Tupaia glis	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-12	13:14:00	6/12/2018 13:14:00	IMG_0015.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-13	10:35:00	6/13/2018 10:35:00	IMG_0016.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-16	8:54:00	6/16/2018 8:54:00	IMG_0017.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-18	14:20:00	6/18/2018 14:20:00	IMG_0018.AVI	Tupaia	glis	Tupaia glis	1		
WL03	1.449697008	103.778617	2018-06-20	2018-06-19	12:52:00	6/19/2018 12:52:00	IMG_0019.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-06-20	2018-05-30	9:51:00	5/30/2018 9:51:00	IMG_0004.AVI	Picus	vittatus	Picus vittatus	1		
WL05	1.445786012	103.779562	2018-06-20	2018-06-08	17:17:00	6/8/2018 17:17:00	IMG_0008.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-06-20	2018-06-08	17:18:00	6/8/2018 17:18:00	IMG_0009.AVI	Macaca	fascicularis	Macaca fascicularis	1		

WL01	1.450444004	103.776708	2018-06-22	2018-06-16	16:22:00	6/16/2018 16:22:00	IMG_0014.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL01	1.450444004	103.776708	2018-06-22	2018-06-11	18:36:00	6/11/2018 18:36:00	IMG_0012.AVI	Rattus	sp.	Rattus sp.	1		
WL01	1.450444004	103.776708	2018-06-22	2018-05-28	11:00:00	5/28/2018 11:00:00	IMG_0008.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL01	1.450444004	103.776708	2018-06-22	2018-05-26	6:50:00	5/26/2018 6:50:00	IMG_0007.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-06-22	2018-05-29	10:41:00	5/29/2018 10:41:00	IMG_0009.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-06-22	2018-06-06	17:56:00	6/6/2018 17:56:00	IMG_0011.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-06-22	2018-06-16	7:02:00	6/16/2018 7:02:00	IMG_0013.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-06-22	2018-06-20	6:50:00	6/20/2018 6:50:00	IMG_0015.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-06-22	2018-06-22	9:00:00	6/22/2018 9:00:00	IMG_0016.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-05-26	6:53:00	5/26/2018 6:53:00	IMG_0002.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-05-27	6:49:00	5/27/2018 6:49:00	IMG_0004.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-05-28	7:09:00	5/28/2018 7:09:00	IMG_0005.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-05-29	7:01:00	5/29/2018 7:01:00	IMG_0006.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-05-29	7:03:00	5/29/2018 7:03:00	IMG_0007.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-05-30	6:51:00	5/30/2018 6:51:00	IMG_0008.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-05-31	7:07:00	5/31/2018 7:07:00	IMG_0009.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-01	7:47:00	6/1/2018 7:47:00	IMG_0010.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-02	7:09:00	6/2/2018 7:09:00	IMG_0012.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-04	14:45:00	6/4/2018 14:45:00	IMG_0013.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-08	7:09:00	6/8/2018 7:09:00	IMG_0017.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-11	18:36:00	6/11/2018 18:36:00	IMG_0019.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-13	7:39:00	6/13/2018 7:39:00	IMG_0021.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-21	19:02:00	6/21/2018 19:02:00	IMG_0026.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-17	12:30:00	6/17/2018 12:30:00	IMG_0024.AVI	Todiramphus	chloris	Todiramphus chloris	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-14	11:41:00	6/14/2018 11:41:00	IMG_0023.AVI	Spilopelia	chinensis	Spilopelia chinensis	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-14	6:54:00	6/14/2018 6:54:00	IMG_0022.AVI	Rallina	fasciata	Rallina fasciata	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-18	18:58:00	6/18/2018 18:58:00	IMG_0025.AVI	Rallina	fasciata	Rallina fasciata	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-01	17:00:00	6/1/2018 17:00:00	IMG_0011.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-05	11:43:00	6/5/2018 11:43:00	IMG_0014.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-10	8:27:00	6/10/2018 8:27:00	IMG_0018.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL06	1.445670007	103.781236	2018-06-22	2018-05-26	13:33:00	5/26/2018 13:33:00	IMG_0003.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL06	1.445670007	103.781236	2018-06-22	2018-06-06	13:37:00	6/6/2018 13:37:00	IMG_0016.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL10	1.448526978	103.783152	2018-06-22	2018-06-20	18:17:00	6/20/2018 18:17:00	IMG_0048.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL10	1.448526978	103.783152	2018-06-22	2018-05-31	18:38:00	5/31/2018 18:38:00	IMG_0017.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL10	1.448526978	103.783152	2018-06-22	2018-06-11	7:29:00	6/11/2018 7:29:00	IMG_0025.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL10	1.448526978	103.783152	2018-06-22	2018-06-12	18:00:00	6/12/2018 18:00:00	IMG_0034.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL10	1.448526978	103.783152	2018-06-22	2018-06-13	11:12:00	6/13/2018 11:12:00	IMG_0035.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL10	1.448526978	103.783152	2018-06-22	2018-05-31	18:59:00	5/31/2018 18:59:00	IMG_0016.AVI	Tupaia	glis	Tupaia glis	1		
WL10	1.448526978	103.783152	2018-06-22	2018-06-16	16:33:00	6/16/2018 16:33:00	IMG_0045.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL10	1.448526978	103.783152	2018-06-22	2018-06-18	11:35:00	6/18/2018 11:35:00	IMG_0047.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL07	1.446863003	103.780639	2018-06-22	2018-05-26	14:06:00	5/26/2018 14:06:00	IMG_0019.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1	with Varanus salvator	
WL07	1.446863003	103.780639	2018-06-22	2018-05-27	7:43:00	5/27/2018 7:43:00	IMG_0021.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-27	15:30:00	5/27/2018 15:30:00	IMG_0026.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-27	17:46:00	5/27/2018 17:46:00	IMG_0027.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-28	15:31:00	5/28/2018 15:31:00	IMG_0028.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-02	14:01:00	6/2/2018 14:01:00	IMG_0036.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-02	14:10:00	6/2/2018 14:10:00	IMG_0037.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	8:45:00	6/3/2018 8:45:00	IMG_0039.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	2		chasing
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	10:21:00	6/3/2018 10:21:00	IMG_0040.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	14:20:00	6/3/2018 14:20:00	IMG_0044.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	10:28:00	6/4/2018 10:28:00	IMG_0050.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	10:37:00	6/4/2018 10:37:00	IMG_0051.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	17:35:00	6/4/2018 17:35:00	IMG_0055.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	17:38:00	6/4/2018 17:38:00	IMG_0056.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-05	8:57:00	6/5/2018 8:57:00	IMG_0059.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-06	10:44:00	6/6/2018 10:44:00	IMG_0064.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-06	12:44:00	6/6/2018 12:44:00	IMG_0065.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-06	12:46:00	6/6/2018 12:46:00	IMG_0066.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-06	12:50:00	6/6/2018 12:50:00	IMG_0067.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-07	8:21:00	6/7/2018 8:21:00	IMG_0070.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-08	14:04:00	6/8/2018 14:04:00	IMG_0078.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-09	13:56:00	6/9/2018 13:56:00	IMG_0080.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1	with Dicrurus paradiseus	chasing away Dicrurus paradiseus
WL07	1.446863003	103.780639	2018-06-22	2018-06-09	15:41:00	6/9/2018 15:41:00	IMG_0081.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-11	10:10:00	6/11/2018 10:10:00	IMG_0084.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-11	14:33:00	6/11/2018 14:33:00	IMG_0086.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-14	18:24:00	6/14/2018 18:24:00	IMG_0095.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-16	12:04:00	6/16/2018 12:04:00	IMG_0096.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-17	14:50:00	6/17/2018 14:50:00	IMG_0100.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-18	17:32:00	6/18/2018 17:32:00	IMG_0107.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-11	17:11:00	6/11/2018 17:11:00	IMG_0087.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-23	11:34:00	5/23/2018 11:34:00	IMG_0003.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-23	12:00:00	5/23/2018 12:00:00	IMG_0005.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-25	15:42:00	5/25/2018 15:42:00	IMG_0013.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-25	16:34:00	5/25/2018 16:34:00	IMG_0014.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-26	12:21:00	5/26/2018 12:21:00	IMG_0016.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-26	12:45:00	5/26/2018 12:45:00	IMG_0017.AVI	Chalcophaps	indica	Chalcophaps indica	1		

WL07	1.446863003	103.780639	2018-06-22	2018-05-26	12:48:00	5/26/2018 12:48:00	IMG_0018.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-27	10:42:00	5/27/2018 10:42:00	IMG_0022.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-27	10:49:00	5/27/2018 10:49:00	IMG_0023.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-27	11:39:00	5/27/2018 11:39:00	IMG_0024.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-27	15:14:00	5/27/2018 15:14:00	IMG_0025.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-28	16:51:00	5/28/2018 16:51:00	IMG_0029.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-31	13:53:00	5/31/2018 13:53:00	IMG_0031.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-01	17:04:00	6/1/2018 17:04:00	IMG_0034.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-02	12:15:00	6/2/2018 12:15:00	IMG_0035.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-02	16:47:00	6/2/2018 16:47:00	IMG_0038.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	10:53:00	6/4/2018 10:53:00	IMG_0052.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	11:01:00	6/4/2018 11:01:00	IMG_0053.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	11:10:00	6/4/2018 11:10:00	IMG_0054.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-07	8:30:00	6/7/2018 8:30:00	IMG_0071.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-07	12:49:00	6/7/2018 12:49:00	IMG_0073.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-07	13:02:00	6/7/2018 13:02:00	IMG_0074.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-12	11:53:00	6/12/2018 11:53:00	IMG_0089.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-12	17:19:00	6/12/2018 17:19:00	IMG_0090.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-19	9:31:00	6/19/2018 9:31:00	IMG_0108.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-19	11:49:00	6/19/2018 11:49:00	IMG_0110.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-19	12:07:00	6/19/2018 12:07:00	IMG_0111.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-21	9:51:00	6/21/2018 9:51:00	IMG_0113.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-21	9:54:00	6/21/2018 9:54:00	IMG_0114.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-09	13:56:00	6/9/2018 13:56:00	IMG_0080.AVI	Dicrurus	paradiseus	Dicrurus paradiseus	1	with Amaurornis phoenicurus	
WL07	1.446863003	103.780639	2018-06-22	2018-05-23	11:05:00	5/23/2018 11:05:00	IMG_0002.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-23	11:43:00	5/23/2018 11:43:00	IMG_0004.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-23	18:04:00	5/23/2018 18:04:00	IMG_0006.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-23	18:06:00	5/23/2018 18:06:00	IMG_0007.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-24	10:45:00	5/24/2018 10:45:00	IMG_0008.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-26	16:57:00	5/26/2018 16:57:00	IMG_0020.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-29	17:54:00	5/29/2018 17:54:00	IMG_0030.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	13:27:00	6/3/2018 13:27:00	IMG_0041.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	13:30:00	6/3/2018 13:30:00	IMG_0042.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	14:49:00	6/3/2018 14:49:00	IMG_0045.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	15:24:00	6/3/2018 15:24:00	IMG_0046.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	18:46:00	6/3/2018 18:46:00	IMG_0047.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	9:31:00	6/4/2018 9:31:00	IMG_0048.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-05	7:19:00	6/5/2018 7:19:00	IMG_0057.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-05	7:20:00	6/5/2018 7:20:00	IMG_0058.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-05	17:24:00	6/5/2018 17:24:00	IMG_0061.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-06-22	2018-06-06	9:57:00	6/6/2018 9:57:00	IMG_0062.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-06	17:30:00	6/6/2018 17:30:00	IMG_0069.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-07	12:04:00	6/7/2018 12:04:00	IMG_0072.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-07	18:21:00	6/7/2018 18:21:00	IMG_0076.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-08	12:23:00	6/8/2018 12:23:00	IMG_0077.AVI	Rallina	fasciata	Rallina fasciata	1	with Todiramphus chloris	
WL07	1.446863003	103.780639	2018-06-22	2018-06-09	8:59:00	6/9/2018 8:59:00	IMG_0079.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-09	17:52:00	6/9/2018 17:52:00	IMG_0082.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-10	8:07:00	6/10/2018 8:07:00	IMG_0083.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-12	7:41:00	6/12/2018 7:41:00	IMG_0088.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-12	17:52:00	6/12/2018 17:52:00	IMG_0091.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-12	18:39:00	6/12/2018 18:39:00	IMG_0093.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-16	16:32:00	6/16/2018 16:32:00	IMG_0097.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-16	17:37:00	6/16/2018 17:37:00	IMG_0098.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-16	18:13:00	6/16/2018 18:13:00	IMG_0099.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-06-22	2018-06-17	18:06:00	6/17/2018 18:06:00	IMG_0101.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-17	18:28:00	6/17/2018 18:28:00	IMG_0102.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-18	7:26:00	6/18/2018 7:26:00	IMG_0103.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-18	7:40:00	6/18/2018 7:40:00	IMG_0104.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-18	14:06:00	6/18/2018 14:06:00	IMG_0105.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-18	14:49:00	6/18/2018 14:49:00	IMG_0106.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-19	10:09:00	6/19/2018 10:09:00	IMG_0109.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-19	15:17:00	6/19/2018 15:17:00	IMG_0112.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-22	8:08:00	6/22/2018 8:08:00	IMG_0115.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-22	8:16:00	6/22/2018 8:16:00	IMG_0116.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-06-22	2018-06-08	12:23:00	6/8/2018 12:23:00	IMG_0077.AVI	Todiramphus	chloris	Todiramphus chloris	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-25	11:24:00	5/25/2018 11:24:00	IMG_0011.AVI	Spilopelia	chinensis	Spilopelia chinensis	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-31	15:37:00	5/31/2018 15:37:00	IMG_0032.AVI	Spilopelia	chinensis	Spilopelia chinensis	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-31	15:38:00	5/31/2018 15:38:00	IMG_0033.AVI	Spilopelia	chinensis	Spilopelia chinensis	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-03	14:10:00	6/3/2018 14:10:00	IMG_0043.AVI	Spilopelia	chinensis	Spilopelia chinensis	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-06	10:02:00	6/6/2018 10:02:00	IMG_0063.AVI	Spilopelia	chinensis	Spilopelia chinensis	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-04	10:20:00	6/4/2018 10:20:00	IMG_0049.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-12	18:00:00	6/12/2018 18:00:00	IMG_0092.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-13	9:43:00	6/13/2018 9:43:00	IMG_0094.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-24	13:32:00	5/24/2018 13:32:00	IMG_0010.AVI	Varanus	salvator	Varanus salvator	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-25	12:46:00	5/25/2018 12:46:00	IMG_0012.AVI	Varanus	salvator	Varanus salvator	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-25	16:40:00	5/25/2018 16:40:00	IMG_0015.AVI	Varanus	salvator	Varanus salvator	1		

WL07	1.446863003	103.780639	2018-06-22	2018-05-26	14:06:00	5/26/2018 14:06:00	IMG_0019.AVI	Varanus	salvator	Varanus salvator	1	with Amaurornis phoenicurus	
WL07	1.446863003	103.780639	2018-06-22	2018-06-05	16:53:00	6/5/2018 16:53:00	IMG_0060.AVI	Varanus	salvator	Varanus salvator	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-07	13:29:00	6/7/2018 13:29:00	IMG_0075.AVI	Varanus	salvator	Varanus salvator	1		
WL07	1.446863003	103.780639	2018-06-22	2018-05-24	13:00:00	5/24/2018 13:00:00	IMG_0009.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-06	14:19:00	6/6/2018 14:19:00	IMG_0068.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL07	1.446863003	103.780639	2018-06-22	2018-06-11	13:50:00	6/11/2018 13:50:00	IMG_0085.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-16	12:34:00	6/16/2018 12:34:00	IMG_0129.AVI	Aplonis	panayensis	Aplonis panayensis	2		
WL04	1.446877001	103.779125	2018-06-20	2018-06-16	12:37:00	6/16/2018 12:37:00	IMG_0130.AVI	Aplonis	panayensis	Aplonis panayensis	2	with unid bird	
WL04	1.446877001	103.779125	2018-06-20	2018-05-30	13:34:00	5/30/2018 13:34:00	IMG_0034.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-31	9:14:00	5/31/2018 9:14:00	IMG_0035.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-31	9:15:00	5/31/2018 9:15:00	IMG_0036.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-11	7:34:00	6/11/2018 7:34:00	IMG_0072.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-28	11:52:00	5/28/2018 11:52:00	IMG_0029.AVI	Picus	vittatus	Picus vittatus	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-09	16:56:00	6/9/2018 16:56:00	IMG_0070.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL04	1.446877001	103.779125	2018-06-20	2018-05-23	10:53:00	5/23/2018 10:53:00	IMG_0004.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-23	10:54:00	5/23/2018 10:54:00	IMG_0005.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-23	10:54:00	5/23/2018 10:54:00	IMG_0006.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-24	13:26:00	5/24/2018 13:26:00	IMG_0018.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-30	13:06:00	5/30/2018 13:06:00	IMG_0031.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-30	13:06:00	5/30/2018 13:06:00	IMG_0032.AVI	Tupaia	glis	Tupaia glis	1	with unid sp.	
WL04	1.446877001	103.779125	2018-06-20	2018-05-30	13:07:00	5/30/2018 13:07:00	IMG_0033.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-01	12:51:00	6/1/2018 12:51:00	IMG_0037.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-01	12:52:00	6/1/2018 12:52:00	IMG_0038.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-01	13:07:00	6/1/2018 13:07:00	IMG_0039.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-02	10:24:00	6/2/2018 10:24:00	IMG_0040.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-02	10:24:00	6/2/2018 10:24:00	IMG_0041.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-02	10:25:00	6/2/2018 10:25:00	IMG_0042.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-02	10:25:00	6/2/2018 10:25:00	IMG_0043.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-02	10:26:00	6/2/2018 10:26:00	IMG_0044.AVI	Tupaia	glis	Tupaia glis	2		
WL04	1.446877001	103.779125	2018-06-20	2018-06-02	10:28:00	6/2/2018 10:28:00	IMG_0045.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-04	8:58:00	6/4/2018 8:58:00	IMG_0054.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-04	17:09:00	6/4/2018 17:09:00	IMG_0056.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-05	13:49:00	6/5/2018 13:49:00	IMG_0057.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-09	9:50:00	6/9/2018 9:50:00	IMG_0067.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-09	17:49:00	6/9/2018 17:49:00	IMG_0071.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-12	7:20:00	6/12/2018 7:20:00	IMG_0084.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-13	13:16:00	6/13/2018 13:16:00	IMG_0094.AVI	Tupaia	glis	Tupaia glis	2		
WL04	1.446877001	103.779125	2018-06-20	2018-06-13	13:21:00	6/13/2018 13:21:00	IMG_0095.AVI	Tupaia	glis	Tupaia glis	2		
WL04	1.446877001	103.779125	2018-06-20	2018-06-13	16:15:00	6/13/2018 16:15:00	IMG_0096.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-13	16:32:00	6/13/2018 16:32:00	IMG_0097.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-14	10:46:00	6/14/2018 10:46:00	IMG_0099.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-14	10:46:00	6/14/2018 10:46:00	IMG_0100.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-14	14:30:00	6/14/2018 14:30:00	IMG_0103.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-14	14:30:00	6/14/2018 14:30:00	IMG_0104.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-14	15:32:00	6/14/2018 15:32:00	IMG_0106.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-14	17:46:00	6/14/2018 17:46:00	IMG_0107.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-15	8:44:00	6/15/2018 8:44:00	IMG_0108.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-15	13:10:00	6/15/2018 13:10:00	IMG_0109.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-15	13:17:00	6/15/2018 13:17:00	IMG_0110.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-16	11:03:00	6/16/2018 11:03:00	IMG_0127.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-16	18:48:00	6/16/2018 18:48:00	IMG_0137.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-17	10:32:00	6/17/2018 10:32:00	IMG_0139.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-17	10:33:00	6/17/2018 10:33:00	IMG_0140.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-17	15:51:00	6/17/2018 15:51:00	IMG_0145.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-18	7:25:00	6/18/2018 7:25:00	IMG_0152.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-19	9:28:00	6/19/2018 9:28:00	IMG_0160.AVI	Tupaia	glis	Tupaia glis	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-24	20:32:00	5/24/2018 20:32:00	IMG_0019.AVI	unid	sp.	unid sp.	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-24	20:32:00	5/24/2018 20:32:00	IMG_0020.AVI	unid	sp.	unid sp.	1		
WL04	1.446877001	103.779125	2018-06-20	2018-05-24	20:32:00	5/24/2018 20:32:00	IMG_0021.AVI	unid	sp.	unid sp.	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-09	12:22:00	6/9/2018 12:22:00	IMG_0069.AVI	unid	sp.	unid sp.	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-14	12:32:00	6/14/2018 12:32:00	IMG_0101.AVI	unid	sp.	unid sp.	1		
WL04	1.446877001	103.779125	2018-06-20	2018-06-16	12:37:00	6/16/2018 12:37:00	IMG_0130.AVI	unid	sp.	unid sp.	1	unid bird with 2 Aplonis panayensis	
WL04	1.446877001	103.779125	2018-06-20	2018-05-30	13:06:00	5/30/2018 13:06:00	IMG_0032.AVI	unid	sp.	unid sp.	1	with Tupaia glis	
WL08	1.44662898	103.781511	2018-06-22	2018-06-02	9:46:00	6/2/2018 9:46:00	IMG_0013.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-04	8:29:00	6/4/2018 8:29:00	IMG_0017.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-09	17:17:00	6/9/2018 17:17:00	IMG_0163.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-10	13:54:00	6/10/2018 13:54:00	IMG_0164.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-10	14:51:00	6/10/2018 14:51:00	IMG_0165.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-09	14:52:00	6/9/2018 14:52:00	IMG_0166.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-17	7:38:00	6/17/2018 7:38:00	IMG_0173.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-17	13:22:00	6/17/2018 13:22:00	IMG_0174.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-06-22	2018-05-26	11:49:00	5/26/2018 11:49:00	IMG_0004.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-05-28	10:06:00	5/28/2018 10:06:00	IMG_0007.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-02	14:34:00	6/2/2018 14:34:00	IMG_0014.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-05	10:02:00	6/5/2018 10:02:00	IMG_0038.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-08	11:19:00	6/8/2018 11:19:00	IMG_0159.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		

WL08	1.44662898	103.781511	2018-06-22	2018-06-11	10:51:00	6/11/2018 10:51:00	IMG_0168.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-14	10:23:00	6/14/2018 10:23:00	IMG_0171.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-14	10:23:00	6/14/2018 10:23:00	IMG_0172.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-21	13:56:00	6/21/2018 13:56:00	IMG_0182.AVI	Eutropis	multifasciata	Eutropis multifasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-05-28	17:43:00	5/28/2018 17:43:00	IMG_0009.AVI	Gallirallus	striatus	Gallirallus striatus	1		
WL08	1.44662898	103.781511	2018-06-22	2018-05-29	7:56:00	5/29/2018 7:56:00	IMG_0010.AVI	Gallirallus	striatus	Gallirallus striatus	1		
WL08	1.44662898	103.781511	2018-06-22	2018-05-31	10:47:00	5/31/2018 10:47:00	IMG_0011.AVI	Gallirallus	striatus	Gallirallus striatus	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-05	14:03:00	6/5/2018 14:03:00	IMG_0134.AVI	Gallirallus	striatus	Gallirallus striatus	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-07	10:45:00	6/7/2018 10:45:00	IMG_0146.AVI	Gallirallus	striatus	Gallirallus striatus	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-11	3:47:00	6/11/2018 3:47:00	IMG_0167.AVI	Paradoxurus	hermaphroditus	Paradoxurus hermaphroditus	1		
WL08	1.44662898	103.781511	2018-06-22	2018-05-27	17:54:00	5/27/2018 17:54:00	IMG_0006.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-02	8:02:00	6/2/2018 8:02:00	IMG_0012.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-18	18:41:00	6/18/2018 18:41:00	IMG_0177.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-19	18:53:00	6/19/2018 18:53:00	IMG_0181.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-21	19:05:00	6/21/2018 19:05:00	IMG_0183.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-22	6:53:00	6/22/2018 6:53:00	IMG_0184.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-22	6:54:00	6/22/2018 6:54:00	IMG_0185.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-22	7:41:00	6/22/2018 7:41:00	IMG_0186.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-03	11:45:00	6/3/2018 11:45:00	IMG_0015.AVI	Skink	sp.	Skink sp.	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-06	14:22:00	6/6/2018 14:22:00	IMG_0145.AVI	Skink	sp.	Skink sp.	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-08	11:45:00	6/8/2018 11:45:00	IMG_0161.AVI	Skink	sp.	Skink sp.	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-03	14:44:00	6/3/2018 14:44:00	IMG_0016.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-08	11:20:00	6/8/2018 11:20:00	IMG_0160.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-09	11:51:00	6/9/2018 11:51:00	IMG_0162.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-12	9:26:00	6/12/2018 9:26:00	IMG_0170.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-17	16:04:00	6/17/2018 16:04:00	IMG_0175.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-19	10:30:00	6/19/2018 10:30:00	IMG_0178.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-19	10:31:00	6/19/2018 10:31:00	IMG_0179.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-06-22	2018-06-19	10:31:00	6/19/2018 10:31:00	IMG_0180.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-11	9:37:00	6/11/2018 9:37:00	IMG_0060.AVI	Acridotheres	javanicus	Acridotheres javanicus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-14	12:20:00	6/14/2018 12:20:00	IMG_0069.AVI	Acridotheres	javanicus	Acridotheres javanicus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	16:32:00	6/18/2018 16:32:00	IMG_0109.AVI	Acridotheres	javanicus	Acridotheres javanicus	2	with Amaurornis phoenicurus	
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	16:33:00	6/18/2018 16:33:00	IMG_0110.AVI	Acridotheres	javanicus	Acridotheres javanicus	2	with Tupaia glis	
WL09	1.447597006	103.782669	2018-06-22	2018-06-19	9:01:00	6/19/2018 9:01:00	IMG_0117.AVI	Acridotheres	javanicus	Acridotheres javanicus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-25	14:33:00	5/25/2018 14:33:00	IMG_0003.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1	with Tupaia glis	
WL09	1.447597006	103.782669	2018-06-22	2018-05-25	14:34:00	5/25/2018 14:34:00	IMG_0004.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1	with Tupaia glis	
WL09	1.447597006	103.782669	2018-06-22	2018-06-02	14:45:00	6/2/2018 14:45:00	IMG_0017.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-02	14:45:00	6/2/2018 14:45:00	IMG_0018.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-02	14:47:00	6/2/2018 14:47:00	IMG_0019.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-02	14:47:00	6/2/2018 14:47:00	IMG_0020.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-08	8:15:00	6/8/2018 8:15:00	IMG_0039.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	7:41:00	6/10/2018 7:41:00	IMG_0047.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-16	17:50:00	6/16/2018 17:50:00	IMG_0088.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	16:32:00	6/18/2018 16:32:00	IMG_0109.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1	with 2 Acridotheres javanicus	
WL09	1.447597006	103.782669	2018-06-22	2018-06-19	7:44:00	6/19/2018 7:44:00	IMG_0115.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	17:13:00	6/10/2018 17:13:00	IMG_0052.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	17:13:00	6/10/2018 17:13:00	IMG_0053.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	17:13:00	6/10/2018 17:13:00	IMG_0054.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	17:43:00	6/10/2018 17:43:00	IMG_0055.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-28	16:11:00	5/28/2018 16:11:00	IMG_0008.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-30	10:27:00	5/30/2018 10:27:00	IMG_0014.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-01	11:11:00	6/1/2018 11:11:00	IMG_0015.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-01	15:48:00	6/1/2018 15:48:00	IMG_0016.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-03	12:23:00	6/3/2018 12:23:00	IMG_0023.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-06	9:49:00	6/6/2018 9:49:00	IMG_0032.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	11:28:00	6/10/2018 11:28:00	IMG_0050.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-11	9:36:00	6/11/2018 9:36:00	IMG_0059.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-11	9:39:00	6/11/2018 9:39:00	IMG_0061.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-14	12:37:00	6/14/2018 12:37:00	IMG_0070.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-14	12:48:00	6/14/2018 12:48:00	IMG_0071.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	10:43:00	6/15/2018 10:43:00	IMG_0072.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	10:52:00	6/15/2018 10:52:00	IMG_0073.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-16	17:02:00	6/16/2018 17:02:00	IMG_0086.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	11:24:00	6/18/2018 11:24:00	IMG_0106.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-28	18:38:00	5/28/2018 18:38:00	IMG_0009.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-17	20:13:00	6/17/2018 20:13:00	IMG_0094.AVI	Rattus	sp.	Rattus sp.	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-17	22:46:00	6/17/2018 22:46:00	IMG_0095.AVI	Rattus	sp.	Rattus sp.	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-19	0:02:00	6/19/2018 0:02:00	IMG_0113.AVI	Rattus	sp.	Rattus sp.	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-16	13:45:00	6/16/2018 13:45:00	IMG_0084.AVI	Spilopelia	chinensis	Spilopelia chinensis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-19	12:46:00	6/19/2018 12:46:00	IMG_0127.AVI	unid	sp.	unid sp.	1	unid bird	
WL09	1.447597006	103.782669	2018-06-22	2018-06-19	12:46:00	6/19/2018 12:46:00	IMG_0128.AVI	unid	sp.	unid sp.	1	unid bird	
WL09	1.447597006	103.782669	2018-06-22	2018-06-19	13:29:00	6/19/2018 13:29:00	IMG_0195.AVI	unid	sp.	unid sp.	1	unid bird	
WL09	1.447597006	103.782669	2018-06-22	2018-06-06	9:18:00	6/6/2018 9:18:00	IMG_0029.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-06	9:18:00	6/6/2018 9:18:00	IMG_0030.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-19	13:21:00	6/19/2018 13:21:00	IMG_0189.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-25	17:11:00	5/25/2018 17:11:00	IMG_0005.AVI	unid	sp.	unid sp.	1	squirrel or shrew	

WL09	1.447597006	103.782669	2018-06-22	2018-06-02	17:22:00	6/2/2018 17:22:00	IMG_0021.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	13:35:00	6/10/2018 13:35:00	IMG_0051.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-06-22	2018-06-13	10:11:00	6/13/2018 10:11:00	IMG_0066.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-06-22	2018-06-13	10:11:00	6/13/2018 10:11:00	IMG_0067.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-06-22	2018-06-17	7:25:00	6/17/2018 7:25:00	IMG_0091.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-06-22	2018-06-17	7:25:00	6/17/2018 7:25:00	IMG_0092.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-06-22	2018-05-25	10:55:00	5/25/2018 10:55:00	IMG_0002.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-25	14:33:00	5/25/2018 14:33:00	IMG_0003.AVI	Tupaia	glis	Tupaia glis	1	with Amaurornis phoenicurus	
WL09	1.447597006	103.782669	2018-06-22	2018-05-25	14:34:00	5/25/2018 14:34:00	IMG_0004.AVI	Tupaia	glis	Tupaia glis	1	with Amaurornis phoenicurus	
WL09	1.447597006	103.782669	2018-06-22	2018-05-26	12:39:00	5/26/2018 12:39:00	IMG_0006.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-28	14:27:00	5/28/2018 14:27:00	IMG_0007.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-29	9:42:00	5/29/2018 9:42:00	IMG_0010.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-05-30	8:31:00	5/30/2018 8:31:00	IMG_0013.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-03	8:37:00	6/3/2018 8:37:00	IMG_0022.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-03	12:49:00	6/3/2018 12:49:00	IMG_0024.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-03	12:50:00	6/3/2018 12:50:00	IMG_0025.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-04	10:24:00	6/4/2018 10:24:00	IMG_0027.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-04	21:07:00	6/4/2018 21:07:00	IMG_0028.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-06	16:10:00	6/6/2018 16:10:00	IMG_0033.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-06	18:01:00	6/6/2018 18:01:00	IMG_0034.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-06	18:30:00	6/6/2018 18:30:00	IMG_0035.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-07	9:18:00	6/7/2018 9:18:00	IMG_0037.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-07	12:18:00	6/7/2018 12:18:00	IMG_0038.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-08	8:51:00	6/8/2018 8:51:00	IMG_0040.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-08	13:17:00	6/8/2018 13:17:00	IMG_0041.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-08	16:04:00	6/8/2018 16:04:00	IMG_0042.AVI	Tupaia	glis	Tupaia glis	2		
WL09	1.447597006	103.782669	2018-06-22	2018-06-08	16:05:00	6/8/2018 16:05:00	IMG_0043.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-08	17:50:00	6/8/2018 17:50:00	IMG_0044.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-09	8:09:00	6/9/2018 8:09:00	IMG_0045.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-09	10:10:00	6/9/2018 10:10:00	IMG_0046.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	8:54:00	6/10/2018 8:54:00	IMG_0048.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	8:55:00	6/10/2018 8:55:00	IMG_0049.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	17:45:00	6/10/2018 17:45:00	IMG_0056.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	17:45:00	6/10/2018 17:45:00	IMG_0057.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-10	17:46:00	6/10/2018 17:46:00	IMG_0058.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-11	10:37:00	6/11/2018 10:37:00	IMG_0062.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-12	17:21:00	6/12/2018 17:21:00	IMG_0063.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-12	18:30:00	6/12/2018 18:30:00	IMG_0064.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-12	18:37:00	6/12/2018 18:37:00	IMG_0065.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-14	10:50:00	6/14/2018 10:50:00	IMG_0068.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	14:09:00	6/15/2018 14:09:00	IMG_0074.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	14:09:00	6/15/2018 14:09:00	IMG_0075.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	14:16:00	6/15/2018 14:16:00	IMG_0076.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	15:46:00	6/15/2018 15:46:00	IMG_0077.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	16:37:00	6/15/2018 16:37:00	IMG_0078.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	16:56:00	6/15/2018 16:56:00	IMG_0079.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	18:28:00	6/15/2018 18:28:00	IMG_0080.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-15	18:45:00	6/15/2018 18:45:00	IMG_0081.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-16	7:14:00	6/16/2018 7:14:00	IMG_0083.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-16	15:45:00	6/16/2018 15:45:00	IMG_0085.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-16	17:19:00	6/16/2018 17:19:00	IMG_0087.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-16	18:47:00	6/16/2018 18:47:00	IMG_0089.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-16	18:49:00	6/16/2018 18:49:00	IMG_0090.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-17	9:08:00	6/17/2018 9:08:00	IMG_0093.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	6:58:00	6/18/2018 6:58:00	IMG_0102.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	11:11:00	6/18/2018 11:11:00	IMG_0105.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	11:42:00	6/18/2018 11:42:00	IMG_0107.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	16:33:00	6/18/2018 16:33:00	IMG_0110.AVI	Tupaia	glis	Tupaia glis	1	with 2 Acridotheres javanicus	
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	16:34:00	6/18/2018 16:34:00	IMG_0111.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-18	18:15:00	6/18/2018 18:15:00	IMG_0112.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-06-22	2018-06-19	7:23:00	6/19/2018 7:23:00	IMG_0114.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-07-16	2018-07-07	13:55:00	7/7/2018 13:55:00	IMG_0009.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL01	1.450444004	103.776708	2018-07-16	2018-06-28	6:54:00	6/28/2018 6:54:00	IMG_0007.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-07-16	2018-06-30	6:54:00	6/30/2018 6:54:00	IMG_0008.AVI	Tupaia	glis	Tupaia glis	1		
WL01	1.450444004	103.776708	2018-07-16	2018-07-09	7:13:00	7/9/2018 7:13:00	IMG_0010.AVI	unid	sp.	unid sp.	1		
WL03	1.449697008	103.778617	2018-07-16	2018-06-23	17:56:00	6/23/2018 17:56:00	IMG_0026.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	2018-06-25	14:16:00	6/25/2018 14:16:00	IMG_0027.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	2018-06-26	14:34:00	6/26/2018 14:34:00	IMG_0028.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	2018-06-28	12:03:00	6/28/2018 12:03:00	IMG_0029.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	2018-06-30	12:49:00	6/30/2018 12:49:00	IMG_0030.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	2018-07-05	9:24:00	7/5/2018 9:24:00	IMG_0032.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	Wrong date	12:52:00	N/A	IMG_0033.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	Wrong date	11:23:00	N/A	IMG_0034.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	Wrong date	9:07:00	N/A	IMG_0035.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	Wrong date	11:39:00	N/A	IMG_0036.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL03	1.449697008	103.778617	2018-07-16	2018-06-21	8:19:00	6/21/2018 8:19:00	IMG_0025.AVI	Tupaia	glis	Tupaia glis	1		

WL03	1.449697008	103.778617	2018-07-16	2018-06-30	16:38:00	6/30/2018 16:38:00	IMG_0031.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-07-16	2018-06-30	15:19:00	6/30/2018 15:19:00	IMG_0014.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL06	1.445670007	103.781236	2018-07-16	2018-07-06	17:34:00	7/6/2018 17:34:00	IMG_0019.AVI	Chalcophaps	indica	Chalcophaps indica	1	with Naja sumatrana	
WL06	1.445670007	103.781236	2018-07-16	2018-07-06	17:34:00	7/6/2018 17:34:00	IMG_0019.AVI	Naja	sumatrana	Naja sumatrana	1	with Chalcophaps indica	
WL06	1.445670007	103.781236	2018-07-16	2018-06-22	18:53:00	6/22/2018 18:53:00	IMG_0002.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-07-16	2018-06-23	19:11:00	6/23/2018 19:11:00	IMG_0011.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-07-16	2018-06-26	11:01:00	6/26/2018 11:01:00	IMG_0012.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-07-16	2018-06-30	19:07:00	6/30/2018 19:07:00	IMG_0015.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-07-16	2018-07-01	6:57:00	7/1/2018 6:57:00	IMG_0016.AVI	Tupaia	glis	Tupaia glis	1		
WL06	1.445670007	103.781236	2018-07-16	2018-07-01	7:00:00	7/1/2018 7:00:00	IMG_0017.AVI	Tupaia	glis	Tupaia glis	1		
WL10	1.448526978	103.783152	2018-07-16	2018-06-24	18:18:00	6/24/2018 18:18:00	IMG_0021.AVI	Acridotheres	javanicus	Acridotheres javanicus	1	with Callosciurus notatus	
WL10	1.448526978	103.783152	2018-07-16	2018-06-25	17:09:00	6/25/2018 17:09:00	IMG_0022.AVI	Acridotheres	javanicus	Acridotheres javanicus	1	with Callosciurus notatus	
WL10	1.448526978	103.783152	2018-07-16	2018-06-24	18:18:00	6/24/2018 18:18:00	IMG_0021.AVI	Callosciurus	notatus	Callosciurus notatus	1	with Acridotheres javanicus	
WL10	1.448526978	103.783152	2018-07-16	2018-06-25	17:09:00	6/25/2018 17:09:00	IMG_0022.AVI	Callosciurus	notatus	Callosciurus notatus	1	with Acridotheres javanicus	
WL10	1.448526978	103.783152	2018-07-16	2018-07-06	14:52:00	7/6/2018 14:52:00	IMG_0116.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL10	1.448526978	103.783152	2018-07-16	2018-07-14	16:29:00	7/14/2018 16:29:00	IMG_0442.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL10	1.448526978	103.783152	2018-07-16	2018-07-03	13:12:00	7/3/2018 13:12:00	IMG_0083.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL10	1.448526978	103.783152	2018-07-16	2018-07-05	10:33:00	7/5/2018 10:33:00	IMG_0103.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL02	1.450000014	103.779533	2018-07-16	2018-07-05	13:56:00	7/5/2018 13:56:00	IMG_0039.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-05	14:36:00	7/5/2018 14:36:00	IMG_0040.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-05	14:37:00	7/5/2018 14:37:00	IMG_0041.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-07	14:18:00	7/7/2018 14:18:00	IMG_0043.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-07-16	2018-07-10	13:25:00	7/10/2018 13:25:00	IMG_0045.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-07-16	2018-07-10	13:25:00	7/10/2018 13:25:00	IMG_0046.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-10	13:28:00	7/10/2018 13:28:00	IMG_0047.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-10	13:28:00	7/10/2018 13:28:00	IMG_0048.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-10	13:29:00	7/10/2018 13:29:00	IMG_0049.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-10	13:33:00	7/10/2018 13:33:00	IMG_0050.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-07-16	2018-07-10	13:34:00	7/10/2018 13:34:00	IMG_0051.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-10	14:17:00	7/10/2018 14:17:00	IMG_0052.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-14	9:57:00	7/14/2018 9:57:00	IMG_0054.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL02	1.450000014	103.779533	2018-07-16	2018-07-14	10:06:00	7/14/2018 10:06:00	IMG_0055.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL02	1.450000014	103.779533	2018-07-16	2018-07-14	14:13:00	7/14/2018 14:13:00	IMG_0056.AVI	Todiramphus	chloris	Todiramphus chloris	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:18:00	7/8/2018 12:18:00	IMG_0007.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:34:00	7/8/2018 12:34:00	IMG_0008.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:35:00	7/8/2018 12:35:00	IMG_0009.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:35:00	7/8/2018 12:35:00	IMG_0010.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:36:00	7/8/2018 12:36:00	IMG_0011.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:36:00	7/8/2018 12:36:00	IMG_0012.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:37:00	7/8/2018 12:37:00	IMG_0013.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:37:00	7/8/2018 12:37:00	IMG_0014.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:38:00	7/8/2018 12:38:00	IMG_0015.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-08	12:39:00	7/8/2018 12:39:00	IMG_0016.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:36:00	7/15/2018 16:36:00	IMG_0017.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:36:00	7/15/2018 16:36:00	IMG_0018.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:37:00	7/15/2018 16:37:00	IMG_0019.AVI	Macaca	fascicularis	Macaca fascicularis	3		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:37:00	7/15/2018 16:37:00	IMG_0020.AVI	Macaca	fascicularis	Macaca fascicularis	4		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:38:00	7/15/2018 16:38:00	IMG_0021.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:38:00	7/15/2018 16:38:00	IMG_0022.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:38:00	7/15/2018 16:38:00	IMG_0023.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:39:00	7/15/2018 16:39:00	IMG_0024.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:39:00	7/15/2018 16:39:00	IMG_0025.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:39:00	7/15/2018 16:39:00	IMG_0026.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:43:00	7/15/2018 16:43:00	IMG_0027.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:48:00	7/15/2018 16:48:00	IMG_0028.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:49:00	7/15/2018 16:49:00	IMG_0029.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:50:00	7/15/2018 16:50:00	IMG_0030.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:55:00	7/15/2018 16:55:00	IMG_0031.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:56:00	7/15/2018 16:56:00	IMG_0032.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:56:00	7/15/2018 16:56:00	IMG_0033.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:56:00	7/15/2018 16:56:00	IMG_0034.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:57:00	7/15/2018 16:57:00	IMG_0035.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:57:00	7/15/2018 16:57:00	IMG_0036.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:57:00	7/15/2018 16:57:00	IMG_0037.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:58:00	7/15/2018 16:58:00	IMG_0038.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	16:59:00	7/15/2018 16:59:00	IMG_0039.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:00:00	7/15/2018 17:00:00	IMG_0040.AVI	Macaca	fascicularis	Macaca fascicularis	4		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:00:00	7/15/2018 17:00:00	IMG_0041.AVI	Macaca	fascicularis	Macaca fascicularis	3		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:00:00	7/15/2018 17:00:00	IMG_0042.AVI	Macaca	fascicularis	Macaca fascicularis	3		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:01:00	7/15/2018 17:01:00	IMG_0043.AVI	Macaca	fascicularis	Macaca fascicularis	3		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:01:00	7/15/2018 17:01:00	IMG_0044.AVI	Macaca	fascicularis	Macaca fascicularis	3	with bird	
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:03:00	7/15/2018 17:03:00	IMG_0045.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:04:00	7/15/2018 17:04:00	IMG_0046.AVI	Macaca	fascicularis	Macaca fascicularis	1	with bird	
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:05:00	7/15/2018 17:05:00	IMG_0047.AVI	Macaca	fascicularis	Macaca fascicularis	1	with bird	
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:05:00	7/15/2018 17:05:00	IMG_0048.AVI	Macaca	fascicularis	Macaca fascicularis	1	with bird	
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:05:00	7/15/2018 17:05:00	IMG_0049.AVI	Macaca	fascicularis	Macaca fascicularis	4		

WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:08:00	7/15/2018 17:08:00	IMG_0050.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:09:00	7/15/2018 17:09:00	IMG_0051.AVI	Macaca	fascicularis	Macaca fascicularis	2		
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:01:00	7/15/2018 17:01:00	IMG_0044.AVI	Dicrurus	paradiseus	Dicrurus paradiseus	1	with Macaca fascicularis	
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:04:00	7/15/2018 17:04:00	IMG_0046.AVI	Dicrurus	paradiseus	Dicrurus paradiseus	1	with Macaca fascicularis	
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:05:00	7/15/2018 17:05:00	IMG_0047.AVI	Dicrurus	paradiseus	Dicrurus paradiseus	1	with Macaca fascicularis	
WL05	1.445786012	103.779562	2018-07-16	2018-07-15	17:05:00	7/15/2018 17:05:00	IMG_0048.AVI	Dicrurus	paradiseus	Dicrurus paradiseus	1	with Macaca fascicularis	
WL07	1.446863003	103.780639	2018-07-16	2018-06-22	11:41:00	6/22/2018 11:41:00	IMG_0003.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-22	15:49:00	6/22/2018 15:49:00	IMG_0006.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-22	16:46:00	6/22/2018 16:46:00	IMG_0007.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-22	17:00:00	6/22/2018 17:00:00	IMG_0008.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-22	17:01:00	6/22/2018 17:01:00	IMG_0009.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-24	17:17:00	6/24/2018 17:17:00	IMG_0014.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-25	13:00:00	6/25/2018 13:00:00	IMG_0015.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-25	15:11:00	6/25/2018 15:11:00	IMG_0016.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-25	17:14:00	6/25/2018 17:14:00	IMG_0017.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	3		
WL07	1.446863003	103.780639	2018-07-16	2018-06-26	15:32:00	6/26/2018 15:32:00	IMG_0021.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-26	18:13:00	6/26/2018 18:13:00	IMG_0022.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-26	18:20:00	6/26/2018 18:20:00	IMG_0023.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-29	8:13:00	6/29/2018 8:13:00	IMG_0027.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-29	17:31:00	6/29/2018 17:31:00	IMG_0030.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	15:24:00	6/30/2018 15:24:00	IMG_0038.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	15:26:00	6/30/2018 15:26:00	IMG_0039.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	15:27:00	6/30/2018 15:27:00	IMG_0040.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	16:38:00	6/30/2018 16:38:00	IMG_0042.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-02	17:05:00	7/2/2018 17:05:00	IMG_0049.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-03	12:19:00	7/3/2018 12:19:00	IMG_0053.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-03	13:41:00	7/3/2018 13:41:00	IMG_0054.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-03	17:43:00	7/3/2018 17:43:00	IMG_0055.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-03	18:04:00	7/3/2018 18:04:00	IMG_0056.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-04	15:19:00	7/4/2018 15:19:00	IMG_0060.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-04	18:41:00	7/4/2018 18:41:00	IMG_0062.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-06	15:34:00	7/6/2018 15:34:00	IMG_0068.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-06	17:03:00	7/6/2018 17:03:00	IMG_0069.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-09	9:42:00	7/9/2018 9:42:00	IMG_0083.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-10	17:53:00	7/10/2018 17:53:00	IMG_0090.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	14:55:00	7/12/2018 14:55:00	IMG_0100.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	15:00:00	7/12/2018 15:00:00	IMG_0101.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	17:15:00	7/12/2018 17:15:00	IMG_0103.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	17:28:00	7/12/2018 17:28:00	IMG_0104.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	17:31:00	7/12/2018 17:31:00	IMG_0105.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	18:13:00	7/12/2018 18:13:00	IMG_0107.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	16:24:00	7/14/2018 16:24:00	IMG_0118.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	18:20:00	7/14/2018 18:20:00	IMG_0121.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	18:32:00	7/14/2018 18:32:00	IMG_0122.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-15	17:35:00	7/15/2018 17:35:00	IMG_0130.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-22	12:30:00	6/22/2018 12:30:00	IMG_0004.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	8:51:00	6/30/2018 8:51:00	IMG_0031.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	11:29:00	6/30/2018 11:29:00	IMG_0033.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-03	11:52:00	7/3/2018 11:52:00	IMG_0051.AVI	Chalcophaps	indica	Chalcophaps indica	1	with Picus vittatus	
WL07	1.446863003	103.780639	2018-07-16	2018-07-04	11:20:00	7/4/2018 11:20:00	IMG_0058.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-03	11:52:00	7/3/2018 11:52:00	IMG_0051.AVI	Picus	vittatus	Picus vittatus	1	with Chalcophaps indica	
WL07	1.446863003	103.780639	2018-07-16	2018-07-08	12:53:00	7/8/2018 12:53:00	IMG_0076.AVI	Picus	vittatus	Picus vittatus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-11	17:56:00	7/11/2018 17:56:00	IMG_0094.AVI	Picus	vittatus	Picus vittatus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-13	14:25:00	7/13/2018 14:25:00	IMG_0112.AVI	Picus	vittatus	Picus vittatus	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-23	11:15:00	6/23/2018 11:15:00	IMG_0010.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-23	14:12:00	6/23/2018 14:12:00	IMG_0011.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-23	14:29:00	6/23/2018 14:29:00	IMG_0012.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-23	14:40:00	6/23/2018 14:40:00	IMG_0013.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-25	18:34:00	6/25/2018 18:34:00	IMG_0018.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-26	8:02:00	6/26/2018 8:02:00	IMG_0020.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-28	13:20:00	6/28/2018 13:20:00	IMG_0024.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-28	13:31:00	6/28/2018 13:31:00	IMG_0025.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-28	19:02:00	6/28/2018 19:02:00	IMG_0026.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	9:00:00	6/30/2018 9:00:00	IMG_0032.AVI	Rallina	fasciata	Rallina fasciata	2	with Varanus salvator	
WL07	1.446863003	103.780639	2018-07-16	2018-07-02	15:24:00	7/2/2018 15:24:00	IMG_0048.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-02	17:17:00	7/2/2018 17:17:00	IMG_0050.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-03	12:06:00	7/3/2018 12:06:00	IMG_0052.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-04	7:54:00	7/4/2018 7:54:00	IMG_0057.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-07	12:56:00	7/7/2018 12:56:00	IMG_0071.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-07	15:46:00	7/7/2018 15:46:00	IMG_0073.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-08	7:04:00	7/8/2018 7:04:00	IMG_0075.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-08	17:28:00	7/8/2018 17:28:00	IMG_0079.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-08	18:46:00	7/8/2018 18:46:00	IMG_0080.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-08	18:50:00	7/8/2018 18:50:00	IMG_0081.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-09	9:20:00	7/9/2018 9:20:00	IMG_0082.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-09	17:36:00	7/9/2018 17:36:00	IMG_0084.AVI	Rallina	fasciata	Rallina fasciata	1	with Tupaia glis	

WL07	1.446863003	103.780639	2018-07-16	2018-07-09	17:47:00	7/9/2018 17:47:00	IMG_0085.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-09	17:50:00	7/9/2018 17:50:00	IMG_0086.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-10	8:03:00	7/10/2018 8:03:00	IMG_0087.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-10	10:04:00	7/10/2018 10:04:00	IMG_0088.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-10	15:27:00	7/10/2018 15:27:00	IMG_0089.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-10	18:18:00	7/10/2018 18:18:00	IMG_0091.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-11	9:49:00	7/11/2018 9:49:00	IMG_0092.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-11	10:29:00	7/11/2018 10:29:00	IMG_0093.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-11	18:36:00	7/11/2018 18:36:00	IMG_0095.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-11	18:40:00	7/11/2018 18:40:00	IMG_0096.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	7:27:00	7/12/2018 7:27:00	IMG_0097.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	10:38:00	7/12/2018 10:38:00	IMG_0098.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	12:12:00	7/12/2018 12:12:00	IMG_0099.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	16:09:00	7/12/2018 16:09:00	IMG_0102.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	17:44:00	7/12/2018 17:44:00	IMG_0106.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-12	18:54:00	7/12/2018 18:54:00	IMG_0108.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-13	9:28:00	7/13/2018 9:28:00	IMG_0109.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-13	10:22:00	7/13/2018 10:22:00	IMG_0111.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	7:27:00	7/14/2018 7:27:00	IMG_0114.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	12:36:00	7/14/2018 12:36:00	IMG_0115.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	12:44:00	7/14/2018 12:44:00	IMG_0116.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	12:46:00	7/14/2018 12:46:00	IMG_0117.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	17:58:00	7/14/2018 17:58:00	IMG_0119.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-14	18:04:00	7/14/2018 18:04:00	IMG_0120.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-15	10:46:00	7/15/2018 10:46:00	IMG_0123.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-15	10:48:00	7/15/2018 10:48:00	IMG_0124.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-15	10:55:00	7/15/2018 10:55:00	IMG_0125.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-15	13:33:00	7/15/2018 13:33:00	IMG_0126.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-15	13:34:00	7/15/2018 13:34:00	IMG_0127.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-15	13:38:00	7/15/2018 13:38:00	IMG_0128.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-16	7:23:00	7/16/2018 7:23:00	IMG_0132.AVI	Rallina	fasciata	Rallina fasciata	2		
WL07	1.446863003	103.780639	2018-07-16	2018-07-16	8:50:00	7/16/2018 8:50:00	IMG_0133.AVI	Rallina	fasciata	Rallina fasciata	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-07	19:40:00	7/7/2018 19:40:00	IMG_0074.AVI	Strix	seloputo	Strix seloputo	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-22	12:42:00	6/22/2018 12:42:00	IMG_0005.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-29	9:59:00	6/29/2018 9:59:00	IMG_0028.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-29	10:04:00	6/29/2018 10:04:00	IMG_0029.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	13:11:00	6/30/2018 13:11:00	IMG_0034.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	13:16:00	6/30/2018 13:16:00	IMG_0035.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	13:30:00	6/30/2018 13:30:00	IMG_0036.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	14:43:00	6/30/2018 14:43:00	IMG_0037.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	16:58:00	6/30/2018 16:58:00	IMG_0043.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-01	11:07:00	7/1/2018 11:07:00	IMG_0045.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-01	17:03:00	7/1/2018 17:03:00	IMG_0047.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-04	12:29:00	7/4/2018 12:29:00	IMG_0059.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-04	17:58:00	7/4/2018 17:58:00	IMG_0061.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-05	14:44:00	7/5/2018 14:44:00	IMG_0063.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-05	17:08:00	7/5/2018 17:08:00	IMG_0064.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-06	8:42:00	7/6/2018 8:42:00	IMG_0065.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-06	11:18:00	7/6/2018 11:18:00	IMG_0066.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-06	12:03:00	7/6/2018 12:03:00	IMG_0067.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-07	7:38:00	7/7/2018 7:38:00	IMG_0070.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-07	13:38:00	7/7/2018 13:38:00	IMG_0072.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-08	14:32:00	7/8/2018 14:32:00	IMG_0077.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-08	17:06:00	7/8/2018 17:06:00	IMG_0078.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-09	17:36:00	7/9/2018 17:36:00	IMG_0084.AVI	Tupaia	glis	Tupaia glis	1	with 2 Rallina fasciata	
WL07	1.446863003	103.780639	2018-07-16	2018-07-13	15:01:00	7/13/2018 15:01:00	IMG_0113.AVI	Tupaia	glis	Tupaia glis	1		
WL07	1.446863003	103.780639	2018-07-16	2018-07-13	10:00:00	7/13/2018 10:00:00	IMG_0110.AVI	unid	sp.	unid sp.	1	bird	
WL07	1.446863003	103.780639	2018-07-16	2018-06-30	9:00:00	6/30/2018 9:00:00	IMG_0032.AVI	Varanus	salvator	Varanus salvator	1	with 2 Rallina fasciata	
WL08	1.44662898	103.781511	2018-07-16	2018-06-22	18:24:00	6/22/2018 18:24:00	IMG_0004.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-24	7:34:00	6/24/2018 7:34:00	IMG_0008.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-25	8:55:00	6/25/2018 8:55:00	IMG_0013.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-05	14:28:00	7/5/2018 14:28:00	IMG_0043.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-05	14:29:00	7/5/2018 14:29:00	IMG_0044.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-06	11:30:00	7/6/2018 11:30:00	IMG_0047.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-07	15:57:00	7/7/2018 15:57:00	IMG_0049.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-07	15:58:00	7/7/2018 15:58:00	IMG_0050.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-23	12:39:00	6/23/2018 12:39:00	IMG_0003.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-23	19:11:00	6/23/2018 19:11:00	IMG_0006.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-24	7:24:00	6/24/2018 7:24:00	IMG_0007.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-24	9:50:00	6/24/2018 9:50:00	IMG_0009.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-24	17:52:00	6/24/2018 17:52:00	IMG_0010.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-24	19:01:00	6/24/2018 19:01:00	IMG_0011.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-25	8:14:00	6/25/2018 8:14:00	IMG_0012.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-25	18:52:00	6/25/2018 18:52:00	IMG_0014.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-25	18:56:00	6/25/2018 18:56:00	IMG_0015.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-26	7:07:00	6/26/2018 7:07:00	IMG_0016.AVI	Rallina	fasciata	Rallina fasciata	1		

WL08	1.44662898	103.781511	2018-07-16	2018-06-26	16:57:00	6/26/2018 16:57:00	IMG_0017.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-26	18:55:00	6/26/2018 18:55:00	IMG_0018.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-27	18:44:00	6/27/2018 18:44:00	IMG_0021.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-30	7:05:00	6/30/2018 7:05:00	IMG_0028.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-30	8:50:00	6/30/2018 8:50:00	IMG_0029.AVI	Rallina	fasciata	Rallina fasciata	2		
WL08	1.44662898	103.781511	2018-07-16	2018-06-30	8:51:00	6/30/2018 8:51:00	IMG_0030.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-30	9:26:00	6/30/2018 9:26:00	IMG_0031.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-30	9:26:00	6/30/2018 9:26:00	IMG_0032.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-30	16:42:00	6/30/2018 16:42:00	IMG_0034.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-01	8:39:00	7/1/2018 8:39:00	IMG_0035.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-02	16:39:00	7/2/2018 16:39:00	IMG_0038.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-04	7:01:00	7/4/2018 7:01:00	IMG_0039.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-05	7:04:00	7/5/2018 7:04:00	IMG_0041.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-05	19:17:00	7/5/2018 19:17:00	IMG_0045.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-06	7:02:00	7/6/2018 7:02:00	IMG_0046.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-10	9:06:00	7/10/2018 9:06:00	IMG_0054.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-11	13:45:00	7/11/2018 13:45:00	IMG_0055.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-11	16:12:00	7/11/2018 16:12:00	IMG_0056.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-11	16:18:00	7/11/2018 16:18:00	IMG_0057.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-11	16:21:00	7/11/2018 16:21:00	IMG_0058.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-11	18:37:00	7/11/2018 18:37:00	IMG_0059.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-11	19:06:00	7/11/2018 19:06:00	IMG_0060.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-11	19:07:00	7/11/2018 19:07:00	IMG_0061.AVI	Rallina	fasciata	Rallina fasciata	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-28	11:03:00	6/28/2018 11:03:00	IMG_0022.AVI	Skink	sp.	Skink sp.	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-30	11:21:00	6/30/2018 11:21:00	IMG_0033.AVI	Skink	sp.	Skink sp.	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-07	10:41:00	7/7/2018 10:41:00	IMG_0048.AVI	Skink	sp.	Skink sp.	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-01	21:10:00	7/1/2018 21:10:00	IMG_0036.AVI	Strix	seloputo	Strix seloputo	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-01	21:11:00	7/1/2018 21:11:00	IMG_0037.AVI	Strix	seloputo	Strix seloputo	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-28	13:06:00	6/28/2018 13:06:00	IMG_0024.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-28	13:07:00	6/28/2018 13:07:00	IMG_0025.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-28	13:08:00	6/28/2018 13:08:00	IMG_0026.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-07-16	2018-06-29	16:18:00	6/29/2018 16:18:00	IMG_0027.AVI	Tupaia	glis	Tupaia glis	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-12	12:24:00	7/12/2018 12:24:00	IMG_0062.AVI	Varanus	salvator	Varanus salvator	1		
WL08	1.44662898	103.781511	2018-07-16	2018-07-12	12:25:00	7/12/2018 12:25:00	IMG_0063.AVI	Varanus	salvator	Varanus salvator	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	13:25:00	6/25/2018 13:25:00	IMG_0204.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	14:29:00	6/25/2018 14:29:00	IMG_0227.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	14:30:00	6/25/2018 14:30:00	IMG_0228.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	9:52:00	6/25/2018 9:52:00	IMG_0183.AVI	Chalcophaps	indica	Chalcophaps indica	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-23	19:00:00	6/23/2018 19:00:00	IMG_0115.AVI	Rallina	fasciata	Rallina fasciata	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	15:44:00	6/25/2018 15:44:00	IMG_0253.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-07-16	2018-06-22	13:14:00	6/22/2018 13:14:00	IMG_0016.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-23	11:52:00	6/23/2018 11:52:00	IMG_0101.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-23	11:52:00	6/23/2018 11:52:00	IMG_0102.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-24	17:15:00	6/24/2018 17:15:00	IMG_0135.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-24	18:22:00	6/24/2018 18:22:00	IMG_0139.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	16:26:00	6/25/2018 16:26:00	IMG_0256.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	16:29:00	6/25/2018 16:29:00	IMG_0261.AVI	unid	sp.	unid sp.	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-23	12:48:00	6/23/2018 12:48:00	IMG_0109.AVI	unid	sp.	unid sp.	1	bird	
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	14:41:00	6/25/2018 14:41:00	IMG_0233.AVI	unid	sp.	unid sp.	1	bird	
WL09	1.447597006	103.782669	2018-07-16	2018-06-22	11:53:00	6/22/2018 11:53:00	IMG_0012.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-22	11:54:00	6/22/2018 11:54:00	IMG_0013.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-22	15:54:00	6/22/2018 15:54:00	IMG_0051.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-22	18:26:00	6/22/2018 18:26:00	IMG_0056.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-23	13:58:00	6/23/2018 13:58:00	IMG_0113.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-24	15:45:00	6/24/2018 15:45:00	IMG_0130.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	7:11:00	6/25/2018 7:11:00	IMG_0180.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	10:22:00	6/25/2018 10:22:00	IMG_0184.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-07-16	2018-06-25	10:54:00	6/25/2018 10:54:00	IMG_0191.AVI	Tupaia	glis	Tupaia glis	1		
WL02	1.450000014	103.779533	2018-08-14	2018-07-31	10:54:58	7/31/2018 10:54:58	IMG_0018.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-07-31	11:30:28	7/31/2018 11:30:28	IMG_0019.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-07-31	11:34:24	7/31/2018 11:34:24	IMG_0020.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-07-31	11:44:34	7/31/2018 11:44:34	IMG_0021.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-07-31	11:50:54	7/31/2018 11:50:54	IMG_0022.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	08:32:12	8/3/2018 8:32:12	IMG_0023.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	08:42:42	8/3/2018 8:42:42	IMG_0024.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	12:02:24	8/3/2018 12:02:24	IMG_0025.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	12:05:16	8/3/2018 12:05:16	IMG_0026.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	12:42:26	8/3/2018 12:42:26	IMG_0027.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	13:01:48	8/3/2018 13:01:48	IMG_0028.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	13:13:10	8/3/2018 13:13:10	IMG_0029.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	13:14:44	8/3/2018 13:14:44	IMG_0030.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-03	13:18:12	8/3/2018 13:18:12	IMG_0031.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-07	01:04:42	8/7/2018 1:04:42	IMG_0038.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-07	01:10:12	8/7/2018 1:10:12	IMG_0039.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-07	01:11:24	8/7/2018 1:11:24	IMG_0040.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-07	01:13:22	8/7/2018 1:13:22	IMG_0041.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		

WL02	1.450000014	103.779533	2018-08-14	2018-08-08	12:13:52	8/8/2018 12:13:52	IMG_0045.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-08	12:21:20	8/8/2018 12:21:20	IMG_0046.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-08	12:31:00	8/8/2018 12:31:00	IMG_0047.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-08	12:32:22	8/8/2018 12:32:22	IMG_0048.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-08	12:44:50	8/8/2018 12:44:50	IMG_0049.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-08	12:51:08	8/8/2018 12:51:08	IMG_0050.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-08	12:53:24	8/8/2018 12:53:24	IMG_0051.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-08	12:54:46	8/8/2018 12:54:46	IMG_0052.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-09	16:12:42	8/9/2018 16:12:42	IMG_0053.AVI	Canis	lupus familiaris	Canis lupus familiaris	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-11	16:11:54	8/11/2018 16:11:54	IMG_0055.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-11	16:32:12	8/11/2018 16:32:12	IMG_0056.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-08-12	04:43:16	8/12/2018 4:43:16	IMG_0057.AVI	Canis	lupus familiaris	Canis lupus familiaris	2		
WL02	1.450000014	103.779533	2018-08-14	2018-07-16	13:11:34	7/16/2018 13:11:34	IMG_0009.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL02	1.450000014	103.779533	2018-08-14	2018-08-10	14:22:48	8/10/2018 14:22:48	IMG_0054.AVI	Macaca	fascicularis	Macaca fascicularis	1		
WL02	1.450000014	103.779533	2018-08-14	2018-07-18	10:54:24	7/18/2018 10:54:24	IMG_0010.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL02	1.450000014	103.779533	2018-08-14	2018-07-28	9:57:08	7/28/2018 9:57:08	IMG_0017.AVI	unid	sp.	unid sp.	1	bird	
WL04	1.446877001	103.779125	2018-08-14	2018-07-17	11:46:58	7/17/2018 11:46:58	IMG_0002.AVI	Amaurornis	phoenicurus	Amaurornis phoenicurus	2		
WL04	1.446877001	103.779125	2018-08-14	2018-08-03	12:15:04	8/3/2018 12:15:04	IMG_0004.AVI	Pycnonotus	goiavier	Pycnonotus goiavier	1		
WL04	1.446877001	103.779125	2018-08-14	2018-07-31	21:52:32	7/31/2018 21:52:32	IMG_0003.AVI	Rattus	sp.	Rattus sp.	1		
WL09	1.447597006	103.782669	2018-08-14	2018-07-18	16:08:44	7/18/2018 16:08:44	IMG_0210.AVI	Callosciurus	notatus	Callosciurus notatus	1		
WL09	1.447597006	103.782669	2018-08-14	2018-07-17	19:55:40	7/17/2018 19:55:40	IMG_0061.AVI	Rattus	tanezumi	Rattus tanezumi	1		
WL09	1.447597006	103.782669	2018-08-14	2018-07-16	11:31:06	7/16/2018 11:31:06	IMG_0003.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-08-14	2018-07-17	7:29:50	7/17/2018 7:29:50	IMG_0004.AVI	unid	sp.	unid sp.	1	squirrel or shrew	
WL09	1.447597006	103.782669	2018-08-14	2018-07-17	8:16:54	7/17/2018 8:16:54	IMG_0005.AVI	Tupaia	glis	Tupaia glis	1		
WL09	1.447597006	103.782669	2018-08-14	2018-07-17	8:36:44	7/17/2018 8:36:44	IMG_0006.AVI	Tupaia	glis	Tupaia glis	2		
WL09	1.447597006	103.782669	2018-08-14	2018-07-17	9:46:10	7/17/2018 9:46:10	IMG_0009.AVI	Tupaia	glis	Tupaia glis	1		

Appendix I

Recommended Planting Palette

Name	National Conservation Status	Habit
Acrostichum aureum	Common	Herb
Acrostichum speciosum	Common	Herb
Adinandra dumosa	Common	Tree
Alocasia longiloba	Common	Herb
Alpinia aquatica*	Critically endangered	Herb
Alstonia angustifolia	Common	Tree
Alstonia angustiloba	Common	Tree
Angiopteris evecta	Vulnerable	Herb
Antiaris toxicaria*	Critically endangered	Tree
Aphanamixis polystachya*	Endangered	Tree
Ardisia elliptica	Endangered	Tree
Arundina graminifolia	Common	Herb
Asplenium longissimum	Common	Epiphyte
Asplenium nidus	Common	Epiphyte
Baccaurea parviflora	Common	Tree
Baccaurea sumatrana*	Vulnerable	Tree
Barringtonia asiatica*	Critically endangered	Tree
Barringtonia racemosa*	Critically endangered	Tree
Beilschmiedia madang*	Endangered	Tree
Blechnum orientale	Common	Herb
Bouea oppositifolia*	Vulnerable	Tree
Callicarpa longifolia	Endangered	Shrub
Calophyllum inophyllum*	Critically endangered	Tree
Calophyllum soulattri	Critically endangered	Tree
Carallia brachiata	Endangered	Tree
Caryota mitis	Common	Tree
Centotheca lappacea	Critically endangered	Herb
Cerbera odollam*	Vulnerable	Tree
Cissus repens*	Critically endangered	Climber
Cleistanthus sumatranus*	Vulnerable	Tree
Clerodendrum laevifolium	Common	Tree
Costus speciosus	Common	Herb
Cratoxylum cochinchinense*	Endangered	Tree
Cratoxylum formosum	Endangered	Tree
Cyathea latebrosa	Vulnerable	Tree
Cyathula prostrata	Common	Shrub
Cymbidium finlaysonianum*	Critically endangered	Epiphyte
Cynometra ramiflora*	Critically endangered	Tree
Cyrtophyllum fragrans	Common	Tree
Cyrtostachys renda*	Presumed Nationally Extinct (NE)	Shrub
Davallia denticulata	Common	Epiphyte

Dendrobium crumenatum	Common	Epiphyte
Dillenia excelsa*	Critically endangered	Tree
Dillenia suffruticosa	Common	Shrub
Diospyros buxifolia*	Vulnerable	Tree
Dipterocarpus grandiflorus*	Vulnerable	Tree
Dolichandrone spathacea	Critically endangered	Tree
Drynaria quercifolia	Common	Epiphyte
Elaeocarpus mastersii	Common	Tree
Fagraea auriculata*	Critically endangered	Climber
Ficus deltoidea*	Critically endangered	Epiphyte
Ficus fistulosa	Common	Tree
Ficus recurva var. ribesoides	Critically endangered	Climber
Garcinia hombroniana*	Endangered	Tree
Gnetum gnemon*	Critically endangered	Tree
Gonystylus confusus*	Endangered	Tree
Guettarda speciosa*	Endangered	Tree
Guioa pleuropteris*	Vulnerable	Tree
Hanguana malayana*	Vulnerable	Herb
Heritiera littoralis	Endangered	Tree
Horsfieldia crassifolia*	Critically endangered	Tree
Horsfieldia irya*	Critically endangered	Tree
Horsfieldia sucosa*	Endangered	Tree
Hoya diversifolia	Critically endangered	Epiphyte
Ilex cymosa	Common	Tree
Ipomoea pes-caprae	Common	Climber
Ischaemum muticum	Common	Herb
Ixora congesta	Common	Shrub
Kleinhovia hospita*	Extinct	Tree
Leea angulata*	Critically endangered	Tree
Leea indica	Common	Tree
Leea rubra*	Extinct	Shrub
Lepisanthes rubiginosa	Common	Tree
Mallotus paniculatus	Common	Tree
Mangifera caesia*	Critically endangered	Tree
Mangifera odorata	Vulnerable	Tree
Maranthes corymbosa	Endangered	Tree
Melastoma malabathricum	Common	Shrub
Memecylon caeruleum*	Critically endangered	Tree
Memecylon pauciflorum*	Extinct	Tree
Molineria latifolia var. latifolia	Vulnerable	Herb
Morinda citrifolia		Tree
Mussaendopsis beccariana*	Endangered	Tree
Nephelium lappaceum*	Critically endangered	Tree

Palaquium obovatum	Vulnerable	Tree
Pandanus monotheca*	Endangered	Shrub
Parkia speciosa*	Vulnerable	Tree
Peltophorum pterocarpum	Critically endangered	Tree
Pentace triptera*	Endangered	Tree
Peronema canescens*	Extinct	Tree
Podocarpus polystachyus*	Critically endangered	Tree
Pometia pinnata*	Endangered	Tree
Popowia tomentosa*	Endangered	Tree
Pouteria obovata	Vulnerable	Tree
Premna serratifolia	Vulnerable	Climber
Rapanea porteriana*	Vulnerable	Shrub
Rothmannia macrophylla	Vulnerable	Shrub
Sandoricum koetjape*	Endangered	Tree
Schumannianthus dichotomus*	Critically endangered	Herb
Shorea curtisii*	Vulnerable	Tree
Sindora wallichii*	Critically endangered	Tree
Spathoglottis plicata	Common	Herb
Sterculia cordata	Critically endangered	Tree
Sterculia macrophylla*	Critically endangered	Tree
Sterculia parvifolia*	Critically endangered	Tree
Sterculia rubiginosa*	Vulnerable	Tree
Streblus elongatus*	Vulnerable	Tree
Suregada multiflora*	Critically endangered	Shrub
Syzygium glaucum*	Vulnerable	Tree
Syzygium myrtifolium*	Extinct	Tree
Syzygium polyanthum	Vulnerable	Tree
Tarenna odorata*	Critically endangered	Shrub
Tristaniopsis obovata*	Critically endangered	Tree
Tristaniopsis whiteana*	Endangered	Tree
Tristellateia australasiae*	Endangered	Climber

*-Planted in Admiralty Park

Appendix J

Tree Protection and Conservation Guidelines

METHOD STATEMENT FOR TREE PROTECTION AND CONSERVATION GUIDELINES

By

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Lead Arborist

Camphora Pte Ltd

ISA certified

SG-0117A

CONTENT REQUIREMENTS

This document outlines specific measures to protect trees during construction or other site disturbance. The content and scope of the document will vary based on the site, type of construction, tree species, tree location and other factors.

TREE PROTECTION AND CONSERVATION GUIDELINES

This section outlines the general provisions for tree protection before, during and after construction. Additional measures may be added by the attending arborist on a case-by-case basis.

PRE-DEMOLITION/PILING/CONSTRUCTION

1. Pre-Construction Meeting

   The attending arborist shall attend a pre-construction meeting with the project contractor or construction supervisor to explain the tree protection and monitoring requirements as outlined in this document.

   In addition, the project contractor or construction supervisor shall complete the 'VERIFICATION OF TREE PROTECTION CHECKLIST' as attached in Annex A before the onset of the construction.

1.1 Tree Protection Zone

Prior to any site clearing (demolition works), piling works, grading, trenching or other soil disturbance, a tree protection zone (TPZ) must be installed as follows:

i. Type

The barriers should be temporary, made of a hard material, 1.8-m tall and firmly installed into the ground.

ii. Ground protection

Mulching material (can be compost or woodchips) at 100-mm thick to be laid within the TPZ. If woodchips are used, termicide treatment is necessary to prevent the introduction of harmful termites.

Apply complete fertilizer (N:P:K 15:15:15) upon or together with the application of mulch.

iii. Signage

A readily-visible and waterproof sign shall be installed on all sides of the fencing around each individual protected tree. The size of each sign must be a minimum of 300mm wide and must contain the wording below:

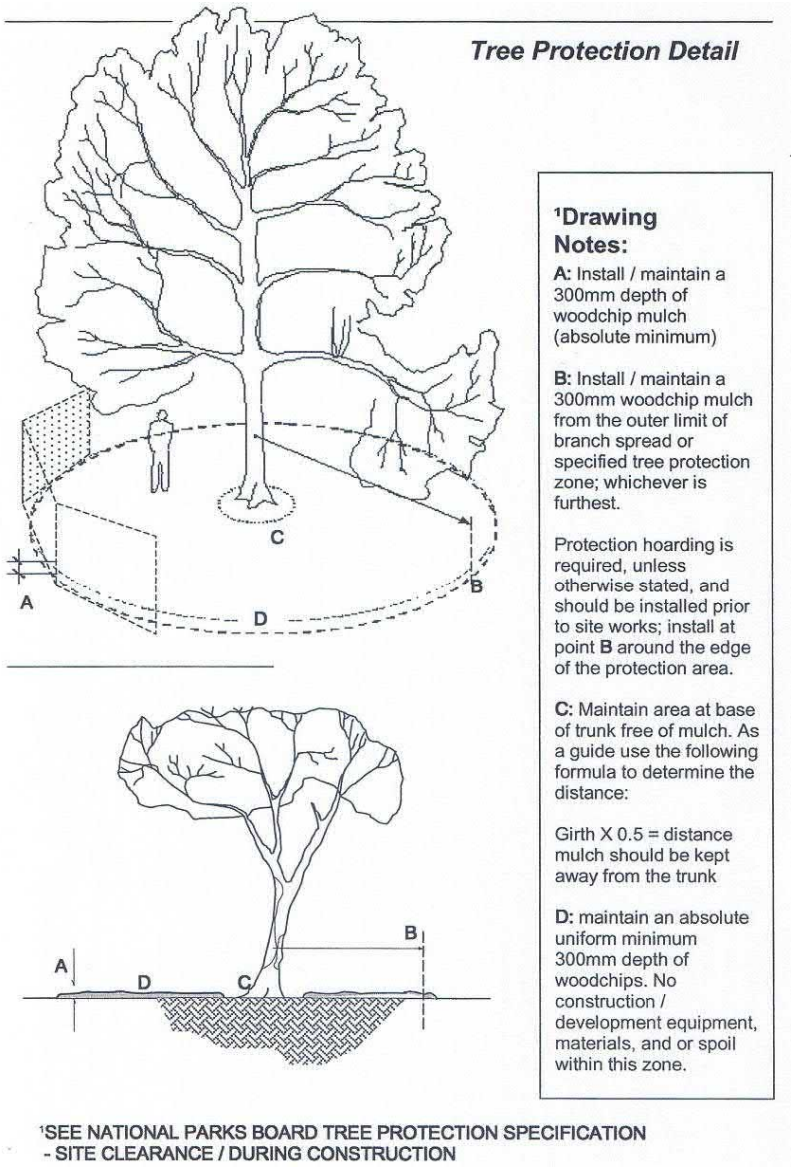


Entry prohibited. This fence shall remain in place throughout the entire construction period.

iv. Fencing installation

Installation must be approved by the attending arborists and/or the approved authority prior to construction.

A diagrammatic representation of a proper Tree protection zone is presented below.



1.2 Tree pruning and removal

Various trees may need to be pruned away from structures or proposed construction activity. ***Construction or contractor personnel shall not attempt pruning or removal.*** Consultation and written approval with attending arborist must be obtained prior to pruning.

Removal of trees adjacent to trees that are to be retained requires planning and skilled arboriculture workers. Trees should not be removed by pushing with excavators/heavy

machinery or with lumberjack (one cut) methods. Directional felling methods (notch and back-cut) should be deployed during removal of trees.

Removal of trees that extend into branches or roots of protected trees shall not be attempted by the demolition or construction crew, or by grading or other heavy equipment. Before removing tree stumps, the project manager shall seek the advice from the attending arborist determine if roots are entangled with trees that are to remain. If so, these stumps shall have their roots severed before extracting them.

1.3 Site Clearance

To avoid lumber jack felling of trees that may severely damage the canopy of conserved trees, it is recommended that qualified (see Point 4.3 Tree Conservation Guidelines) Arboriculture contractors be engage to fell trees adjacent to protected trees to ensure that the trees (when cut) fall away from the protected trees and their associated TPZs.

Contractors carry out tree felling works near assigned TPZs of conserved trees should

i. Employ directional felling through the use of notch and back cuts

ii. Deploy cranes to tension trunks in the direction of the drop

iii. Carry out pruning of canopy branches to remove entangling branches

iv. If trees to be removed are taller than neighbouring trees to be retained, removal of branches should be carried out in a controlled manner using ropes and cranes to avoid damaging canopy of the lower trees.

v. To avoid pruning of conserved trees at the proximity unless consultation and approval from attending arborist has been obtained.

vi. No tree should be removed by pushing with an excavator or heavy machinery.

DURING DEMOLITION/PILING/CONSTRUCTION

2. Tree Protection Zone Restrictions

- No ground disturbance, grading, trenching or other construction activities shall occur within the TPZ except as specified and/or approved by the attending arborist or authority.
- No construction material, debris, machinery (e.g. generators) or other construction waste shall be stored within the TPZ. Weight and presence of these materials

increases soil compaction and reduces the area exposed for water infiltration and gaseous exchange.



Figure 1: Construction material and heavy machinery are prohibited within the TPZ

- Excavation works within the TPZ are strictly prohibited. Unless otherwise specified by the attending arborist, all work done within the TPZ shall be completed with manual trenching with hand tools or other hand held power tools that will not cause any root/tree damage.

  If roots need to be cut, it shall be done using proper equipment (e.g. pruning saw, chain saw) under the supervision of the attending arborist.



Figure 2: Trial trench by skilled workers using hand tools exposing root architecture

- Nailing, tying or pasting of materials on trees is prohibited. The tree shall not be used as an anchor for supporting structures during the construction.



Figure 3: Using tree as anchor may damage its bark.



Figure 4: No nails shall be driven into the tree as it promotes infiltration of pests/diseases

- Phytotoxic materials such as fuels, oils, cement, chemicals, and paint shall be kept away and stored/mixed at least 2.5m from the tree protection zone. Such chemicals can significantly change the cation exchange capacity and pH of the soil, rendering nutrient uptake inefficient and creating an environment too toxic for the roots to grow.

  Construction slug especially from piling works should not be deposited within the TPZ. Such sludge is usually high in clay content and when layered over and within the TPZ could significantly alter the water infiltration and gaseous exchange rates of the root absorption area of the tree.

Canvass sheets/Eco-mat must be laid on the existing soil near the tree in view of soil protection during the demolition, drilling or other construction activities pertaining to concrete structures.



Figure 5: Construction cement deposited at tree base.



Figure 6: Tree showing signs of decline overtime.

- Lowering the grade around trees can have an immediate and long-term effect on trees. Typically, most roots are within the top 1m of soil, and most of the fine roots active in water and nutrient absorption are in the top 300mm.

  A) Grade changes within the TPZ are not permitted.

  B) Grade changes outside the TPZ shall not significantly alter drainage.

C) Grade changes under specifically approved circumstances shall not allow more than 200mm of fill soil or allow more than 150mm of existing soil to be removed from natural grade, unless mitigated.

D) Grade fills over 200mm or impervious overlay shall incorporate an approved permanent aeration system, permeable material, or other approved mitigation.

E) Grade cuts exceeding 150mm shall incorporate retaining walls or an appropriate transition equivalent.

No removal of the TPZ will be permitted under any circumstances.



Figure 7: Inappropriate installation/maintenance of TPZ during construction.

2.2 Proximity of Heavy machinery/vehicles

Heavy vehicles and machinery (e.g. excavators, piling cranes, 10 wheelers) movement should be limited near TPZs. Temporary access/passageways should be planned to avoid conserved trees.

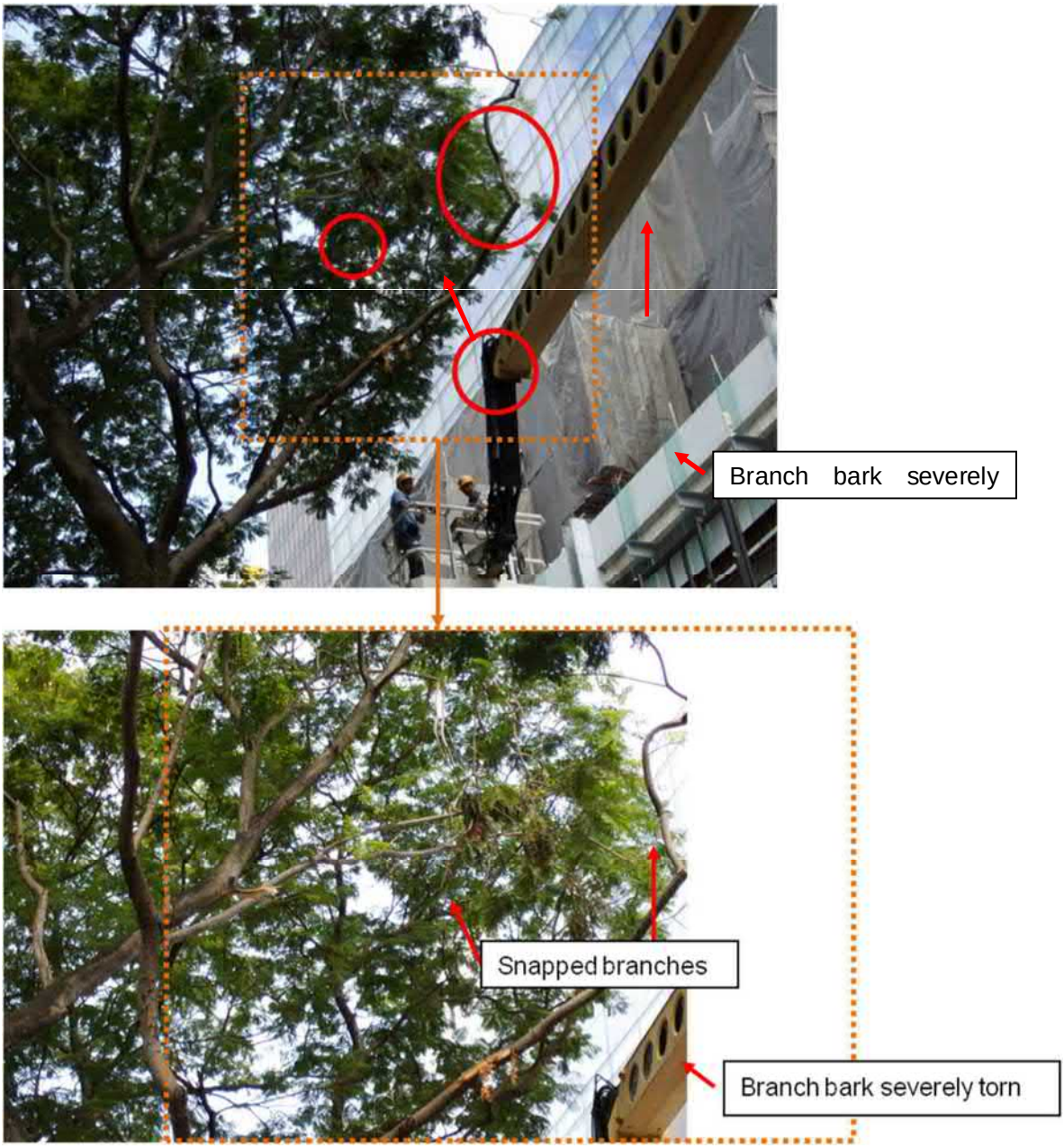


Figure 8: Tree branches were severed due to the negligence of the crane operator.

2.3 Drainage Considerations

In the event that water ponding conditions develop in the course of construction due to change in grade/platform levels, construction events or any other unforeseeable factors, the contractor is required to improve drainage around or within the TPZ in consultation with the attending arborist.

2.4 Trenching, Excavation and Equipment use

Trenching, excavation or boring within the TPZ shall be limited to activities approved by the architect and/or attending Arborist. Explore alternatives for trenching outside the root zone. Avoid exposing roots during hot, dry weather. Backfill trenches as soon as possible with soil and soak with water the same day. Small roots can die in 10 to 15 minutes and large roots may not survive an hour of exposure. If the trench must be left open all roots must be kept moist by wrapping them in peat moss and burlap.

i. Root Severance

No roots greater than 0.2m in diameter shall be cut without approval of the attending Arborist. Tunneling under roots is the approved alternative. Prior to excavation for foundation/footing/walls, or grading or trenching within the TPZ, roots shall be severed cleanly outside the TPZ to the depth of the planned excavation. When roots must be cut, they shall be cut cleanly with a sharp saw to sound wood and flush with the trench site.



Figure 9: Tunneling under roots.

ii. Excavation

Any approved excavation, demolition, or extraction of material shall be performed with equipment that is placed outside the TPZ. Hand digging, hydraulic, or pneumatic excavation (e.g. air spading) are permitted methods for excavation within the TPZ.



Figure 10: Root exploratory works using an air spade. Air spading avoids damage of structural and even feeder roots of the tree.

iii. Heavy Equipment

Use of backhoes, Ditch-Witches, steal tread tractors or other heavy vehicles within the TPZ is prohibited unless approved by the attending Arborist. If allowed, a protective root buffer is required.

2.5 Tree Care

In the course of construction, the following measures may be necessary to reduce the effects of construction stress on protected trees. Quantum, duration and extent to be advised by attending arborist.

(A) Fertilization

A1 Vertical trenches and Nutrient Sinks

Create vertical trenching and nutrient sinks. These nutrient sinks should go down to at least 300mm deep and should be filled with high grade compost and 12% Humic acid (dilution 1:100). These sinks will act to reduce construction stress by conditioning the soil, increasing soil microbiological activity and increasing organic matter At least 24 numbers of vertical trenches / nutrient sinks are required for trees greater than 2m in girth. Vertical trenches for trees under 2m

in girth will be determined empirically by the attending arborist and will take into account site conditions, tree species and its pre construction vigor. Top up nutrient sinks every 3 months.

A2 Soil Injection of Biostimulants

Mandatory if TPZ has been infringed into, soil compaction has occurred, tree condition has observed to have declined (indicators: reduction in Live crown ratios, twig die back at canopy and change in leaf colour/size/density)

- **Purpose :** To de-compact soil using a hydraulic pressurized delivery of biostimulants that both hydrates and aerates at the same time. Aim to reduce compaction to less than 400psi in the first 500mm of the soil.
- Mixed bio stimulants – serves 2 functions

  Decompaction
- Humic acid – as soil conditioner and chelating agent (Nutrients are mobilized in forms that the plants can accept), facilitate release of nutrients and reduces leaching. Also improves water holding capacities of soil.
- Liquid gypsum / Dolomite – soil conditioner, improve soil structure and facilitate release of nutrients in clay soils typical of local conditions.

  To feed and increase soil microbiology to increase tree vigor post damage. Soil microbiology helps nutrient uptake and encourages healthy root growth critical to prevent construction stress.

- Mollases – High CE for immediate uptake,
- Fish Kelp – Protein source. Organic fertilisers
- Slow release fertilizers (Osmocote)

(B) Watering

- Water supplement during periods of drought.
- Watering duration and extent depends on site conditions and species.
- Watering is carried out until first signs of inundation are observed (i.e. water infiltration observe to slow down significantly).

(C) Myconate treatment

- To trigger and stimulate growth of existing mycorrhizae.

(D) Pesticide treatment

- To control pest (e.g. termites, borers, caterpillars etc) when it occurs.
- Fungicide or bacteriocide as required or as determined by attending arborist to control microbe pathogens.

(E) Additonal pruning

To be carried out in consultation with the attending Arborist. Trees are living things and may require some form of pruning during the course of the development.

- Crown cleansing- Prune to remove dead branches that may have developed through time.
- Crown lifting- Prune to lift crown to avoid new amenities.
- Crown thinning- Prune to reduce canopy branches and loading.

Structural pruning (including crown reduction) to remove branches that may obstruct new amenities and/or movement of critically necessary equipment may require the planning and standing supervision of the attending arborist.

2.6 Engaging Arboriculture Contractors

All arboriculture works should be carried out by skilled and trained arboriculture teams. As such, it is preferred that only Arboriculture contractors which have at least 8 years working experience and must show previous work experience in developments of similar size or complexity. Arboriculture contractors should meet NParks safety requirements for work at height, LTA's requirements for temporary works along roadsides (where necessary) and have a certified arborist to supervise the pruning/felling/planting works.

All arboriculture workers engaged in tree climbing and chainsaw work shall possess a valid basic tree climbing certification base upon demonstrated competence in the WSQ module conducted by CUGE or an equivalent WSQ approved training organization.

Each Arboriculture crew shall possess the following VALID competences,
Operation of chainsaw for ground work (LS-MT-103E-1)
Chainsaw safety and maintenance (LS-MT-102E-1)
Perform formative pruning of young trees (LS-MT-114E-1)
Provide Arboriculture support on site (LS-MT-116E-1)
Workplace safety and health – operators (ES-WSH-101G-1)
Respond to Emergency (LS-HM-208E-1)
Perform advance rigging and climbing techniques (LS-HM-308S-1)
Perform aerial tree access and aerial rescue skills (Ls-HM-204S-1)
Implement and apply appropriate risk and safety management to sector practices (LS-BP-301S-1)
Prepare risk assessment report (LS-HM-406S-1)
Operate and work from an elevated work platform (CUGE-ARB-3501)

POST-CONSTRUCTION

3. Soft Landscaping

Ground works, site preparation and implementation of all landscaping near protected trees must be undertaken carefully.

TPZ barriers can only be removed at this juncture for the purpose. However, when working near trees, cultivation of soils in these areas must be cautiously handled using hand tools. Planting of shrubs shall be at a distance of at least 300mm away from existing root collar.

Avoid changes to ground levels or unnecessary compaction of soils within proximity to existing trees during the course.



Figure 10: New plantings at a minimum distance of 300mm (all round) from root collar

ANNEX A

VERIFICATION OF TREE PROTECTION CHECKLIST

Note: The project contractor or construction supervisor shall verify in writing that all **preconstruction** tree preservation conditions have been met as follows:

Submitted by: _____

Company/Project: _____

Date/Time: _____

S/N	Action	Checked (✔)	Remarks
1	Installation of tree fencing around identified trees within/near site (hard material at 1.8m tall)		
2	Tree protection zone (TPZ) dimensions meets specifications (from NParks and/or attending arborist)		
3	Warning signs prominently displayed on all sides of the fencing, including designated tree number		
4	Removal of construction material (ie machinery, debris, tools etc) within TPZ		
5	Mulching of high grade compost of 100mm thick around identified trees		
6	Completion of tree pruning (if necessary) under the supervision/written approval with the attending arborist		
7	Establishment of a tree maintenance schedule according to arborist recommendations (to be submitted to attending arborist)		

Verified by (attending arborist): _____

Date/Time: _____

Appendix K

Fauna Response Plan

Fauna Response and Rescue Plan

Within Hoarding	Outside of Hoarding/			Open Areas	All
Animal type	**Mammals**	**Snakes**	**Others (e.g. Squirrels, Birds, Turtles, Frogs)**	**All**	**Dead/Injured**
Examples	Wild Boar, Sambar Deer, Leopard Cat, Pangolin, Malayan Porcupine, Lesser Mousedeer, Civets	Venomous and non-venomous	All	All	All
Risk to human	High (Wild Boar); Low (Sambar Deer, Leopard Cat) Low (Others)	High	Low	Low to High	Low
Animal condition	Alive, moving or resting	Alive, moving or resting	Alive, moving or resting	Alive, moving or resting	Dead/Injured
Response	1. Stop works in the vicinity. 2. Barricade affected area with water barrier or equivalent. 3. Report to NParks and Ecologist with location and description of animal. 4. Ecologist to organise shepherding to move animal out of hoarding, as soon as possible. 5. Once animal has successfully been shepherded out, works can resume. 6. For colugos, Ecologist to collect and relocate within RRNP ~1km away. 7. Fill out and submit Wildlife Incident Form.	1. Stop works in the vicinity. 2. Barricade affected area with water barrier or equivalent. 3. Report to NParks and Ecologist with location and description of animal. 4. Ecologist to relocate within RRNP ~1km away. 5. Once animal has been relocated, works can resume. 6. Fill out and submit Wildlife Incident Form.	1. Report to NParks and Ecologist with location and description of animal. Send photo of animal via WhatsApp to Ecologist. 2. If species is of conservation significance, Ecologist will head to site to relocate animal. Once animal has been relocated, works can resume. 3. Fill out and submit Wildlife Incident Form.	1. Stop works in the vicinity. 2. Let the animal move away, and keep a distance. 3. If the animal does not move away, inform the NParks and Ecologist for further actions.	1. Report to NParks and Ecologist with location and description of animal. 2. If injured, stop works, barricade the area and call WRS for collection. 3. Dead specimens in good condition to be donated to Lee Kong Chian Natural History Museum. 4. Dead specimens in bad condition, bury on site. 5. Fill out and submit Wildlife Incident Form.
Remarks	No attempts shall be made by Contractors to handle the animal.				

Appendix L

Wildlife Incident Form

WILDLIFE INCIDENT FORM

Date (YYYY/MM/DD):	Time:
Description of Location:	GPS Coordinates:
Wildlife Observed:	Animal Condition: ☐ Alive ☐ Killed ☐ Dead ☐ Injured Animal Activity: ☐ Moving ☐ Resting ☐ Trapped
Photographs Taken: ☐ Yes ☐ No	NParks Notified: ☐ Yes ☐ No Name of NParks Staff Notified: _____
Describe Incident (e.g., activities being carried out; what animal was doing; personnel involved):	
Actions Taken:	
Reported by: _____ Contact #: _____	Reported to: _____ Contact #: _____
Remarks:	

Appendix M

Fauna Inspection Form

FAUNA INSPECTIONS

Inspection Round:
Date of Inspection:
Start & End Time:
Project Title:

Main Contractor:
Conducted by:
Weather Conditions:

Fortnightly fauna inspections across all zones on site include: (a) inspection of hoarding integrity and possibility of wildlife entry into site, (b) inspection of erosion control blankets for wildlife entrapment, and (c)inspection within and around TPZs on site for wildlife presence.
Ad-hoc fauna inspections will be conducted when the need arises, e.g. when vegetation needs to be removed on site.

S/N	Activity	Zone/s Inspected	Findings	Coordinates (Lat, Lon)	Remarks / Photo/s	Actions (to be) taken

Appendix N

Prefelling Tree Inspection Form

PRE-FELLING FAUNA INSPECTION FORM							Personnel:				**Assessment criteria** **FELL:** Ready to fell. No findings or old nests; highly mobile fauna **S-EM:** Fell with supervision by Environmental Manager. Possibly active nest, presence of bird's nest fern, staghorn fern, thick vegetation, tree holes or cavities, ground burrows, logs and debris piles **S-ECO:** Fell with supervision by Ecologist. During bird breeding season. Possibly active nest, presence of bird's nest fern, staghorn fern, thick vegetation, tree holes or cavities **DO NOT FELL:** Sedentary fauna, active nest or burrow; bee or wasp nest			
Inspection date:			Valid until:				Weather:							
Site:			Bird breeding season (Mar-Jul)?: Y / N				Time in:		Time out:					
Tree no.	Fauna		Nests		Thick vegetation		Tree holes/cavities		Ground burrows		Logs and debris piles		Assessment	Remarks
	Details (species, behavior, height)	Photo no.	Details (nest type; epiphytic fern; species, eggs or young present)	Photo no.	Details (climbers, oil palm, nibong palm, etc.)	Photo no.	Details (species, eggs/young present, height)	Photo no.	Details (species, eggs/young present)	Photo no.	Details	Photo no.		

PRE-FELLING FAUNA INSPECTION FORM		Personnel:		**Assessment criteria** **FELL:** Ready to fell. No findings or old nests; highly mobile fauna **S-EM:** Fell with supervision by Environmental Manager. Possibly active nest, presence of bird's nest fern, staghorn fern, thick vegetation, tree holes or cavities, ground burrows, logs and debris piles **S-ECO:** Fell with supervision by Ecologist. During bird breeding season. Possibly active nest, presence of bird's nest fern, staghorn fern, thick vegetation, tree holes or cavities **DO NOT FELL:** Sedentary fauna, active nest or burrow; bee or wasp nest
Inspection date:	Valid until:	Weather:		
Site:	Bird breeding season (Mar-Jul)?: Y / N	Time in:	Time out:	

Tree no.	Fauna		Nests		Thick vegetation		Tree holes/cavities		Ground burrows		Logs and debris piles		Assessment	Remarks
	Details (species, behavior, height)	Photo no.	Details (nest type; epiphytic fern; species, eggs or young present)	Photo no.	Details (climbers, oil palm, nibong palm, etc.)	Photo no.	Details (species, eggs/young present, height)	Photo no.	Details (species, eggs/young present)	Photo no.	Details	Photo no.		

Appendix O

Arboriculture Report

ARBORICULTURE REPORT SUMMARY TABLE

Tree ##	Species	Status	Girth	DBH	Height	H/D	Observation	Remove or Retain	Remarks
M001	Nypa fruticans	Vulnerable	10m spread	#VALUE!	8	#VALUE!	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M002	Avicennia rumphiana	Common	2.4	0.8	6	8	1) Good health 2) Decay on branches 3) Uprooting pressure observed 4) No target	Remove	To remove independent of proposed development
M003	Avicennia rumphiana	Common	2.3	0.7	18	25	1) Good health 2) Cavity on trunk	Remove	To remove independent of proposed development
M004	Avicennia rumphiana	Common	2.1	0.7	18	27	1) Good health 2) Fungal fruiting bodies on trunk suggesting internal decay	Remove	To remove independent of proposed development
M005	Avicennia rumphiana	Common	1.8	0.6	12	21	1) Good health 2) No significant defects 3) Lean towards S 4) Fungal fruiting bodies on trunk suggesting internal decay	Retin	1) Not directly affected by proposed development 2) Resistograph assessment is recommended to detect internal decay.
M006	Rhizophora mucronata	Common	1.5	0.5	10	21	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M007	Avicennia alba	Common	1.6	0.5	12	24	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M008	Avicennia rumphiana	Common	1.8	0.6	9	16	1) Good health 2) Pocket decay on primary branches	Retain	Not directly affected by proposed development
M009	Avicennia officinalis	Common	1.85	0.6	10	17	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M010	Lumnitzera littorea	Endangered	0.8	0.3	8	31	1) Good health 2) Uprooted	Remove	To remove independent of proposed development
M011	Heritiera littoralis	Endangered	0.35	0.1	5	45	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M012	Xylocarpus granatum	Common	1.1	0.4	5	14	1) Average health 2) Decay on trunk 3) Dieback at canopy	Remove	To remove independent of proposed development
M013	Avicennia rumphiana	Common	1.8	0.6	16	28	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M014	Cyrtophyllum fragrans	Common	2.3	0.7	18	25	1) Average health 2) Die back at canopy	Remove	Directly affected by proposed development
M015	Lindera lucida	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M016	Vitex pinnata	Common	1.8	0.6	9	16	1) Poor health 2) Decay on primary branch 3) Low bifurcation	Remove	Directly affected by proposed development
M017	Falcataria moluccana	Exotic	2.2+1.9	#VALUE!	20	#VALUE!	Annex 5	Remove	Annex 5
M018	Macaranga gigantea	Common	1.7	0.5	16	30	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M019	Pternandra coerulescens	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M020	Acacia auriculiformis	Exotic	1.5	0.5	10	21	Annex 5	Remove	Annex 5
M021	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Annex 5
M022	Pouteria obovata	Vulnerable	0.8	0.3	12	47	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M023	Pouteria obovata	Vulnerable	1.1	0.4	12	34	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M024	Syzygium polyanthum	Vulnerable	0.6	0.2	12	63	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M025	Falcataria moluccana	Exotic	1.9	0.6	20	33	Annex 5	Remove	Annex 5
M026	Pouteria obovata	Vulnerable	0.3	0.1	3	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M027	Pouteria obovata	Vulnerable	0.45	0.1	8	56	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M028	Pouteria obovata	Vulnerable	0.8+0.3	#VALUE!	8	#VALUE!	1) Good health 2) Decay at tree base on smaller trunk	Remove	Directly affected by proposed development
M029	Pouteria obovata	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M030	Falcataria moluccana	Exotic	2.4	0.8	20	26	Annex 5	Remove	Annex 5
M031	Syzygium polyanthum	Vulnerable	0.6	0.2	10	52	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M032	Falcataria moluccana	Exotic	2.8	0.9	20	22	Annex 5	Remove	Annex 5
M033	Falcataria moluccana	Exotic	1.8	0.6	10	17	Annex 5	Remove	Annex 5
M034	Falcataria moluccana	Exotic	2	0.6	18	28	Annex 5	Remove	Annex 5
M035	Falcataria moluccana	Exotic	2.1	0.7	18	27	Annex 5	Remove	Annex 5
M036	Spathodea campanulata	Exotic	1.5	0.5	9	19	Annex 5	Remove	Annex 5
M037	Ficus benghalensis	Exotic	4.0 spread	#VALUE!	10	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M038	Oncosperma tigillaria	Vulnerable	0.2	0.1	1.8	28	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M039	Porterandia anisophylla	Vulnerable	0.2	0.1	2	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

M040	Pouteria obovata	Vulnerable	0.01	0.0	1.5	471	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M041	Oncosperma tigillaria	Vulnerable	0.4	0.1	3	24	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M042	Cyathea latebrosa	Vulnerable	0.4	0.1	3	24	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M043	Falcataria moluccana	Exotic	5	1.6	22	14	Annex 5	Remove	Annex 5
M044	Pouteria obovata	Vulnerable	0.7	0.2	9	40	1) Good health 2) No significant defects 3) Growing beside S0030	Remove	Directly affected by proposed development
M045	Cerbera odollam	Vulnerable (Planted)	1.3	0.4	9	22	1) Good health 2) No significant defects 3) Lean towards NW	Remove	Directly affected by proposed development
M046	Oncosperma cf. horridum	Vulnerable	2.0 spread	#VALUE!	8	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M047	Oncosperma tigillaria	Vulnerable	0.4	0.1	4	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M048	Lindera lucida	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M049	Pouteria obovata	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M050	Ficus variegata	Common	1.9	0.6	14	23	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M051	Pouteria obovata	Vulnerable	0.4	0.1	4	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M052	Lindera lucida	Vulnerable	0.1	0.0	2	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M053	Oncosperma tigillaria	Vulnerable	1.5 spread	#VALUE!	6	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M054	Oncosperma tigillaria	Vulnerable	0.8	0.3	7	28	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M055	Lithocarpus cantleyanus	Critically endangered	0.3	0.1	4	42	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M056	Plectocomia elongata	Vulnerable	climber	#VALUE!	-	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M057	Lithocarpus conocarpus	Critically endangered	0.05	0.0	1.5	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M058	Lithocarpus cantleyanus	Critically endangered	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M059	Oncosperma tigillaria	Vulnerable	0.9	0.3	8	28	1) Good health 2) No significant defects 3) Clusters x3	Remove	Directly affected by proposed development
M060	Oncosperma tigillaria	Vulnerable	0.6	0.2	2	10	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M061	Plectocomia elongata	Vulnerable	climber	#VALUE!	-	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M062	Hevea brasiliensis	Exotic	1.5	0.5	14	29	1) Poor health 2) No significant defects	Remove	Directly affected by proposed development
M063	Oncosperma tigillaria	Vulnerable	0.8	0.3	3	12	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M064	Oncosperma tigillaria	Vulnerable	1	0.3	7	22	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M065	Pouteria obovata	Vulnerable	0.3	0.1	5	52	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M066	Pouteria obovata	Vulnerable	0.4	0.1	4	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M067	Porterandia anisophylla	Vulnerable	0.1	0.0	2	63	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M068	Pouteria obovata	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M069	Porterandia anisophylla	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M070	Oncosperma tigillaria	Vulnerable	0.3	0.1	4	42	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M071	Memecylon paniculatum	Critically endangered	0.1	0.0	5	157	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M072	Hevea brasiliensis	Exotic	1.55	0.5	18	36	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M073	Elaeis guineensis	Exotic	2	0.6	9	14	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M074	Memecylon paniculatum	Critically endangered	0.05	0.0	1	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M075	Oncosperma tigillaria	Vulnerable	0.4	0.1	4	31	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M076	Elaeis guineensis	Exotic	1.8	0.6	4	7	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M077	Oncosperma tigillaria	Vulnerable	5.0 spread	#VALUE!	10	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M078	Oncosperma horridum	Vulnerable	1.1	0.4	7	20	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M079	Plectocomia elongata	Vulnerable	climber	#VALUE!	-	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

M080	Oncosperma tigillaria	Vulnerable	1.2	0.4	5	13	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M081	Porterandia anisophylla	Vulnerable	0.05	0.0	1.2	75	1) Good health 2) No significant defects 3) Clusters x7 in proximity	Remove	Directly affected by proposed development
M082	Oncosperma tigillaria	Vulnerable	1	0.3	4	13	1) Good health 2) No significant defects 3) Clusters in proximity	Remove	Directly affected by proposed development
M083	Dillenia suffruticosa	Common	1.5	0.5	6	13	1) Good health 2) Decay on trunk 3) Multi-trunk 4) On slope	Remove	Directly affected by proposed development
M084	Falcataria moluccana	Exotic	2.4	0.8	20	26	Annex 5	Remove	Annex 5
M085	Falcataria moluccana	Exotic	3.15	1.0	20	20	Annex 5	Remove	Annex 5
M086	Falcataria moluccana	Exotic	2.1	0.7	18	27	Annex 5	Remove	Annex 5
M087	Falcataria moluccana	Exotic	3.6	1.1	20	17	Annex 5	Remove	Annex 5
M088	Lindera lucida	Vulnerable	0.05	0.0	1.6	101	1) Good health 2) No significant defects 3) Clusters in proximity	Remove	Directly affected by proposed development
M089	Ficus aurata	Vulnerable	0.01	0.0	1.5	471	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M090	Lindera lucida	Vulnerable	0.05	0.0	1.7	107	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M091	Litsea firma	Vulnerable	0.1	0.0	2.5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M092	Ficus aurata	Vulnerable	0.05	0.0	1.2	75	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M093	Syzygium palembanicum	Vulnerable	0.1	0.0	16	503	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M094	Pouteria obovata	Vulnerable	0.1	0.0	1.5	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M095	Litsea firma	Vulnerable	0.1	0.0	1	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M096	Syzygium palembanicum	Vulnerable	0.05	0.0	3	189	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M097	Lindera lucida	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M098	Litsea firma	Vulnerable	0.1	0.0	1.7	53	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M099	Litsea firma	Vulnerable	0.05	0.0	1.8	113	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M100	Ficus aurata	Vulnerable	0.05	0.0	1.9	119	1) Good health 2) No significant defects 3) Clusters x3 in proximity	Remove	Directly affected by proposed development
M101	Lindera lucida	Vulnerable	0.1 - 0.2	#VALUE!	4	#VALUE!	1) Good health 2) No significant defects 3) Clusters x3 in proximity	Remove	Directly affected by proposed development
M102	Syzygium palembanicum	Vulnerable	0.05	0.0	3	189	1) Good health 2) No significant defects 3) Clusters x3 in proximity	Remove	Directly affected by proposed development
M103	Syzygium palembanicum	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects 3) Clusters x3 in proximity	Remove	Directly affected by proposed development
M104	Pouteria obovata	Vulnerable	0.01	0.0	3.2	1006	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M105	Cyrtophyllum fragrans	Common	2.5	0.8	18	23	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M106	Falcataria moluccana	Exotic	1.7	0.5	10	18	Annex 5	Remove	Annex 5
M107	Syzygium palembanicum	Vulnerable	0.5	0.2	10	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M108	Syzygium palembanicum	Vulnerable	0.01	0.0	1.7	534	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M109	Cyrtophyllum fragrans	Common	2	0.6	18	28	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M110	Cyrtophyllum fragrans	Common	1.65	0.5	18	34	1) Good health 2) No significant defects 3) Root flare obvious 4) Slight lean to west	Remove	Directly affected by proposed development
M111	Syzygium palembanicum	Vulnerable	0.01	0.0	2	629	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M112	Lindera lucida	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M113	Syzygium palembanicum	Vulnerable	0.01	0.0	1.8	566	1) Good health 2) No significant defects 3) Clusters x3 in proximity	Remove	Directly affected by proposed development
M114	Syzygium palembanicum	Vulnerable	0.1	0.0	5	157	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M115	Cyrtophyllum fragrans	Common	2.1	0.7	18	27	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M116	Syzygium palembanicum	Vulnerable	0.05	0.0	3.5	220	1) Good health 2) No significant defects 3) Clusters in proximity	Remove	Directly affected by proposed development
M117	Litsea firma	Vulnerable	0.01	0.0	1.7	534	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M118	Litsea firma	Vulnerable	0.05	0.0	2.5	157	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M119	Hornstedtia scyphifera var. scyphifera	Vulnerable	Cluster	#VALUE!	1.5	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

M120	Syzygium palembanicum	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M121	Pouteria obovata	Vulnerable	0.6+0.65	#VALUE!	10	#VALUE!	1) Good health 2) No significant defects 3) Double trunk 4) Slant towards west	Remove	Directly affected by proposed development
M122	Lindera lucida	Vulnerable	0.01	0.0	1.6	503	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M123	Lindera lucida	Vulnerable	0.35	0.1	10	90	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M124	Litsea firma	Vulnerable	0.05	0.0	1.6	101	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M125	Ficus aurata	Vulnerable	0.1	0.0	4	126	1) Good health 2) Decay on trunk	Remove	Directly affected by proposed development
M126	Litsea firma	Vulnerable	0.05	0.0	1.6	101	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M127	Hevea brasiliensis	Exotic	1.8	0.6	12	21	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M128	Syzygium palembanicum	Vulnerable	0.01	0.0	2	629	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M129	Syzygium palembanicum	Vulnerable	0.01	0.0	2.5	786	1) Good health 2) No significant defects 3) Clusters x3 in proximity	Remove	Directly affected by proposed development
M130	Lindera lucida	Vulnerable	0.2	0.1	7	110	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M131	Carallia brachiata	Endangered	0.01	0.0	1.5	471	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M132	Lindera lucida	Vulnerable	0.01	0.0	1.7	534	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M133	Lindera lucida	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M134	Ficus vasculosa	Endangered	0.1	0.0	2.5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M135	Cyrtophyllum fragrans	Common	2.2	0.7	18	26	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M136	Lindera lucida	Vulnerable	0.15	0.0	5	105	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M137	Lindera lucida	Vulnerable	0.12	0.0	5	131	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M138	Syzygium palembanicum	Vulnerable	0.1	0.0	2.5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M139	Litsea firma	Vulnerable	0.1	0.0	4.5	141	1) Good health 2) No significant defects 3) Clusters x2 in proximity	Remove	Directly affected by proposed development
M140	Ixonanthes reticulata	Common	2	0.6	18	28	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M141	Cyrtophyllum fragrans	Common	3.1	1.0	18	18	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M142	Pouteria obovata	Vulnerable	0.01	0.0	4.5	1414	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M143	Hevea brasiliensis	Exotic	1.95	0.6	12	19	1) Good health 2) No significant defects 3) U-shaped bifurcation 4) Termite tracks observed 5) Surface roots extending 3m west of tree	Remove	Directly affected by proposed development
M144	Lindera lucida	Vulnerable	0.15	0.0	5	105	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M145	Lindera lucida	Vulnerable	0.15	0.0	4	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M146	Lindera lucida	Vulnerable	0.15	0.0	3	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M147	Pternandra coerulescens	Vulnerable	0.15	0.0	5	105	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M148	Cyrtophyllum fragrans	Common	2.85	0.9	18	20	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M149	Oncosperma tigillaria	Vulnerable	0.6	0.2	5	26	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M150	Falcataria moluccana	Exotic	2.1	0.7	18	27	Annex 5	Remove	Annex 5
M151	Cyrtophyllum fragrans	Common	1.6	0.5	16	31	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M152	Cyrtophyllum fragrans	Common	2.5	0.8	18	23	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers 5) Codominant branch	Remove	Directly affected by proposed development
M153	Ixonanthes reticulata	Common	2.1	0.7	18	27	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M154	Calophyllum tetrapterum	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M155	Macaranga recurvata	Critically endangered	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M156	Cyrtophyllum fragrans	Common	2.5	0.8	20	25	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M157	Syzygium palembanicum	Vulnerable	1.05	0.3	15	45	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M158	Syzygium palembanicum	Vulnerable	0.9	0.3	15	52	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M159	Syzygium palembanicum	Vulnerable	0.6	0.2	9	47	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development

M160	Cyrtophyllum fragrans	Common	2.8	0.9	20	22	1) Good health 2) No significant defects 3) Codominant branch	Remove	Directly affected by proposed development
M161	Pternandra coerulescens	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M162	Hevea brasiliensis	Exotic	2	0.6	12	19	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M163	Cyrtophyllum fragrans	Common	2.1	0.7	18	27	1) Good health 2) No significant defects 3) Root flare obvious 4) Asymmetric canopy	Remove	Directly affected by proposed development
M164	Lindera lucida	Vulnerable	0.1	0.0	2	63	1) Good health 2) No significant defects 3) Clusters	Remove	Directly affected by proposed development
M165	Lindera lucida	Vulnerable	0.1	0.0	2	63	1) Good health 2) No significant defects 3) Clusters	Remove	Directly affected by proposed development
M166	Cyrtophyllum fragrans	Common	2.8	0.9	20	22	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M167	Ixonanthes reticulata	Common	2	0.6	18	28	1) Good health 2) Girdling roots by S0153	Remove	Directly affected by proposed development
M168	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects 3) Clusters	Remove	Directly affected by proposed development
M169	Cyrtophyllum fragrans	Common	2.6	0.8	14	17	1) Good health 2) No significant defects 3) Asymmetric canopy	Remove	Directly affected by proposed development
M170	Hevea brasiliensis	Exotic	1.6	0.5	12	24	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M171	Lindera lucida	Vulnerable	0.2	0.1	16	251	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M172	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M173	Falcataria moluccana	Exotic	3	1.0	20	21	Annex 5	Remove	Annex 5
M174	Syzygium palembanicum	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M175	Cyrtophyllum fragrans	Common	2.1	0.7	12	18	1) Good health 2) No significant defects 3) Low bifurcation	Remove	Directly affected by proposed development
M176	Falcataria moluccana	Exotic	4.5	1.4	22	15	Annex 5	Remove	Annex 5
M177	Ixonanthes reticulata	Common	1.6	0.5	16	31	1) Good health 2) No significant defects 3) Root flare obvious 4) Growing next to S0163	Remove	Directly affected by proposed development
M178	Cyrtophyllum fragrans	Common	2.4	0.8	18	24	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M179	Falcataria moluccana	Exotic	2.8	0.9	18	20	Annex 5	Remove	Annex 5
M180	Lindera lucida	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M181	Alstonia angustiloba	Common	1.7	0.5	16	30	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M182	Litsea firma	Vulnerable	0.05	0.0	16	1006	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M183	Lindera lucida	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects 3) Clusters	Remove	Directly affected by proposed development
M184	Pouteria obovata	Vulnerable	0.05	0.0	3	189	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M185	Oncosperma tigillaria	Vulnerable	0.8	0.3	6	24	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M186	Cyrtophyllum fragrans	Common	1.5	0.5	18	38	1) Good health 2) Large exposed deadwood with decay towards NE	Remove	Directly affected by proposed development
M187	Falcataria moluccana	Exotic	2	0.6	20	31	Annex 5	Remove	Annex 5
M188	Spathodea campanulata	Exotic	1.6	0.5	12	24	Annex 5	Remove	Annex 5
M189	Cecropia pachystachya	Exotic	1.3	0.4	8	19	1) Good health 2) No significant defects 3) Invasive species	Remove	Directly affected by proposed development
M190	Cyrtophyllum fragrans	Common	1.8	0.6	10	17	1) Average health 2) Past canopy failure 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M191	Falcataria moluccana	Exotic	3	1.0	22	23	Annex 5	Remove	Annex 5
M192	Falcataria moluccana	Exotic	2	0.6	12	19	Annex 5	Remove	Annex 5
M193	Falcataria moluccana	Exotic	2.2	0.7	22	31	Annex 5	Remove	Annex 5
M194	Falcataria moluccana	Exotic	1.8	0.6	18	31	Annex 5	Remove	Annex 5
M195	Oncosperma tigillaria	Vulnerable	0.8	0.3	5	20	1) Good health 2) No significant defects 3) Clusters	Remove	Directly affected by proposed development
M196	Lindera lucida	Vulnerable	0.05	0.0	1.8	113	1) Good health 2) No significant defects 3) Clusters	Remove	Directly affected by proposed development
M197	Lithocarpus cantleyanus	Critically endangered	0.05	0.0	1.5	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M198	Lindera lucida	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M199	Oncosperma tigillaria	Vulnerable	0.8	0.3	3	12	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

M200	Cyathea latebrosa	Vulnerable	0.3	0.1	2	21	1) Good health 2) No significant defects 3) Clusters 4) Growing on slope	Remove	Directly affected by proposed development
M201	Lithocarpus cantleyanus	Critically endangered	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M202	Lithocarpus cantleyanus	Critically endangered	0.2	0.1	4	63	1) Average health 2) No significant defects	Remove	Directly affected by proposed development
M203	Lithocarpus conocarpus	Critically endangered	0.8	0.3	12	47	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M204	Lithocarpus conocarpus	Critically endangered	0.05	0.0	3	189	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M205	Lithocarpus cantleyanus	Critically endangered	0.05	0.0	3	189	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M206	Lithocarpus conocarpus	Critically endangered	0.1	0.0	5	157	1) Good health 2) Partially fallen	Remove	Directly affected by proposed development
M207	Oncosperma tigillaria	Vulnerable	0.6	0.2	5	26	1) Good health 2) No significant defects 3) Clusters	Remove	Directly affected by proposed development
M208	Alstonia angustiloba	Common	3.2	1.0	20	20	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M209	Litsea elliptica	Common	1.25	0.4	15	38	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M210	Litsea elliptica	Common	1.1	0.4	15	43	1) Good health 2) No significant defects 3) Asymmetric canopy	Remove	Directly affected by proposed development
M211	Litsea elliptica	Common	2	0.6	20	31	1) Good health 2) No significant defects 3) Root flare obvious 4) Growing on the edge of slope	Remove	Directly affected by proposed development
M212	Vitex pinnata	Common	1.1	0.4	15	43	1) Good health 2) No significant defects 3) Growing on slope	Remove	Directly affected by proposed development
M213	Pouteria obovata	Vulnerable	1.5	0.5	15	31	1) Good health 2) Mechanical damage on branch 3) Root flare obvious	Remove	Directly affected by proposed development
M214	Ardisia elliptica	Endangered	0.25	0.1	6	75	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M215	Oncosperma tigillaria	Vulnerable	5	1.6	12	8	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M216	Oncosperma tigillaria	Vulnerable	3	1.0	8	8	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M217	Pouteria obovata	Vulnerable	1.2	0.4	14	37	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M218	Lindera lucida	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M219	Lindera lucida	Vulnerable	0.5	0.2	8	50	1) Average health 2) No significant defects 3) Partial defoliation 4) Asymmetric lean towards NE	Remove	Directly affected by proposed development
M220	Lindera lucida	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M221	Lindera lucida	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M222	Lindera lucida	Vulnerable	0.5	0.2	9	57	1) Good health 2) No significant defects 3) Low co-dominant branch	Remove	Directly affected by proposed development
M223	Ixonanthes reticulata	Common	1.9	0.6	20	33	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M224	Lindera lucida	Vulnerable	0.7	0.2	14	63	1) Good health 2) No significant defects 3) Asymmetric canopy	Remove	Directly affected by proposed development
M225	Morella esculenta	Common	1.9	0.6	12	20	1) Good health 2) No significant defects 3) Low co-dominant branch	Remove	Directly affected by proposed development
M226	Pouteria obovata	Vulnerable	0.4	0.1	10	79	1) Good health 2) No significant defects 3) Growing on slope	Remove	Directly affected by proposed development
M227	Cyrtophyllum fragrans	Common	1.9	0.6	18	30	1) Good health 2) No significant defects 3) Root flare obvious 4) Low co-dominant branch	Remove	Directly affected by proposed development
M228	Lindera lucida	Vulnerable	0.3	0.1	6	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M229	Lindera lucida	Vulnerable	0.8	0.3	8	31	1) Good health 2) Resprouted from fallen tree	Remove	Directly affected by proposed development
M230	Ixonanthes reticulata	Common	1.9	0.6	20	33	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M231	Lindera lucida	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M232	Litsea firma	Vulnerable	1.65	0.5	20	38	1) Good health 2) No significant defects 3) Root flare obvious 4) Growing on slope	Remove	Directly affected by proposed development
M233	Litsea elliptica	Common	1.75	0.6	20	36	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M234	Falcataria moluccana	Exotic	2.1	0.7	20	30	Annex 5	Remove	Annex 5
M235	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Annex 5
M236	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Annex 5
M237	Falcataria moluccana	Exotic	2.4	0.8	20	26	Annex 5	Remove	Annex 5
M238	Campnosperma auriculata	Common	1.8	0.6	20	35	1) Good health 2) No significant defects 3) Assessment limited by climbers 4) Growing on slope	Remove	Directly affected by proposed development
M239	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Annex 5

M240	Lindera lucida	Vulnerable	0.8	0.3	15	59	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M241	Lindera lucida	Vulnerable	0.85	0.3	12	44	1) Good health 2) No significant defects 3) Asymmetric canopy	Remove	Directly affected by proposed development
M242	Oncosperma tigillaria	Vulnerable	1.8	0.6	10	17	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M243	Alstonia angustiloba	Common	1.65	0.5	16	30	1) Good health 2) No significant defects 3) Root flare obvious 4) Lean towards NW	Remove	Directly affected by proposed development
M244	Ixonanthes reticulata	Common	1.5	0.5	18	38	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M245	Endospermum diadenum	Vulnerable	1.1	0.4	20	57	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M246	Cyrtophyllum fragrans	Common	1.8	0.6	18	31	1) Good health 2) No significant defects 3) Low bifurcation	Remove	Directly affected by proposed development
M247	Cyrtophyllum fragrans	Common	1.5	0.5	18	38	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M248	Lindera lucida	Vulnerable	0.3	0.1	6	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M249	Cyrtophyllum fragrans	Common	1.5	0.5	18	38	1) Good health 2) No significant defects 3) Root flare obvious 4) V-shaped bifurcation	Remove	Directly affected by proposed development
M250	Lindera lucida	Vulnerable	0.9	0.3	15	52	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M251	Lindera lucida	Vulnerable	1	0.3	15	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M252	Cyrtophyllum fragrans	Common	2.6	0.8	20	24	1) Good health 2) No significant defects 3) Multiple attachment	Remove	Directly affected by proposed development
M253	Cyrtophyllum fragrans	Common	1.9	0.6	16	26	1) Good health 2) No significant defects 3) Low bifurcation	Remove	Directly affected by proposed development
M254	Oncosperma tigillaria	Vulnerable	1.5	0.5	15	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M255	Pouteria obovata	Vulnerable	1.2	0.4	18	47	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M256	Pouteria obovata	Vulnerable	0.8	0.3	15	59	1) Good health 2) No significant defects 3) Growing on slope	Remove	Directly affected by proposed development
M257	Pouteria obovata	Vulnerable	1.2	0.4	10	26	1) Good health 2) No significant defects 3) Growing on the edge of concrete structure	Remove	Directly affected by proposed development
M258	Morella esculenta	Common	1.5	0.5	15	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M259	Pouteria obovata	Vulnerable	1.2	0.4	10	26	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M260	Pouteria obovata	Vulnerable	1.2	0.4	16	42	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M261	Macaranga conifera	Common	1.8	0.6	20	35	1) Good health 2) No significant defects 3) Growing on slope	Remove	Directly affected by proposed development
M262	Litsea elliptica	Common	1.6	0.5	20	39	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M263	Terminalia catappa	Common	1.5	0.5	16	34	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M264	Lindera lucida	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M265	Lindera lucida	Vulnerable	0.2	0.1	3	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M266	Casuarina equisetifolia	Common	2.55	0.8	20	25	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M267	Casuarina equisetifolia	Common	2.1	0.7	20	30	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M268	Casuarina equisetifolia	Common	2.1	0.7	18	27	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M269	Falcataria moluccana	Exotic	1.8	0.6	10	17	Annex 5	Remove	Annex 5
M270	Falcataria moluccana	Exotic	1.5	0.5	22	46	Annex 5	Remove	Annex 5
M271	Elaeis guineensis	Exotic	2	0.6	10	16	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M272	Falcataria moluccana	Exotic	2.7	0.9	22	26	Annex 5	Remove	Annex 5
M273	Ficus variegata	Common	1.5	0.5	12	25	1) Good health 2) Decay on trunk at H=6.0m facing N	Remove	Directly affected by proposed development
M274	Artocarpus heterophyllus	Exotic	2	0.6	10	16	1) Good health 2) No significant defects 3) Low co-dominant branch	Remove	Directly affected by proposed development
M275	Casuarina equisetifolia	Common	1.5	0.5	22	46	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M276	Elaeis guineensis	Exotic	1.8	0.6	9	16	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M277	Elaeis guineensis	Exotic	2.5	0.8	9	11	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M278	Elaeis guineensis	Exotic	2.5	0.8	9	11	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M279	Elaeis guineensis	Exotic	2	0.6	9	14	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

M280	Pouteria obovata	Vulnerable	0.6	0.2	10	52	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M281	Pouteria obovata	Vulnerable	0.3	0.1	10	105	1) Good health 2) Mechanical damage on trunk	Remove	Directly affected by proposed development
M282	Litsea firma	Vulnerable	0.35	0.1	9	81	1) Good health 2) No significant defects 3) Growing on slope 4) Covered by climbers	Remove	Directly affected by proposed development
M283	Elaeis guineensis	Exotic	2	0.6	9	14	1) Good health 2) No significant defects 3) Self-corrected lean	Remove	Directly affected by proposed development
M284	Intsia bijuga	Critically endangered	1	0.3	16	50	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M285	Avicennia rumphiana	Common	1.5	0.5	16	34	1) Good health 2) Possible cavity on trunk at H=3.0m	Retain	Not directly affected by proposed development
M286	Heritiera littoralis	Endangered (Planted)	0.3	0.1	4	42	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M287	Nypa fruticans	Vulnerable	cluster	#VALUE!	7	#VALUE!	1) Good health 2) No significant defects 3) Cluster x3	Retain	Not directly affected by proposed development
M288	Barringtonia racemosa	Critically endangered	0.3	0.1	3.5	37	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M289	Avicennia rumphiana	Common	1.6	0.5	12	24	1) Good health 2) Severe cavity on tree	Remove	To remove independent of proposed development
M290	Heritiera littoralis	Endangered (Planted)	0.2	0.1	5	79	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M291	Pouteria obovata	Vulnerable	0.7	0.2	12	54	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M292	Dolichandrone spathacea	Critically endangered	0.3	0.1	3	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M293	Falcataria moluccana	Exotic	0.2	0.1	20	314	Annex 5	Remove	Annex 5
M294	Falcataria moluccana	Exotic	1.7	0.5	20	37	Annex 5	Remove	Annex 5
M295	Falcataria moluccana	Exotic	2.4	0.8	25	33	Annex 5	Remove	Annex 5
M296	Falcataria moluccana	Exotic	3	1.0	25	26	Annex 5	Remove	Annex 5
M297	Casuarina equisetifolia	Common	1.65	0.5	20	38	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M298	Falcataria moluccana	Exotic	2.5	0.8	20	25	Annex 5	Remove	Annex 5
M299	Calophyllum inophyllum	Critically endangered	0.15	0.0	5	105	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M300	Casuarina equisetifolia	Common	2.1	0.7	20	30	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M301	Casuarina equisetifolia	Common	2.1	0.7	22	33	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M302	Casuarina equisetifolia	Common	1.7	0.5	22	41	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M303	Lindera lucida	Vulnerable	1	0.3	12	38	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M304	Lindera lucida	Vulnerable	0.3	0.1	8	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M305	Casuarina equisetifolia	Common	2.05	0.7	20	31	1) Good health 2) No significant defects 3) Root flare obvious 4) Lean towards SE	Remove	Directly affected by proposed development
M306	Acacia auriculiformis	Exotic	1.95	0.6	18	29	Annex 5	Remove	Annex 5
M307	Acacia auriculiformis	Exotic	2.5	0.8	20	25	Annex 5	Remove	Annex 5
M308	Pouteria obovata	Vulnerable	0.3	0.1	8	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M309	Pouteria obovata	Vulnerable	0.7	0.2	10	45	1) Good health 2) No significant defects 3) Asymmetric canopy	Remove	Directly affected by proposed development
M310	Falcataria moluccana	Exotic	2	0.6	20	31	Annex 5	Remove	Annex 5
M311	Peltophorum pterocarpum	Critically endangered	1.6	0.5	14	28	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by epiphytes 5) Low bifurcation	Remove	Directly affected by proposed development
M312	Casuarina equisetifolia	Common	2	0.6	22	35	1) Good health 2) Past primary branch failure at H=6.0m 3) Root flare obvious	Remove	Directly affected by proposed development
M313	Syzygium polyanthum	Vulnerable	0.5	0.2	9	57	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M314	Avicennia rumphiana	Common	1.75	0.6	18	32	1) Good health 2) No significant defects 3) Asymmetric lean towards N	Retain	Not directly affected by proposed development
M315	Lindera lucida	Vulnerable	0.45	0.1	10	70	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M316	Litsea firma	Vulnerable	0.85	0.3	20	74	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M317	Acacia auriculiformis	Exotic	1.65	0.5	20	38	Annex 5	Remove	Annex 5
M318	Ixonanthes reticulata	Common	1.9	0.6	20	33	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M319	Pouteria obovata	Vulnerable	0.6	0.2	10	52	1) Good health 2) No significant defects 3) Self-corrected lean	Remove	Directly affected by proposed development

M320	Litsea firma	Vulnerable	1.3	0.4	18	44	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M321	Casuarina equisetifolia	Common	1.5	0.5	16	34	1) Good health 2) Decay on one buttress root 3) Root flare obvious	Remove	Directly affected by proposed development
M322	Casuarina equisetifolia	Common	3.2	1.0	18	18	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M323	Casuarina equisetifolia	Common	2.05	0.7	18	28	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M324	Vitex pinnata	Common	1.55	0.5	15	30	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M325	Oncosperma tigillaria	Vulnerable	1	0.3	7	22	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M326	Casuarina equisetifolia	Common	2.1	0.7	18	27	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M327	Syzygium polyanthum	Vulnerable	0.45	0.1	10	70	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M328	Lindera lucida	Vulnerable	0.75	0.2	16	67	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M329	Lindera lucida	Vulnerable	0.8	0.3	16	63	1) Average health 2) No significant defects 3) Canopy covered by climbers	Remove	Directly affected by proposed development
M330	Lindera lucida	Vulnerable	0.6	0.2	15	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M331	Lindera lucida	Vulnerable	0.45	0.1	10	70	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M332	Elaeis guineensis	Exotic	2	0.6	8	13	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M333	Lindera lucida	Vulnerable	0.3	0.1	5	52	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M334	Syzygium polyanthum	Vulnerable	0.8	0.3	14	55	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M335	Lindera lucida	Vulnerable	0.6	0.2	12	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M336	Adenanthera pavonina	Exotic	1.5	0.5	16	34	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M337	Acacia auriculiformis	Exotic	1.5	0.5	16	34	Annex 5	Remove	Annex 5
M338	Casuarina equisetifolia	Common	1.5	0.5	20	42	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M339	Casuarina equisetifolia	Common	1.8	0.6	16	28	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M340	Casuarina equisetifolia	Common	2	0.6	18	28	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M341	Acacia auriculiformis	Exotic	1.6	0.5	15	29	Annex 5	Remove	Annex 5
M342	Casuarina equisetifolia	Common	1.85	0.6	18	31	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M343	Terminalia catappa	Common	1.8	0.6	12	21	1) Good health 2) No significant defects 3) Root flare obvious 4) Low bifurcation	Remove	Directly affected by proposed development
M344	Lindera lucida	Vulnerable	0.1	0.0	2.5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M345	Acacia auriculiformis	Exotic	3	1.0	18	19	Annex 5	Remove	Annex 5
M346	Taliparitі tiliaceum	Common	1.8	0.6	12	21	1) Good health 2) Decay at tree base 3) Lean towards NW	Remove	Directly affected by proposed development
M347	Taliparitі tiliaceum	Common	2.8	0.9	12	13	1) Good health 2) No significant defects 3) Growing on slope 4) Assessment limited by climbers	Remove	Directly affected by proposed development
M348	Endospermum diadenum	Vulnerable	0.15	0.0	5	105	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M349	Premna serratifolia	Vulnerable	0.4	0.1	5	39	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M350	Oncosperma tigillaria	Vulnerable	0.4	0.1	8	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M351	Casuarina equisetifolia	Common	2.45	0.8	18	23	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M352	Casuarina equisetifolia	Common	2.6	0.8	20	24	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M353	Casuarina equisetifolia	Common	2.9	0.9	20	22	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M354	Casuarina equisetifolia	Common	1.8	0.6	20	35	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M355	Calophyllum lanigerum	Endangered	0.15	0.0	4	84	1) Good health 2) No significant defects 3) Lean towards N	Remove	Directly affected by proposed development
M356	Ficus microcarpa	Common	2.7	0.9	18	21	1) Good health 2) Decay on host plant	Remove	Directly affected by proposed development
M357	Pentace cf. triptera	Endangered	0.25	0.1	5	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M358	Palaquium obovatum	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M359	Heritiera littoralis	Endangered (Planted)	0.1	0.0	2	63	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development

M360	Calophyllum cf. lanigerum	Endangered	0.15	0.0	4	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M361	Pentace cf. triptera	Endangered	0.3	0.1	4	42	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M362	Pentace cf. triptera	Endangered	0.15	0.0	4	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M363	Palaquium obovatum	Vulnerable	0.15	0.0	3	63	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M364	Samanea saman	Exotic	1.55	0.5	10	20	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by epiphytes 5) Asymmetric canopy	Remove	Directly affected by proposed development
M365	Samanea saman	Exotic	1.5	0.5	10	21	1) Good health 2) Decay on primary branch 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M366	Samanea saman	Exotic	1.75	0.6	10	18	1) Good health 2) No significant defects 3) Root flare obvious 4) U-shaped bifurcation	Remove	Directly affected by proposed development
M367	Lindera lucida	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M368	Ficus microcarpa	Common	8.0 spread	#VALUE!	18	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M369	Lindera lucida	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M370	Lindera lucida	Vulnerable	0.3	0.1	8	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M371	Litsea firma	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M372	Ficus microcarpa	Common	2.4	0.8	18	24	1) Good health 2) Host plant dead	Remove	Directly affected by proposed development
M373	Syzygium polyanthum	Vulnerable	0.35	0.1	8	72	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M374	Lindera lucida	Vulnerable	1.15	0.4	12	33	1) Good health 2) No significant defects 3) Lean towards N 4) Assessment limited by climbers	Remove	Directly affected by proposed development
M375	Vitex pinnata	Common	1.6	0.5	18	35	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M376	Litsea firma	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M377	Macaranga gigantea	Common	1.5	0.5	15	31	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M378	Litsea firma	Vulnerable	0.35	0.1	8	72	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M379	Aidia densiflora	Vulnerable	0.5	0.2	10	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M380	Pouteria obovata	Vulnerable	0.4	0.1	8	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M381	Syzygium polyanthum	Vulnerable	0.35	0.1	8	72	1) Good health 2) Die back at canopy	Remove	Directly affected by proposed development
M382	Syzygium polyanthum	Vulnerable	0.2	0.1	4	63	1) Average health 2) No significant defects	Remove	Directly affected by proposed development
M383	Lindera lucida	Vulnerable	0.8	0.3	10	39	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M384	Lindera lucida	Vulnerable	0.2	0.1	7	110	1) Poor health 2) No significant defects	Remove	Directly affected by proposed development
M385	Pouteria obovata	Vulnerable	1.1	0.4	12	34	1) Poor health 2) Die back at canopy	Remove	Directly affected by proposed development
M386	Lindera lucida	Vulnerable	0.4	0.1	9	71	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M387	Erythrophleum suaveolens	Exotic	1.6	0.5	12	24	1) Poor health 2) Die back at canopy	Remove	Directly affected by proposed development
M388	Lindera lucida	Vulnerable	0.2	0.1	8	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M389	Lindera lucida	Vulnerable	0.65	0.2	14	68	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M390	Lindera lucida	Vulnerable	0.35	0.1	7	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M391	Lindera lucida	Vulnerable	0.4	0.1	7	55	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M392	Erythrophleum suaveolens	Exotic	2.3	0.7	20	27	1) Good health 2) V-shaped bifurcation with bulge	Remove	Directly affected by proposed development
M393	Erythrophleum suaveolens	Exotic	1.8	0.6	18	31	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M394	Erythrophleum suaveolens	Exotic	2.4	0.8	18	24	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M395	Erythrophleum suaveolens	Exotic	1.5	0.5	18	38	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M396	Erythrophleum suaveolens	Exotic	1.6	0.5	20	39	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M397	Peltophorum pterocarpum	Critically endangered	0.3	0.1	6	63	1) Good health 2) No significant defects 3) Asymmetric lean towards SE	Remove	Directly affected by proposed development
M398	Lindera lucida	Vulnerable	1.25	0.4	8	20	1) Average health 2) Exposed deadwood on trunk 3) Die back at canopy	Remove	Directly affected by proposed development
M399	Lindera lucida	Vulnerable	0.7	0.2	5	22	1) Poor health 2) Cavity on trunk at H=2.0m 3) Past canopy failure	Remove	Directly affected by proposed development

M400	Lindera lucida	Vulnerable	0.8	0.3	1	4	1) Poor health 2) Die back at canopy	Remove	Directly affected by proposed development
M401	Lindera lucida	Vulnerable	0.9	0.3	10	35	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M402	Lindera lucida	Vulnerable	1.35	0.4	14	33	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M403	Lindera lucida	Vulnerable	0.65	0.2	10	48	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M404	Lindera lucida	Vulnerable	0.55	0.2	12	69	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M405	Lindera cf. lucida	Vulnerable	1.2	0.4	9	24	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M406	Lindera lucida	Vulnerable	0.6	0.2	12	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M407	Peltophorum pterocarpum	Critically endangered	1.2	0.4	12	31	1) Good health 2) Decay on trunk 3) Partially uprooted 4) Low retention value	Remove	Directly affected by proposed development
M408	Lindera lucida	Vulnerable	0.7	0.2	14	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M409	Peltophorum pterocarpum	Critically endangered	1.7	0.5	18	33	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M410	Ficus microcarpa	Common	6.0 spread	#VALUE!	18	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M411	Lindera lucida	Vulnerable	0.15	0.0	4	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M412	Peltophorum pterocarpum	Critically endangered	0.9	0.3	8	28	1) Good health 2) Decay on one primary branch 3) Low bifurcation 4) Assessment limited by undergrowth	Remove	Directly affected by proposed development
M413	Peltophorum pterocarpum	Critically endangered	0.1	0.0	8	251	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M414	Syzygium lineatum	Common	1.5	0.5	10	21	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M415	Pongamia pinnata	Endangered	0.55	0.2	8	46	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M416	Litsea elliptica	Common	1.5	0.5	20	42	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M417	Lindera lucida	Vulnerable	0.8	0.3	12	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M418	Lindera lucida	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M419	Lindera lucida	Vulnerable	0.4	0.1	6	47	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
M420	Lindera lucida	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M421	Lindera lucida	Vulnerable	0.9	0.3	10	35	1) Good health 2) No significant defects 3) Lean towards NE 4) Clusters within proximity	Remove	Directly affected by proposed development
M422	Macaranga conifera	Common	1.6	0.5	14	28	1) Good health 2) Past primary branch failure 3) Root flare obvious 4) Asymmetric canopy	Remove	Directly affected by proposed development
M423	Lindera lucida	Vulnerable	1.7	0.5	14	26	1) Poor health 2) Die back at canopy 3) Canopy covered by climbers	Remove	Directly affected by proposed development
M424	Syzygium polyanthum	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M425	Lindera lucida	Vulnerable	1.1	0.4	16	46	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M426	Lindera lucida	Vulnerable	1.1	0.4	14	40	1) Good health 2) No significant defects 3) Covered by climbers	Remove	Directly affected by proposed development
M427	Lindera lucida	Vulnerable	0.8	0.3	10	39	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M428	Ilex cymosa	Common	0.15	0.0	5	105	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M429	Lindera lucida	Vulnerable	0.2	0.1	4	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M430	Lindera lucida	Vulnerable	0.9	0.3	12	42	1) Good health 2) No significant defects 3) Lean towards SE	Remove	Directly affected by proposed development
M431	Lindera lucida	Vulnerable	0.75	0.2	12	50	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M432	Lindera lucida	Vulnerable	0.4	0.1	10	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M433	Lindera lucida	Vulnerable	0.45	0.1	8	56	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M434	Lindera lucida	Vulnerable	0.5	0.2	8	50	1) Poor health 2) Decay on primary branch 3) Die back at canopy	Remove	Directly affected by proposed development
M435	Lindera lucida	Vulnerable	0.4	0.1	10	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M436	Oncosperma tigillaria	Vulnerable	0.6	0.2	3	16	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M437	Lindera lucida	Vulnerable	0.8	0.3	9	35	1) Average health 2) Die back at canopy 3) Low bifurcation	Remove	Directly affected by proposed development
M438	Lindera lucida	Vulnerable	0.35	0.1	7	63	1) Poor health 2) No significant defects	Remove	Directly affected by proposed development
M439	Macaranga hullettii	Critically endangered	0.2	0.1	3	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

M440	Macaranga heynei	Common	0.2	0.1	4	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M441	Cinnamomum iners	Common	1.55	0.5	10	20	1) Good health 2) No significant defects 3) Self-corrected lean	Remove	Directly affected by proposed development
M442	Peltophorum pterocarpum	Critically endangered	2.5	0.8	16	20	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M443	Cinnamomum iners	Common	2	0.6	8	13	1) Good health 2) No significant defects 3) Multiple attachment	Remove	Directly affected by proposed development
M444	Cyrtophyllum fragrans	Common	1.6	0.5	16	31	1) Good health 2) No significant defects 3) Low bifurcation	Remove	Directly affected by proposed development
M445	Antidesma bunius	Exotic	1.55	0.5	12	24	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M446	Oncosperma tigillaria	Vulnerable	0.2	0.1	3	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M447	Oncosperma tigillaria	Vulnerable	1.5	0.5	8	17	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M448	Delonix regia	Exotic	1.6	0.5	16	31	1) Good health 2) No significant defects 3) Root flare obvious 4) U-shaped bifurcation	Remove	Directly affected by proposed development
M449	Lindera lucida	Vulnerable	0.45	0.1	8	56	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M450	Pouteria obovata	Vulnerable	0.9	0.3	14	49	1) Good health 2) No significant defects 3) Root flare obvious 4) Self-corrected lean	Remove	Directly affected by proposed development
M451	Pouteria obovata	Vulnerable	0.8	0.3	14	55	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M452	Pouteria obovata	Vulnerable	1.4	0.4	16	36	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M453	Peltophorum pterocarpum	Critically endangered	1.25	0.4	16	40	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M454	Lindera lucida	Vulnerable	0.25	0.1	7	88	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M455	Cerbera odollam	Vulnerable (Planted)	1.55	0.5	10	20	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M456	Cerbera odollam	Vulnerable (Planted)	1.2	0.4	14	37	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M457	Cerbera odollam	Vulnerable (Planted)	1.05	0.3	17	51	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M458	Cerbera odollam	Vulnerable (Planted)	1.75	0.6	16	29	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M459	Cerbera odollam	Vulnerable (Planted)	0.9	0.3	12	42	1) Good health 2) Exposed deadwood on trunk	Remove	Directly affected by proposed development
M460	Cerbera odollam	Vulnerable (Planted)	0.85	0.3	10	37	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M461	Cerbera odollam	Vulnerable (Planted)	1.35	0.4	12	28	1) Good health 2) No significant defects 3) Multiple attachment	Remove	Directly affected by proposed development
M462	Cerbera odollam	Vulnerable (Planted)	0.9	0.3	10	35	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M463	Cerbera odollam	Vulnerable (Planted)	0.6	0.2	10	52	1) Average health 2) Decay on trunk	Remove	Directly affected by proposed development
M464	Cerbera odollam	Vulnerable (Planted)	0.7	0.2	10	45	1) Average health 2) No significant defects	Remove	Directly affected by proposed development
M465	Cerbera odollam	Vulnerable (Planted)	0.6	0.2	8	42	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M466	Cerbera odollam	Vulnerable (Planted)	1.2	0.4	10	26	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M467	Cerbera odollam	Vulnerable (Planted)	1.1	0.4	8	23	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M468	Cerbera odollam	Vulnerable (Planted)	0.7	0.2	10	45	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M469	Cerbera odollam	Vulnerable (Planted)	1.2	0.4	12	31	1) Good health 2) No significant defects 3) U-shaped bifurcation	Remove	Directly affected by proposed development
M470	Cerbera odollam	Vulnerable (Planted)	1.4	0.4	12	27	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M471	Cerbera odollam	Vulnerable (Planted)	0.6	0.2	14	73	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M472	Cerbera odollam	Vulnerable (Planted)	0.8	0.3	12	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M473	Cerbera odollam	Vulnerable (Planted)	0.55	0.2	8	46	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M474	Cerbera odollam	Vulnerable (Planted)	0.9	0.3	12	42	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M475	Cerbera odollam	Vulnerable (Planted)	1	0.3	12	38	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M476	Cerbera odollam	Vulnerable (Planted)	1.6	0.5	14	28	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M477	Cerbera odollam	Vulnerable (Planted)	0.8	0.3	12	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M478	Cerbera odollam	Vulnerable (Planted)	1.3	0.4	14	34	1) Good health 2) No significant defects 3) U-shaped bifurcation	Remove	Directly affected by proposed development
M479	Cerbera odollam	Vulnerable (Planted)	0.8	0.3	12	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

M480	Cerbera odollam	Vulnerable (Planted)	0.7	0.2	5	22	1) Average health 2) Past canopy failure	Remove	Directly affected by proposed development
M481	Cerbera odollam	Vulnerable (Planted)	1	0.3	9	28	1) Good health 2) Decay on trunk	Remove	Directly affected by proposed development
M482	Cerbera odollam	Vulnerable (Planted)	0.75	0.2	12	50	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M483	Cerbera odollam	Vulnerable (Planted)	0.85	0.3	12	44	1) Good health 2) Decay on primary branch	Remove	Directly affected by proposed development
M484	Cerbera odollam	Vulnerable (Planted)	1.4	0.4	13	29	1) Good health 2) Decay on trunk	Remove	Directly affected by proposed development
M485	Cerbera odollam	Vulnerable (Planted)	0.85	0.3	12	44	1) Good health 2) Girdling roots	Remove	Directly affected by proposed development
M486	Cerbera odollam	Vulnerable (Planted)	0.8	0.3	12	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M487	Cerbera odollam	Vulnerable (Planted)	0.9	0.3	12	42	1) Good health 2) Multiple decay on trunk	Remove	Directly affected by proposed development
M488	Cerbera odollam	Vulnerable (Planted)	0.5	0.2	8	50	1) Average health 2) Past primary branch failure	Remove	Directly affected by proposed development
M489	Cerbera odollam	Vulnerable (Planted)	1	0.3	10	31	1) Good health 2) Cankers on primary branch	Remove	Directly affected by proposed development
M490	Cerbera odollam	Vulnerable (Planted)	2	0.6	16	25	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M491	Cerbera odollam	Vulnerable (Planted)	0.9	0.3	9	31	1) Good health 2) Decay on trunk facing SW 3) Root flare obvious	Remove	Directly affected by proposed development
M492	Cerbera odollam	Vulnerable (Planted)	1.1	0.4	15	43	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M493	Cerbera odollam	Vulnerable (Planted)	1.1	0.4	14	40	1) Good health 2) Cavity on trunk facing SW	Remove	Directly affected by proposed development
M494	Cerbera odollam	Vulnerable (Planted)	1.3	0.4	12	29	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M495	Cerbera odollam	Vulnerable (Planted)	1.8	0.6	13	23	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M496	Spathodea campanulata	Exotic	1.5	0.5	6	13	Annex 5	Remove	Annex 5
M497	Syzygium grande	Common	1.55	0.5	15	30	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M498	Syzygium cf. cumini	Exotic	1.85	0.6	15	25	1) Good health 2) No significant defects 3) Root flare obvious 4) U-shaped bifurcation	Remove	Directly affected by proposed development
M499	Syzygium cf. cumini	Exotic	1.5	0.5	16	34	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M500	Syzygium cf. cumini	Exotic	2.7	0.9	15	17	1) Good health 2) No significant defects 3) Root flare obvious 4) Low bifurcation	Remove	Directly affected by proposed development
M501	Peltophorum pterocarpum	Critically endangered	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M502	Dillenia suffruticosa	Common	2.2	0.7	5	7	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M503	Dillenia suffruticosa	Common	1.8	0.6	4	7	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M504	Litsea firma	Vulnerable	0.1	0.0	2	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M505	Lindera lucida	Vulnerable	0.6	0.2	12	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M506	Lindera lucida	Vulnerable	0.5	0.2	12	75	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M507	Lindera lucida	Vulnerable	0.25	0.1	7	88	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M508	Litsea firma	Vulnerable	0.1	0.0	2.5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M509	Oncosperma tigillaria	Vulnerable	0.8	0.3	2	8	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M510	Litsea firma	Vulnerable	0.1	0.0	6	189	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M511	Vitex pinnata	Common	1.8	0.6	15	26	1) Average health 2) Die back at canopy	Remove	Directly affected by proposed development
M512	Glochidion cf. lutescens	Critically Endangered	0.5	0.2	10	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M513	Glochidion cf. lutescens	Critically Endangered	0.5	0.2	15	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M514	Dillenia suffruticosa	Common	1.8	0.6	5	9	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M515	Heritiera littoralis	Endangered (Planted)	0.1	0.0	1.7	53	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M516	Premna serratifolia	Vulnerable	0.2	0.1	3	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M517	Premna serratifolia	Vulnerable	0.9	0.3	4	14	1) Good health 2) No significant defects 3) Lean towards NE	Remove	Directly affected by proposed development
M518	Oncosperma tigillaria	Vulnerable	2.0 spread	#VALUE!	7	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M519	Macaranga hullettii	Critically endangered	0.9	0.3	8	28	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

M520	Litsea firma	Vulnerable	0.9	0.3	10	35	1) Good health 2) No significant defects 3) Suspected animal activity	Remove	Directly affected by proposed development
M521	Oncosperma tigillaria	Vulnerable	1	0.3	6	19	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M522	Litsea firma	Vulnerable	0.5	0.2	9	57	1) Good health 2) No significant defects 3) Growing on slope next to stream	Remove	Directly affected by proposed development
M523	Litsea elliptica	Common	2.05	0.7	20	31	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M524	Premna serratifolia	Vulnerable	0.35	0.1	7	63	1) Good health 2) Decay on trunk facing NW	Remove	Directly affected by proposed development
M525	Premna serratifolia	Vulnerable	0.15	0.0	4	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M526	Litsea elliptica	Common	1.5	0.5	18	38	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M527	Litsea firma	Vulnerable	0.8	0.3	16	63	1) Poor health 2) Die back at canopy 3) Growng next to footpath	Remove	Directly affected by proposed development
M528	Syzygium polyanthum	Vulnerable	0.5	0.2	10	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M529	Campnosperma auriculata	Common	1.5	0.5	20	42	1) Good health 2) No significant defects 3) Root flare obvious 4) Asymmetric canopy	Remove	Directly affected by proposed development
M530	Cinnamomum iners	Common	1.6	0.5	10	20	1) Good health 2) No significant defects 3) Low bifurcation	Remove	Directly affected by proposed development
M531	Intsia bijuga	Critically endangered	0.9	0.3	15	52	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M532	Lindera lucida	Vulnerable	1	0.3	18	57	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
M533	Litsea firma	Vulnerable	1.6	0.5	20	39	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers 5) Saplings within proximity	Remove	Directly affected by proposed development
M534	Oncosperma tigillaria	Vulnerable	1	0.3	7	22	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M535	Campnosperma auriculata	Common	1.7	0.5	12	22	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
M536	Intsia bijuga	Critically endangered	1.2	0.4	18	47	1) Poor health 2) Die back at canopy	Remove	Directly affected by proposed development
M537	Pandanus cf. atrocarpus	Endangered	5	1.6	9	6	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M538	Cinnamomum iners	Common	1.5	0.5	8	17	1) Good health 2) No significant defects 3) Lean towards SW	Remove	Directly affected by proposed development
M539	Avicennia rumphiana	Common	2	0.6	10	16	1) Good health 2) No significant defects 3) Lean towards SE	Retain	Not directly affected by proposed development
M540	Avicennia rumphiana	Common	2	0.6	14	22	1) Good health 2) Cavity on trunk at H=4.0m facing N	Retain	Not directly affected by proposed development
M541	Avicennia rumphiana	Common	2	0.6	14	22	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M542	Avicennia rumphiana	Common	2.5	0.8	12	15	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M543	Avicennia rumphiana	Common	2.4	0.8	12	16	1) Good health 2) No significant defects 3) Asymmetric canopy	Retain	Not directly affected by proposed development
M544	Avicennia rumphiana	Common	2	0.6	12	19	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M545	Avicennia rumphiana	Common	2	0.6	12	19	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M546	Avicennia rumphiana	Common	2.5	0.8	12	15	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M547	Avicennia rumphiana	Common	3	1.0	10	10	1) Good health 2) Decay on branches	Retain	Not directly affected by proposed development
M548	Avicennia rumphiana	Common	2	0.6	10	16	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M549	Ficus microcarpa	Common	2.15	0.7	15	22	1) Good health 2) No defects	Remove	Directly affected by proposed development
M550	Morella esculenta	Common	1.8	0.6	12	21	1) Good health 2) No significant defects 3) Root flare obvious 4) Multiple attachment	Remove	Directly affected by proposed development
M551	Pouteria obovata	Vulnerable	1.15	0.4	15	41	1) Good health 2) No defects 3) Asymmetric lean towards North	Remove	Directly affected by proposed development
M552	Acacia auriculiformis	Exotic	1.8	0.6	15	26	Annex 5	Remove	Annex 5
M553	Erythrophleum suaveolens	Exotic	1.55	0.5	14	28	1) Good health 2) No defects 3) Root flare obvious	Remove	Directly affected by proposed development
M554	Erythrophleum suaveolens	Exotic	2.3	0.7	15	20	1) Good health 2) No defects 3) Root flare obvious	Remove	Directly affected by proposed development
M555	Erythrophleum suaveolens	Exotic	2.1	0.7	15	22	1) Good health 2) No defects 3) Root flare obvious	Remove	Directly affected by proposed development
M556	Erythrophleum suaveolens	Exotic	2.15	0.7	16	23	1) Good health 2) No defects 3) Root flare obvious	Remove	Directly affected by proposed development
M557	Erythrophleum suaveolens	Exotic	1.5	0.5	15	31	1) Good health 2) No defects 3) Root flare obvious	Remove	Directly affected by proposed development
M558	Erythrophleum suaveolens	Exotic	1.55	0.5	14	28	1) Good health 2) No defects 3) Root flare obvious	Remove	Directly affected by proposed development
M559	Erythrophleum suaveolens	Exotic	1.8	0.6	5	9	1) Good health 2) No defects	Remove	Directly affected by proposed development

M560	Erythrophleum suaveolens	Exotic	3.6	1.1	15	13	1) Good health 2) No defects 3) Root flare obvious	Remove	Directly affected by proposed development
M561	Cinnamomum iners	Common	1.6	0.5	10	20	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M562	Syzygium lineatum	Common	1.8	0.6	12	21	1) Good health 2) No defects	Remove	Directly affected by proposed development
M563	Elaeocarpus mastersii	Common	1.9	0.6	16	26	1) Good health 2) No defects	Remove	Directly affected by proposed development
M564	Erythrophleum suaveolens	Exotic	3.85	1.2	14	11	1) Good health 2) No defects	Remove	Directly affected by proposed development
M565	Syzygium lineatum	Common	1.5	0.5	20	42	1) Good health 2) No significant defects. 2) Extensive aerial root formation on trunk.	Remove	Directly affected by proposed development
M566	Pouteria obovata	Vulnerable	1.3	0.4	20	48	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M567	Litsea firma	Vulnerable	0.85	0.3	20	74	1) Good health 2) Asymmetric canopy 3) Rootflare obvious	Remove	Directly affected by proposed development
M568	Syzygium polyanthum	Vulnerable	0.8	0.3	20	79	1) Good health 2) No significant defects 3) Rootflare obvious	Remove	Directly affected by proposed development
M569	Aporosa nigricans	Endangered	0.15	0.0	2	42	1) Past canopy failure 2) Average health	Remove	Directly affected by proposed development
M570	Dillenia suffruticosa	Common	2.5	0.8	6	8	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M571	Erythrophleum suaveolens	Exotic	2.3	0.7	18	25	1) Good health 2) No significant defects 3) Rootflare obvious	Remove	Directly affected by proposed development
M572	Erythrophleum suaveolens	Exotic	1.9	0.6	20	33	1) Good health 2) V-shape bifurcation with bulge 3) Rootflare obvious	Remove	Directly affected by proposed development
M573	Erythrophleum suaveolens	Exotic	1.8	0.6	8	14	1) Past trunk failure	Remove	Directly affected by proposed development
M574	Erythrophleum suaveolens	Exotic	2.4	0.8	12	16	1) Past trunk failure 2) Good health	Remove	Directly affected by proposed development
M575	Endospermum diadenum	Vulnerable	1.1	0.4	18	51	1) Good health 2) No significant defects 3) Rootflare obvious	Remove	Directly affected by proposed development
M576	Dillenia suffruticosa	Common	2	0.6	6	9	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M577	Oncosperma tigillaria	Vulnerable	cluster	#VALUE!	5	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M578	Casuarina equisetifolia	Common	1.8	0.6	22	38	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M579	Casuarina equisetifolia	Common	2.4	0.8	22	29	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M580	Terminalia catappa	Common	1.5	0.5	16	34	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M581	Nypa fruticans	Vulnerable	1.5-2.0	#VALUE!	6	#VALUE!	1) Good health 2) No significant defects 3) Cluster x6	Retain	Not directly affected by proposed development
M582	Avicennia rumphiana	Common	1.5	0.5	12	25	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M583	Avicennia rumphiana	Common	2	0.6	8	13	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M584	Avicennia rumphiana	Common	1.5	0.5	8	17	1) Good health 2) Decay on trunk at H=5.0m	Remove	Directly affected by proposed development
M585	Avicennia rumphiana	Common	2.4	0.8	12	16	1) Good health 2) Extensive cavity on trunk at H=5.0m	Remove	Directly affected by proposed development
M586	Samanea saman	Exotic	1.8	0.6	15	26	1) Good health 2) No significant defects 3) Growing on slope	Remove	Directly affected by proposed development
M587	Falcataria moluccana	Exotic	3	1.0	18	19	Annex 5	Remove	Annex 5
M588	Ficus variegata	Common	1.5	0.5	15	31	1) Good health 2) Growing on slope 3) Cavity on trunk at H=5.0m	Remove	Directly affected by proposed development
M589	Ficus variegata	Common	Covered	#VALUE!	14	#VALUE!	1) Good health 2) Assessment limited by think vegetation	Remove	Directly affected by proposed development
M590	Cecropia pachystachya	Exotic	3.5	1.1	9	8	1) Invasive species 2) Saplings within proximity	Remove	Directly affected by proposed development
M591	Ficus variegata	Common	2	0.6	12	19	1) Good health 2) No significant defects 3) Assessment limited by thick vegetation & climbers	Remove	Directly affected by proposed development
M592	Falcataria moluccana	Exotic	3	1.0	18	19	Annex 5	Remove	Annex 5
M593	Cecropia pachystachya	Exotic	2	0.6	8	13	1) Invasive species	Remove	Directly affected by proposed development
M594	Samanea saman	Exotic	1.5	0.5	9	19	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M595	Samanea saman	Exotic	1.5	0.5	15	31	1) Good health 2) No significant defects 3) V-shaped bifurcation	Remove	Directly affected by proposed development
M596	Sonneratia caseolaris	Critically endangered	1.25	0.4	10	25	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M597	Xylocarpus moluccensis	Endangered	0.1	0.0	2.5	79	1) Good health 2) No significant defects	Retain	Not directly affected by proposed development
M598	Litsea elliptica	Common	2.1	0.7	25	37	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
M599	Litsea firma	Vulnerable	0.8	0.3	12	47	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development

M600	Porterandia anisophylla	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M601	Porterandia anisophylla	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M602	Campnosperma auriculata	Common	1.7	0.5	20	37	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
M603	Macaranga gigantea	Common	1.5	0.5	16	34	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M604	Vitex pinnata	Common	1.95	0.6	18	29	1) Average health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
M605	Lindera lucida	Vulnerable	0.55	0.2	6	34	1) Good health 2) No significant defects 3) Asymmetric canopy	Remove	Directly affected by proposed development
M606	Oncosperma tigillaria	Vulnerable	0.6	0.2	4	21	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M607	Canthium confertum	Endangered	0.05	0.0	4	251	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M608	Pouteria obovata	Vulnerable	0.15	0.0	5	105	1) Average health 2) No significant defects 3) Leaves necrotic	Remove	Directly affected by proposed development
M609	Lindera lucida	Vulnerable	0.85	0.3	18	67	1) Poor health 2) Die back at canopy	Remove	Directly affected by proposed development
M610	Peltophorum pterocarpum	Critically endangered	0.4	0.1	7	55	1) Good health 2) No significant defects 3) Asymmetric canopy	Remove	Directly affected by proposed development
M611	Peltophorum pterocarpum	Critically endangered	0.45	0.1	7	49	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M612	Samanea saman	Exotic	0.2	0.1	18	283	1) Good health 2) No significant defects 3) Asymmetric canopy 4) U-shaped bifurcation	Remove	Directly affected by proposed development
M613	Cerbera odollam	Vulnerable (Planted)	1.5	0.5	9	19	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M614	Cerbera odollam	Vulnerable (Planted)	1.4	0.4	7	16	1) Good health 2) No significant defects 3) Asymmetric lean towards NE	Remove	Directly affected by proposed development
M615	Taliparíti tiliaceum	Common	0.7-1.0	#VALUE!	6	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
M616	Ficus variegata	Common	1.8	0.6	16	28	1) Good health 2) No significant defects 3) Root flare obvious 4) Asymmetric canopy 5) Low bifurcation	Remove	Directly affected by proposed development
M617	Pouteria obovata	Vulnerable	0.9	0.3	12	42	1) Good health, No defects. 2)Observation limited by undergrowth.	Remove	Directly affected by proposed development
M618	Pouteria obovata	Vulnerable	0.3	0.1	4	42	1) Good health, No defects. 2)Observation limited by undergrowth.	Remove	Directly affected by proposed development
M619	Neesia synandra	Vulnerable	0.4	0.1	8	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0001	Syzygium polyanthum	Vulnerable	0.2+0.2	#VALUE!	4	#VALUE!	1) Good health 2) No significant defects 3) Cluster x2	Remove	Directly affected by proposed development
TR0002	Acacia auriculiformis	Exotic	1.7	0.5	18	33	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0003	Acacia auriculiformis	Exotic	1.1	0.4	14	40	Annex 5	Remove	Directly affected by proposed development
TR0004	Falcataria moluccana	Exotic	2.2	0.7	20	29	Annex 5	Remove	Directly affected by proposed development
TR0005	Andira inermis	Exotic	1.3	0.4	8	19	Annex 5	Remove	Directly affected by proposed development
TR0006	Andira inermis	Exotic	2.4	0.8	12	16	Annex 5	Remove	Directly affected by proposed development
TR0007	Andira inermis	Exotic	1	0.3	6	19	Annex 5	Remove	Directly affected by proposed development
TR0008	Falcataria moluccana	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0009	Falcataria moluccana	Exotic	2.4	0.8	18	24	Annex 5	Remove	Directly affected by proposed development
TR0010	Andira inermis	Exotic	1.2	0.4	12	31	Annex 5	Remove	Directly affected by proposed development
TR0011	Acacia auriculiformis	Exotic	1	0.3	12	38	Annex 5	Remove	Directly affected by proposed development
TR0012	Andira inermis	Exotic	1.1	0.4	12	34	Annex 5	Remove	Directly affected by proposed development
TR0013	Andira inermis	Exotic	1.1	0.4	9	26	Annex 5	Remove	Directly affected by proposed development
TR0014	Mangifera odorata	Vulnerable	1.7	0.5	16	30	1) Good health 2) No significant defects 3) Root flare obvious 4) V-shaped bifurcation 5) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0015	Pterocarpus indicus	Exotic	5.1	1.6	20	12	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0016	Pouteria obovata	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0017	Cyrtophyllum fragrans	Common	5	1.6	16	10	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0018	Mangifera odorata	Vulnerable	2.65	0.8	18	21	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0019	Falcataria moluccana	Exotic	1.5	0.5	22	46	Annex 5	Remove	Directly affected by proposed development
TR0020	Cinnamomum iners	Common	2.1	0.7	12	18	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development

TR0021	Cinnamomum iners	Common	1.25	0.4	12	30	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0022	Cinnamomum iners	Common	1.7	0.5	12	22	1) Good health 2) No significant defects 3) Root flare obvious 4) Low bifurcation	Remove	Directly affected by proposed development
TR0023	Cinnamomum iners	Common	1.5	0.5	12	25	1) Good health 2) No significant defects 3) Root flare obvious 4) Low bifurcation	Remove	Directly affected by proposed development
TR0024	Falcataria moluccana	Exotic	1.8	0.6	22	38	Annex 5	Remove	Directly affected by proposed development
TR0025	Falcataria moluccana	Exotic	1.2	0.4	20	52	Annex 5	Remove	Directly affected by proposed development
TR0026	Falcataria moluccana	Exotic	1.2	0.4	20	52	Annex 5	Remove	Directly affected by proposed development
TR0027	Falcataria moluccana	Exotic	2.4	0.8	22	29	Annex 5	Remove	Directly affected by proposed development
TR0028	Falcataria moluccana	Exotic	2.1	0.7	22	33	Annex 5	Remove	Directly affected by proposed development
TR0029	Falcataria moluccana	Exotic	2	0.6	22	35	Annex 5	Remove	Directly affected by proposed development
TR0030	Falcataria moluccana	Exotic	1.5	0.5	8	17	Annex 5	Remove	Directly affected by proposed development
TR0031	Litsea firma	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0032	Falcataria moluccana	Exotic	1.3	0.4	18	44	Annex 5	Remove	Directly affected by proposed development
TR0033	Falcataria moluccana	Exotic	2.1	0.7	22	33	Annex 5	Remove	Directly affected by proposed development
TR0034	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0035	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0036	Falcataria moluccana	Exotic	1.2	0.4	20	52	Annex 5	Remove	Directly affected by proposed development
TR0037	Falcataria moluccana	Exotic	1.4	0.4	22	49	Annex 5	Remove	Directly affected by proposed development
TR0038	Cyrtophyllum fragrans	Common	5	1.6	20	13	1) Good health 2) No significant defects 3) Multiple attachments	Remove	Directly affected by proposed development
TR0039	Falcataria moluccana	Exotic	1.6	0.5	22	43	Annex 5	Remove	Directly affected by proposed development
TR0040	Falcataria moluccana	Exotic	2	0.6	22	35	Annex 5	Remove	Directly affected by proposed development
TR0041	Falcataria moluccana	Exotic	1.5	0.5	22	46	Annex 5	Remove	Directly affected by proposed development
TR0042	Lindera lucida	Vulnerable	0.05	0.0	2.5	157	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0043	Falcataria moluccana	Exotic	1.4	0.4	20	45	Annex 5	Remove	Directly affected by proposed development
TR0044	Litsea firma	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0045	Litsea firma	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0046	Cyrtophyllum fragrans	Common	2.1	0.7	16	24	1) Pood health 2) Termite infestation 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0047	Falcataria moluccana	Exotic	1.15	0.4	20	55	Annex 5	Remove	Directly affected by proposed development
TR0048	Falcataria moluccana	Exotic	1.8	0.6	22	38	Annex 5	Remove	Directly affected by proposed development
TR0049	Falcataria moluccana	Exotic	1.2	0.4	20	52	Annex 5	Remove	Directly affected by proposed development
TR0050	Falcataria moluccana	Exotic	1.2	0.4	22	58	Annex 5	Remove	Directly affected by proposed development
TR0051	Schefflera actinophylla	Exotic	2.05	0.7	11	17	1) Good health 2) No significant defects 3) Co-dominant trunk	Remove	Directly affected by proposed development
TR0052	Artocarpus heterophyllus	Exotic	1.25	0.4	16	40	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0053	Andira inermis	Exotic	1	0.3	16	50	Annex 5	Remove	Directly affected by proposed development
TR0054	Ravenala madagascariensis	Exotic	Cluster	#VALUE!	9	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0055	Macaranga gigantea	Common	1.25	0.4	16	40	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0056	Artocarpus heterophyllus	Exotic	2.1	0.7	12	18	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0057	Artocarpus heterophyllus	Exotic	1.1	0.4	7	20	1) Poor health 2) Decay on trunk 3) Die back at canopy	Remove	Directly affected by proposed development
TR0058	Ravenala madagascariensis	Exotic	Cluster	#VALUE!	9	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0059	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0060	Ravenala madagascariensis	Exotic	Cluster	#VALUE!	9	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

TR0061	Syzygium grande	Common	1.2	0.4	16	42	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0062	Macaranga gigantea	Common	1.3	0.4	18	44	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0063	Cyrtophyllum fragrans	Common	3.4	1.1	20	18	1) Good health 2) Extensive decay on trunk facing SW	Remove	Directly affected by proposed development
TR0064	Cyrtophyllum fragrans	Common	3	1.0	20	21	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0065	Cyrtophyllum fragrans	Common	2.1	0.7	16	24	1) Good health 2) No significant defects 3) Asymmetric canopy 4) V-shaped bifurcation	Remove	Directly affected by proposed development
TR0066	Mangifera odorata	Vulnerable	1.25	0.4	18	45	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0067	Falcataria moluccana	Exotic	3.6	1.1	20	17	Annex 5	Remove	Directly affected by proposed development
TR0068	Ravenala madagascariensis	Exotic	Cluster	#VALUE!	9	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0069	Falcataria moluccana	Exotic	2.1	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0070	Falcataria moluccana	Exotic	3	1.0	20	21	Annex 5	Remove	Directly affected by proposed development
TR0071	Andira inermis	Exotic	1.5	0.5	16	34	Annex 5	Remove	Directly affected by proposed development
TR0072	Andira inermis	Exotic	2.6	0.8	18	22	Annex 5	Remove	Directly affected by proposed development
TR0073	Cyrtophyllum fragrans	Common	1.45	0.5	14	30	1) Good health 2) No significant defects 3) Asymmetric lean towards NE	Remove	Directly affected by proposed development
TR0074	Andira inermis	Exotic	1.6	0.5	18	35	Annex 5	Remove	Directly affected by proposed development
TR0075	Acacia auriculiformis	Exotic	1.4	0.4	18	40	Annex 5	Remove	Directly affected by proposed development
TR0076	Acacia auriculiformis	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0077	Acacia auriculiformis	Exotic	1.5	0.5	16	34	Annex 5	Remove	Directly affected by proposed development
TR0078	Acacia auriculiformis	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0079	Andira inermis	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0080	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0081	Aidia densiflora	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0082	Acacia auriculiformis	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0083	Acacia auriculiformis	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0084	Acacia auriculiformis	Exotic	2.5	0.8	20	25	Annex 5	Remove	Directly affected by proposed development
TR0085	Cyrtophyllum fragrans	Common	1.6	0.5	9	18	1) Poor health 2) Dying 3) Total canopy defoliation	Remove	Directly affected by proposed development
TR0086	Macaranga gigantea	Common	1.2	0.4	16	42	1) Good health 2) Decay on primary branch 3) Root flare obvious	Remove	Directly affected by proposed development
TR0087	Macaranga gigantea	Common	1.85	0.6	16	27	1) Good health 2) No significant defects 3) Root flare obvious 4) Multiple attachment	Remove	Directly affected by proposed development
TR0088	Acacia auriculiformis	Exotic	1.3	0.4	16	39	Annex 5	Remove	Directly affected by proposed development
TR0089	Spathodea campanulata	Exotic	1.2	0.4	14	37	Annex 5	Remove	Directly affected by proposed development
TR0090	Macaranga gigantea	Common	1	0.3	9	28	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0091	Macaranga gigantea	Common	1.15	0.4	9	25	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0092	Senna siamea	Exotic	1.1	0.4	16	46	1) Good health 2) No significant defects 3) Root flare obvious 4) Termite infestation	Remove	Directly affected by proposed development
TR0093	Spathodea campanulata	Exotic	1.6	0.5	16	31	Annex 5	Remove	Directly affected by proposed development
TR0094	Acacia auriculiformis	Exotic	1.5	0.5	14	29	Annex 5	Remove	Directly affected by proposed development
TR0095	Acacia auriculiformis	Exotic	1.8	0.6	10	17	Annex 5	Remove	Directly affected by proposed development
TR0096	Falcataria moluccana	Exotic	2	0.6	18	28	Annex 5	Remove	Directly affected by proposed development
TR0097	Acacia auriculiformis	Exotic	1.5	0.5	8	17	Annex 5	Remove	Directly affected by proposed development
TR0098	Acacia auriculiformis	Exotic	1	0.3	8	25	Annex 5	Remove	Directly affected by proposed development
TR0099	Cecropia pachystachya	Exotic	1.1	0.4	12	34	1) Good health 2) No significant defects 3) Invasive species	Remove	Directly affected by proposed development
TR0100	Acacia auriculiformis	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development

TR0101	Acacia auriculiformis	Exotic	1.1	0.4	14	40	Annex 5	Remove	Directly affected by proposed development
TR0102	Acacia auriculiformis	Exotic	1.15	0.4	14	38	Annex 5	Remove	Directly affected by proposed development
TR0103	Falcataria moluccana	Exotic	1.8+1.8	#VALUE!	20	#VALUE!	Annex 5	Remove	Directly affected by proposed development
TR0104	Falcataria moluccana	Exotic	1.6	0.5	20	39	Annex 5	Remove	Directly affected by proposed development
TR0105	Polyalthia longifolia	Exotic	1.8	0.6	10	17	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0106	Macaranga gigantea	Common	1.4	0.4	12	27	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0107	Acacia auriculiformis	Exotic	2.7	0.9	12	14	Annex 5	Remove	Directly affected by proposed development
TR0108	Andira inermis	Exotic	1.05	0.3	14	42	Annex 5	Remove	Directly affected by proposed development
TR0109	Andira inermis	Exotic	1.05	0.3	14	42	Annex 5	Remove	Directly affected by proposed development
TR0110	Andira inermis	Exotic	1.05	0.3	10	30	Annex 5	Remove	Directly affected by proposed development
TR0111	Artocarpus heterophyllus	Exotic	1.3	0.4	14	34	1) Good health 2) Decay on trunk at H=2.0m facing SE 3) Multiple attachment 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0112	Andira inermis	Exotic	1.2	0.4	12	31	Annex 5	Remove	Directly affected by proposed development
TR0113	Andira inermis	Exotic	1.5	0.5	16	34	Annex 5	Remove	Directly affected by proposed development
TR0114	Syzygium grande	Common	1.4	0.4	16	36	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0115	Cocos nucifera	Exotic	1	0.3	14	44	Annex 5	Remove	Directly affected by proposed development
TR0116	Acacia auriculiformis	Exotic	1.6	0.5	18	35	Annex 5	Remove	Directly affected by proposed development
TR0117	Mangifera indica	Exotic	1.55	0.5	14	28	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0118	Andira inermis	Exotic	1.2	0.4	14	37	Annex 5	Remove	Directly affected by proposed development
TR0119	Mangifera indica	Exotic	1.9	0.6	16	26	1) Good health 2) Decay on branch 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0120	Mangifera indica	Exotic	1.6	0.5	16	31	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0121	Acacia auriculiformis	Exotic	1.3	0.4	10	24	Annex 5	Remove	Directly affected by proposed development
TR0122	Acacia auriculiformis	Exotic	1	0.3	9	28	Annex 5	Remove	Directly affected by proposed development
TR0123	Falcataria moluccana	Exotic	4	1.3	20	16	Annex 5	Remove	Directly affected by proposed development
TR0124	Falcataria moluccana	Exotic	4.5	1.4	22	15	Annex 5	Remove	Directly affected by proposed development
TR0125	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0126	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0127	Cecropia pachystachya	Exotic	1.0+1.0	#VALUE!	8	#VALUE!	1) Good health 2) No significant defects 3) Invasive species	Remove	Directly affected by proposed development
TR0128	Falcataria moluccana	Exotic	3.2	1.0	18	18	Annex 5	Remove	Directly affected by proposed development
TR0129	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0130	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0131	Falcataria moluccana	Exotic	1.3	0.4	20	48	Annex 5	Remove	Directly affected by proposed development
TR0132	Falcataria moluccana	Exotic	1.6	0.5	20	39	Annex 5	Remove	Directly affected by proposed development
TR0133	Falcataria moluccana	Exotic	1	0.3	16	50	Annex 5	Remove	Directly affected by proposed development
TR0134	Falcataria moluccana	Exotic	1.3	0.4	20	48	Annex 5	Remove	Directly affected by proposed development
TR0135	Falcataria moluccana	Exotic	1	0.3	16	50	Annex 5	Remove	Directly affected by proposed development
TR0136	Falcataria moluccana	Exotic	1.4	0.4	16	36	Annex 5	Remove	Directly affected by proposed development
TR0137	Falcataria moluccana	Exotic	2.2	0.7	20	29	Annex 5	Remove	Directly affected by proposed development
TR0138	Falcataria moluccana	Exotic	1.2	0.4	20	52	Annex 5	Remove	Directly affected by proposed development
TR0139	Falcataria moluccana	Exotic	4	1.3	22	17	Annex 5	Remove	Directly affected by proposed development
TR0140	Falcataria moluccana	Exotic	2.3	0.7	22	30	Annex 5	Remove	Directly affected by proposed development

TR0141	Falcataria moluccana	Exotic	1	0.3	10	31	Annex 5	Remove	Directly affected by proposed development
TR0142	Falcataria moluccana	Exotic	2	0.6	22	35	Annex 5	Remove	Directly affected by proposed development
TR0143	Falcataria moluccana	Exotic	1.4	0.4	12	27	Annex 5	Remove	Directly affected by proposed development
TR0144	Falcataria moluccana	Exotic	3	1.0	22	23	Annex 5	Remove	Directly affected by proposed development
TR0145	Falcataria moluccana	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0146	Pouteria obovata	Vulnerable	0.05	0.0	3	189	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0147	Falcataria moluccana	Exotic	2.4	0.8	20	26	Annex 5	Remove	Directly affected by proposed development
TR0148	Falcataria moluccana	Exotic	1	0.3	8	25	Annex 5	Remove	Directly affected by proposed development
TR0149	Falcataria moluccana	Exotic	3	1.0	22	23	Annex 5	Remove	Directly affected by proposed development
TR0150	Falcataria moluccana	Exotic	1.5	0.5	18	38	Annex 5	Remove	Directly affected by proposed development
TR0151	Falcataria moluccana	Exotic	4	1.3	20	16	Annex 5	Remove	Directly affected by proposed development
TR0152	Falcataria moluccana	Exotic	1.3	0.4	10	24	Annex 5	Remove	Directly affected by proposed development
TR0153	Falcataria moluccana	Exotic	1.2	0.4	10	26	Annex 5	Remove	Directly affected by proposed development
TR0154	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0155	Falcataria moluccana	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0156	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0157	Falcataria moluccana	Exotic	2.5	0.8	20	25	Annex 5	Remove	Directly affected by proposed development
TR0158	Falcataria moluccana	Exotic	2.1	0.7	16	24	Annex 5	Remove	Directly affected by proposed development
TR0159	Falcataria moluccana	Exotic	1.3	0.4	20	48	Annex 5	Remove	Directly affected by proposed development
TR0160	Falcataria moluccana	Exotic	2	0.6	20	31	Annex 5	Remove	Directly affected by proposed development
TR0161	Falcataria moluccana	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0162	Falcataria moluccana	Exotic	2	0.6	18	28	Annex 5	Remove	Directly affected by proposed development
TR0163	Falcataria moluccana	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0164	Spathodea campanulata	Exotic	1.4	0.4	12	27	Annex 5	Remove	Directly affected by proposed development
TR0165	Spathodea campanulata	Exotic	1.2	0.4	12	31	Annex 5	Remove	Directly affected by proposed development
TR0166	Spathodea campanulata	Exotic	2.1	0.7	16	24	Annex 5	Remove	Directly affected by proposed development
TR0167	Spathodea campanulata	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0168	Spathodea campanulata	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0169	Spathodea campanulata	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0170	Falcataria moluccana	Exotic	2.1	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0171	Falcataria moluccana	Exotic	2.1	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0172	Falcataria moluccana	Exotic	1.3	0.4	20	48	Annex 5	Remove	Directly affected by proposed development
TR0173	Falcataria moluccana	Exotic	1.3	0.4	20	48	Annex 5	Remove	Directly affected by proposed development
TR0174	Falcataria moluccana	Exotic	1.1	0.4	14	40	Annex 5	Remove	Directly affected by proposed development
TR0175	Falcataria moluccana	Exotic	1	0.3	18	57	Annex 5	Remove	Directly affected by proposed development
TR0176	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0177	Falcataria moluccana	Exotic	1.1	0.4	20	57	Annex 5	Remove	Directly affected by proposed development
TR0178	Falcataria moluccana	Exotic	1.4	0.4	20	45	Annex 5	Remove	Directly affected by proposed development
TR0179	Falcataria moluccana	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0180	Falcataria moluccana	Exotic	1.4	0.4	18	40	Annex 5	Remove	Directly affected by proposed development

TR0181	Falcataria moluccana	Exotic	1.05	0.3	14	42	Annex 5	Remove	Directly affected by proposed development
TR0182	Cyrtophyllum fragrans	Common	3.9	1.2	18	15	1) Good health 2) No significant defects 3) Asymmetric canopy	Remove	Directly affected by proposed development
TR0183	Cyrtophyllum fragrans	Common	2.1+2.1+1.9	#VALUE!	20	#VALUE!	1) Good health 2) No significant defects 3) Multiple attachment	Remove	Directly affected by proposed development
TR0184	Santiria laevigata	Vulnerable	0.05	0.0	1	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0185	Endospermum diadenum	Vulnerable	0.05	0.0	1.7	107	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0186	Pouteria obovata	Vulnerable	0.1	0.0	4	126	1) Average health 2) No significant defects	Remove	Directly affected by proposed development
TR0187	Cyrtophyllum fragrans	Common	2.9+2.9	#VALUE!	18	#VALUE!	1) Good health 2) Exposed deadwood on trunk 3) Co-dominant trunk	Remove	Directly affected by proposed development
TR0188	Falcataria moluccana	Exotic	1.3	0.4	18	44	Annex 5	Remove	Directly affected by proposed development
TR0189	Cyrtophyllum fragrans	Common	2.5	0.8	18	23	1) Good health 2) Large decay at tree base facing SW	Remove	Directly affected by proposed development
TR0190	Spathodea campanulata	Exotic	2.4	0.8	14	18	Annex 5	Remove	Directly affected by proposed development
TR0191	Lindera lucida	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0192	Rhodamnia cinerea	Common	1.4	0.4	15	34	1) Average health 2) Extensive decay on trunk	Remove	Directly affected by proposed development
TR0193	Macaranga gigantea	Common	1.3	0.4	10	24	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0193A	Spathodea campanulata	Exotic	1.1	0.4	14	40	Annex 5	Remove	Directly affected by proposed development
TR0194	Cyrtophyllum fragrans	Common	2.6	0.8	18	22	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0196	Macaranga hypoleuca	Common	1.3	0.4	16	39	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0197	Cyrtophyllum fragrans	Common	4.1	1.3	16	12	1) Good health 2) No significant defects 3) Co-dominant trunk 4) Ficus benjamina growing on tree	Remove	Directly affected by proposed development
TR0198	Lindera lucida	Vulnerable	0.25	0.1	5	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0199	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0200	Bauhinia semibifida var. semibifida	Vulnerable	Climber	#VALUE!	-	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0201	Ficus aurata	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0202	Cyrtophyllum fragrans	Common	2.1	0.7	18	27	1) Average health 2) Minor die back at canopy 3) Multiple branch attachment	Remove	Directly affected by proposed development
TR0203	Cyrtophyllum fragrans	Common	3.15	1.0	20	20	1) Good health 2) Cavity on branch 3) Co-dominant branch 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0204	Cyrtophyllum fragrans	Common	2.55	0.8	20	25	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0205	Cyrtophyllum fragrans	Common	1.95	0.6	18	29	1) Good health 2) Large decay at tree base due to past co-dominant trunk failure	Remove	Directly affected by proposed development
TR0206	Oncosperma tigillaria	Vulnerable	0.5	0.2	4	25	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0207	Oncosperma tigillaria	Vulnerable	0.5	0.2	4	25	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0208	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0209	Ficus aurata	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0210	Falcataria moluccana	Exotic	3.8	1.2	20	17	Annex 5	Remove	Directly affected by proposed development
TR0211	Spathodea campanulata	Exotic	1.6	0.5	12	24	Annex 5	Remove	Directly affected by proposed development
TR0212	Spathodea campanulata	Exotic	1.4	0.4	10	22	Annex 5	Remove	Directly affected by proposed development
TR0213	Lindera lucida	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0214	Macaranga gigantea	Common	1.5	0.5	14	29	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0215	Litsea firma	Vulnerable	0.15	0.0	4	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0216	Cyrtophyllum fragrans	Common	1.1	0.4	14	40	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0217	Oncosperma tigillaria	Vulnerable	Cluster	#VALUE!	7	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0218	Litsea firma	Vulnerable	0.15	0.0	5	105	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0219	Ixonanthes reticulata	Common	0.15	0.0	5	105	(suspected Gordonia, confirm it is Ixonanthes). 1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0220	Bauhinia semibifida var. semibifida	Vulnerable	Climber	#VALUE!	-	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

TR0221	Glochidion lutescens	Critically endangered	0.2+0.15+0.1	#VALUE!	5	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0222	Ficus aurata	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0223	Macaranga recurvata	Critically endangered	0.3	0.1	6	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0224	Lindera lucida	Vulnerable	0.15	0.0	5	105	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0225	Cyrtophyllum fragrans	Common	1.4	0.4	18	40	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0226	Ixonanthes reticulata	Common	3.5	1.1	20	18	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0227	Cyrtophyllum fragrans	Common	2.6	0.8	20	24	1) Good health 2) No significant defects 3) Multiple branch attachment	Remove	Directly affected by proposed development
TR0228	Bauhinia semibifida var. semibifida	Vulnerable	Climber	#VALUE!	-	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0229	Litsea firma	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0230	Litsea firma	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0231	Cyathea latebrosa	Vulnerable	0.2	0.1	2	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0232	Cyathea latebrosa	Vulnerable	0.2	0.1	1.8	28	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0233	Ficus aurata	Vulnerable	0.05	0.0	3	189	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0234	Litsea firma	Vulnerable	0.3	0.1	6	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0235	Litsea firma	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0236	Cyathea latebrosa	Vulnerable	0.2	0.1	1	16	1) Average health 2) No significant defects	Remove	Directly affected by proposed development
TR0237	Litsea firma	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0238	Lindera lucida	Vulnerable	0.2	0.1	3	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0239	Oncosperma tigillaria	Vulnerable	0.5	0.2	3	19	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0240	Oncosperma tigillaria	Vulnerable	0.2	0.1	4	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0241	Litsea firma	Vulnerable	0.05	0.0	4	251	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0242	Cyathea latebrosa	Vulnerable	0.3	0.1	1.2	13	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0243	Cyathea latebrosa	Vulnerable	0.2	0.1	1.2	19	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0244	Oncosperma tigillaria	Vulnerable	0.5	0.2	4	25	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0245	Pinanga cf. malaiana	Endangered	0.2	0.1	2	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0246	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0247	Lindera lucida	Vulnerable	0.2	0.1	4	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0248	Cyathea latebrosa	Vulnerable	0.2-0.3	#VALUE!	1.2-1.7	#VALUE!	1) Good health 2) No significant defects 3) Clusters x8	Remove	Directly affected by proposed development
TR0249	Santiria laevigata	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0250	Falcataria moluccana	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0251	Ficus vasculosa	Endangered	0.65	0.2	9	44	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0252	Cyrtophyllum fragrans	Common	2.9	0.9	18	20	1) Good health 2) Large exposed deadwood on trunk facing S 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0253	Cyrtophyllum fragrans	Common	1.6	0.5	18	35	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0254	Cyrtophyllum fragrans	Common	2.7	0.9	18	21	1) Good health 2) Large exposed deadwood on trunk facing SW	Remove	Directly affected by proposed development
TR0255	Litsea firma	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects 3) Clusters with in proximity	Remove	Directly affected by proposed development
TR0256	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0257	Lindera lucida	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0258	Falcataria moluccana	Exotic	2.1	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0259	Lindera lucida	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects 3) Clusters with in proximity	Remove	Directly affected by proposed development
TR0260	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects 3) Clusters with in proximity	Remove	Directly affected by proposed development

TR0261	Ficus microcarpa	Common	10.0 spread	#VALUE!	20	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0262	Cyrtophyllum fragrans	Common	3	1.0	18	19	1) Average health 2) Past canopy failure resulting in asymmetric crown 3) Strangled by Ficus(TR0261)	Remove	Directly affected by proposed development
TR0263	Adinandra dumosa	Common	1.6	0.5	8	16	1) Poor health 2) Die back at canopy 3) V-shaped bifurcation 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0264	Hevea brasiliensis	Exotic	1.2	0.4	16	42	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0265	Chassalia curviflora	Endangered	0.05	0.0	1	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0266	Litsea firma	Vulnerable	0.05	0.0	1.8	113	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0267	Cyrtophyllum fragrans	Common	3	1.0	20	21	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0268	Cyrtophyllum fragrans	Common	1.1	0.4	18	51	1) Good health 2) No significant defects 3) Low bifurcation	Remove	Directly affected by proposed development
TR0269	Hevea brasiliensis	Exotic	1	0.3	16	50	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0270	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0271	Litsea firma	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0272	Litsea firma	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0273	Falcataria moluccana	Exotic	1.7	0.5	20	37	Annex 5	Remove	Directly affected by proposed development
TR0274	Falcataria moluccana	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0275	Falcataria moluccana	Exotic	2.5	0.8	20	25	Annex 5	Remove	Directly affected by proposed development
TR0276	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0277	Acacia auriculiformis	Exotic	1.1	0.4	10	29	Annex 5	Remove	Directly affected by proposed development
TR0278	Lindera lucida	Vulnerable	0.3	0.1	6	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0279	Acacia auriculiformis	Exotic	1.1	0.4	10	29	Annex 5	Remove	Directly affected by proposed development
TR0280	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0281	Lindera lucida	Vulnerable	0.1	0.0	3	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0282	Cyrtophyllum fragrans	Common	1.2	0.4	9	24	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0283	Ficus variegata	Common	1.3	0.4	8	19	1) Average health 2) Low bifurcation 3) Die back at canopy 4) Growing on drain	Remove	Directly affected by proposed development
TR0284	Artocarpus integer	Exotic	1.4	0.4	12	27	1) Poor health 2) Decay at tree base 3) Die back at canopy	Remove	Directly affected by proposed development
TR0285	Morinda elliptica	Not listed	1.6	0.5	8	16	1) Good health 2) Decay on primary branch 3) Asymmetric canopy	Remove	Directly affected by proposed development
TR0286	Nephelium lappaceum	Critically endangered (planted)	1.15	0.4	7	19	1) Good health 2) Decay on branches	Remove	Directly affected by proposed development
TR0287	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0288	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0289	Mangifera indica	Exotic	1.5	0.5	8	17	1) Good health 2) Decay on primary branch 3) Multiple branch attachment	Remove	Directly affected by proposed development
TR0290	Cyrtophyllum fragrans	Common	2.7	0.9	18	21	1) Good health 2) No significant defects 3) Strangled by Ficus microcarpa	Remove	Directly affected by proposed development
TR0291	Oncosperma tigillaria	Vulnerable	0.3	0.1	1.5	16	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0292	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0293	Falcataria moluccana	Exotic	1.4	0.4	18	40	Annex 5	Remove	Directly affected by proposed development
TR0294	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0295	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0296	Falcataria moluccana	Exotic	1.05	0.3	20	60	Annex 5	Remove	Directly affected by proposed development
TR0297	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0298	Falcataria moluccana	Exotic	1.1+0.9	#VALUE!	16	#VALUE!	Annex 5	Remove	Directly affected by proposed development
TR0299	Falcataria moluccana	Exotic	1.2	0.4	20	52	Annex 5	Remove	Directly affected by proposed development
TR0300	Falcataria moluccana	Exotic	1.4	0.4	20	45	Annex 5	Remove	Directly affected by proposed development

TR0323	Falcataria moluccana	Exotic	1.3	0.4	18	44	Annex 5	Remove	Directly affected by proposed development
TR0324	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0325	Lindera lucida	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0326	Falcataria moluccana	Exotic	1.3	0.4	20	48	Annex 5	Remove	Directly affected by proposed development
TR0327	Cyrtophyllum fragrans	Common	2.5	0.8	18	23	1) Good health 2) Decay on trunk facing W	Remove	Directly affected by proposed development
TR0328	Cyrtophyllum fragrans	Common	3.1	1.0	20	20	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0329	Araucaria heterophylla	Exotic	1.1	0.4	16	46	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0330	Lindera lucida	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0331	Dillenia suffruticosa	Common	1	0.3	4	13	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0332	Macaranga gigantea	Common	1.3	0.4	14	34	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0333	Lindera lucida	Vulnerable	1	0.3	9	28	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0334	Litsea firma	Vulnerable	0.05	0.0	2.5	157	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0335	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0336	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0337	Lindera lucida	Vulnerable	0.3	0.1	8	84	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0338	Litsea firma	Vulnerable	0.25	0.1	6	75	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0339	Lindera lucida	Vulnerable	0.4	0.1	8	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0340	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0341	Araucaria heterophylla	Exotic	1.2	0.4	9	24	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0342	Falcataria moluccana	Exotic	2.1	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0343	Lindera lucida	Vulnerable	0.3	0.1	7	73	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0344	Lindera lucida	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0345	Falcataria moluccana	Exotic	2.4	0.8	20	26	Annex 5	Remove	Directly affected by proposed development
TR0346	Falcataria moluccana	Exotic	2.4	0.8	20	26	Annex 5	Remove	Directly affected by proposed development
TR0347	Spathodea campanulata	Exotic	1.4	0.4	16	36	Annex 5	Remove	Directly affected by proposed development
TR0348	Falcataria moluccana	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0349	Falcataria moluccana	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0350	Livistona cf. rotundifolia	Exotic	1.2	0.4	8	21	1) Good health 2) Decay on trunk	Remove	Directly affected by proposed development
TR0351	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0352	Lindera lucida	Vulnerable	0.4	0.1	6	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0353	Falcataria moluccana	Exotic	1.5+0.9	#VALUE!	18	#VALUE!	Annex 5	Remove	Directly affected by proposed development
TR0354	Falcataria moluccana	Exotic	1.3	0.4	10	24	Annex 5	Remove	Directly affected by proposed development
TR0355	Lindera lucida	Vulnerable	0.5	0.2	6	38	1) Good health 2) No significant defects 3) Co-dominant trunk 4) Clusters within proximity	Remove	Directly affected by proposed development
TR0356	Falcataria moluccana	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0357	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0358	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0359	Falcataria moluccana	Exotic	2.4	0.8	12	16	Annex 5	Remove	Directly affected by proposed development
TR0360	Acacia auriculiformis	Exotic	1.4	0.4	18	40	Annex 5	Remove	Directly affected by proposed development
TR0361	Lindera lucida	Vulnerable	0.5	0.2	10	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0362	Lindera lucida	Vulnerable	0.6	0.2	12	63	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development

TR0363	Lindera lucida	Vulnerable	0.5	0.2	7	44	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0364	Lindera lucida	Vulnerable	0.3	0.1	7	73	1) Good health 2) No significant defects 3) Lean towards NW	Remove	Directly affected by proposed development
TR0365	Litsea firma	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0366	Lindera lucida	Vulnerable	0.3	0.1	6	63	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0367	Litsea firma	Vulnerable	0.05	0.0	4	251	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0368	Lindera lucida	Vulnerable	0.4	0.1	6	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0369	Ficus aurata	Vulnerable	0.05	0.0	3	189	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0370	Ficus vasculosa	Endangered	0.05	0.0	1.2	75	1) Good health 2) No significant defects 3) Cluster x2	Remove	Directly affected by proposed development
TR0371	Cyathea latebrosa	Vulnerable	0.3	0.1	4	42	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0372	Litsea firma	Vulnerable	0.05	0.0	3	189	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0373	Ficus aurata	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0374	Bauhinia semibifida var. semibifida	Vulnerable	Climber	#VALUE!	-	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0375	Oncosperma tigillaria	Vulnerable	0.4	0.1	3	24	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0376	Ixonanthes reticulata	Common	1.7	0.5	12	22	1) Good health 2) No significant defects 3) Root flare obvious 4) Co-dominant low bifurcation 5) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0377	Ixonanthes reticulata	Common	1.2	0.4	12	31	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0378	Ixonanthes reticulata	Common	2	0.6	16	25	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0379	Bauhinia semibifida var. semibifida	Vulnerable	Climber	#VALUE!	-	#VALUE!	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0380	Ixonanthes reticulata	Common	1	0.3	12	38	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0381	Guioa cf bijuga	Critically endangered	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0382	Guioa cf bijuga	Critically endangered	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0383	Timonius wallichianus	Common	1.05	0.3	8	24	1) Good health 2) No significant defects 3) Multiple attachment	Remove	Directly affected by proposed development
TR0384	Ixonanthes reticulata	Common	3.5	1.1	16	14	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0385	Oncosperma tigillaria	Vulnerable	0.5	0.2	4	25	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0386	Ixonanthes reticulata	Common	2.4	0.8	16	21	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0387	Litsea firma	Vulnerable	0.05	0.0	1.8	113	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0388	Hevea brasiliensis	Exotic	1.8	0.6	8	14	1) Good health 2) Decay on branch & failed trunk	Remove	Directly affected by proposed development
TR0389	Ixonanthes reticulata	Common	1.3	0.4	16	39	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0390	Oncosperma tigillaria	Vulnerable	0.6	0.2	4	21	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0391	Macaranga recurvata	Critically endangered	0.85	0.3	8	30	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0392	Ixonanthes reticulata	Common	1.8	0.6	18	31	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0393	Ixonanthes reticulata	Common	2.25	0.7	16	22	1) Good health 2) Decay at tree base facing NE	Remove	Directly affected by proposed development
TR0394	Syzygium palembanicum	Vulnerable	0.05	0.0	4	251	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0395	Litsea firma	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0396	Ixonanthes reticulata	Common	1.4	0.4	18	40	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0397	Ixonanthes reticulata	Common	2.9	0.9	18	20	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0398	Ixonanthes reticulata	Common	1	0.3	16	50	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0399	Syzygium palembanicum	Vulnerable	0.05	0.0	2	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0400	Endospermum diadenum	Vulnerable	1.5	0.5	14	29	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0401	Cyrtophyllum fragrans	Common	1.6	0.5	16	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0402	Ixonanthes reticulata	Common	2.3	0.7	18	25	1) Good health 2) No significant defects	Remove	Directly affected by proposed development

TR0403	Macaranga recurvata	Critically endangered	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0404	Hevea brasiliensis	Exotic	1	0.3	16	50	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0405	Hevea brasiliensis	Exotic	1.2	0.4	6	16	1) Poor health 2) Decay on trunk & branches	Remove	Directly affected by proposed development
TR0406	Lindera lucida	Vulnerable	0.2	0.1	6	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0407	Hornstedtia scyphifera var. scyphifera	Vulnerable	0.05	0.0	1.7	107	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0408	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0409	Litsea firma	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0410	Oncosperma tigillaria	Vulnerable	0.8	0.3	5	20	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0411	Ixonanthes reticulata	Common	2.4	0.8	18	24	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0412	Ixonanthes reticulata	Common	3.1	1.0	18	18	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0413	Syzygium palembanicum	Vulnerable	0.05	0.0	3	189	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0414	Cyrtophyllum fragrans	Common	2.1	0.7	8	12	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0415	Cyrtophyllum fragrans	Common	1.7	0.5	9	17	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0416	Adinandra dumosa	Common	1	0.3	14	44	1) Good health 2) No significant defects 3) Multiple attachment	Remove	Directly affected by proposed development
TR0417	Lindera lucida	Vulnerable	0.2	0.1	5	79	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0418	Cyrtophyllum fragrans	Common	4	1.3	20	16	1) Good health 2) No significant defects 3) Co-dominant trunk	Remove	Directly affected by proposed development
TR0419	Santiria laevigata	Vulnerable	0.01	0.0	1	314	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0420	Lindera lucida	Vulnerable	0.5	0.2	10	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0421	Lindera lucida	Vulnerable	0.1	0.0	5	157	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0422	Ficus aurata	Vulnerable	0.05	0.0	1.5	94	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0423	Macaranga gigantea	Common	1.3	0.4	16	39	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0424	Lindera lucida	Vulnerable	0.4	0.1	6	47	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0425	Lindera lucida	Vulnerable	0.1	0.0	5	157	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0426	Ixonanthes reticulata	Common	1.35	0.4	16	37	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0427	Macaranga gigantea	Common	1.15	0.4	14	38	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0428	Cyrtophyllum fragrans	Common	2.3	0.7	18	25	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0429	Hevea brasiliensis	Exotic	1.85	0.6	18	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0430	Litsea firma	Vulnerable	0.05	0.0	1.7	107	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0431	Cyrtophyllum fragrans	Common	3.2	1.0	18	18	1) Good health 2) No significant defects 3) Cluster x5	Remove	Directly affected by proposed development
TR0432	Falcataria moluccana	Exotic	2.1	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0433	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0434	Macaranga hullettii	Critically endangered	0.2	0.1	4	63	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0435	Macaranga gigantea	Common	1.5	0.5	9	19	1) Good health 2) No significant defects 3) Multiple attachments	Remove	Directly affected by proposed development
TR0436	Macaranga gigantea	Common	1.1	0.4	9	26	1) Good health 2) No significant defects 3) Multiple attachments	Remove	Directly affected by proposed development
TR0437	Mallotus paniculatus	Common	1.6	0.5	9	18	1) Good health 2) No significant defects 3) Multiple attachments 4) Growing on slope	Remove	Directly affected by proposed development
TR0438	Macaranga gigantea	Common	2	0.6	8	13	1) Good health 2) No significant defects 3) Multiple attachments 4) Growing on slope	Remove	Directly affected by proposed development
TR0439	Macaranga gigantea	Common	1.8	0.6	8	14	1) Good health 2) No significant defects 3) Multiple attachments	Remove	Directly affected by proposed development
TR0440	Mallotus paniculatus	Common	1.2	0.4	8	21	1) Good health 2) No significant defects 3) Multiple attachments 4) Asymmetric canopy	Remove	Directly affected by proposed development
TR0441	Macaranga heynei	Common	1.5	0.5	8	17	1) Good health 2) No significant defects 3) Multiple attachments 4) Asymmetric canopy	Remove	Directly affected by proposed development
TR0442	Falcataria moluccana	Exotic	2.1	0.7	16	24	Annex 5	Remove	Directly affected by proposed development

TR0443	Falcataria moluccana	Exotic	1.5	0.5	16	34	Annex 5	Remove	Directly affected by proposed development
TR0444	Falcataria moluccana	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0445	Falcataria moluccana	Exotic	3.5	1.1	18	16	Annex 5	Remove	Directly affected by proposed development
TR0446	Falcataria moluccana	Exotic	1	0.3	16	50	Annex 5	Remove	Directly affected by proposed development
TR0447	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0448	Claoxylon indicum	Common	1.2	0.4	6	16	1) Good health 2) No significant defects 3) Low bifurcation	Remove	Directly affected by proposed development
TR0449	Falcataria moluccana	Exotic	1.3	0.4	22	53	Annex 5	Remove	Directly affected by proposed development
TR0450	Falcataria moluccana	Exotic	1	0.3	16	50	Annex 5	Remove	Directly affected by proposed development
TR0451	Falcataria moluccana	Exotic	1	0.3	22	69	Annex 5	Remove	Directly affected by proposed development
TR0452	Falcataria moluccana	Exotic	1.1	0.4	20	57	Annex 5	Remove	Directly affected by proposed development
TR0453	Falcataria moluccana	Exotic	1.1	0.4	12	34	Annex 5	Remove	Directly affected by proposed development
TR0454	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0455	Falcataria moluccana	Exotic	2.1	0.7	14	21	Annex 5	Remove	Directly affected by proposed development
TR0456	Falcataria moluccana	Exotic	3.5	1.1	22	20	Annex 5	Remove	Directly affected by proposed development
TR0457	Spathodea campanulata	Exotic	1.5	0.5	12	25	Annex 5	Remove	Directly affected by proposed development
TR0458	Falcataria moluccana	Exotic	1.1	0.4	12	34	Annex 5	Remove	Directly affected by proposed development
TR0459	Falcataria moluccana	Exotic	1.4	0.4	18	40	Annex 5	Remove	Directly affected by proposed development
TR0460	Falcataria moluccana	Exotic	3	1.0	22	23	Annex 5	Remove	Directly affected by proposed development
TR0461	Falcataria moluccana	Exotic	2.2	0.7	18	26	Annex 5	Remove	Directly affected by proposed development
TR0462	Falcataria moluccana	Exotic	2	0.6	18	28	Annex 5	Remove	Directly affected by proposed development
TR0463	Falcataria moluccana	Exotic	1	0.3	10	31	Annex 5	Remove	Directly affected by proposed development
TR0464	Falcataria moluccana	Exotic	1.6	0.5	20	39	Annex 5	Remove	Directly affected by proposed development
TR0465	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0466	Falcataria moluccana	Exotic	1.9	0.6	22	36	Annex 5	Remove	Directly affected by proposed development
TR0467	Falcataria moluccana	Exotic	2	0.6	22	35	Annex 5	Remove	Directly affected by proposed development
TR0468	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0469	Falcataria moluccana	Exotic	3	1.0	22	23	Annex 5	Remove	Directly affected by proposed development
TR0470	Falcataria moluccana	Exotic	2.2	0.7	22	31	Annex 5	Remove	Directly affected by proposed development
TR0471	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0472	Falcataria moluccana	Exotic	2.8	0.9	22	25	Annex 5	Remove	Directly affected by proposed development
TR0473	Falcataria moluccana	Exotic	1.6	0.5	20	39	Annex 5	Remove	Directly affected by proposed development
TR0474	Falcataria moluccana	Exotic	2.2	0.7	20	29	Annex 5	Remove	Directly affected by proposed development
TR0475	Falcataria moluccana	Exotic	1.9	0.6	18	30	Annex 5	Remove	Directly affected by proposed development
TR0476	Lindera lucida	Vulnerable	0.1	0.0	4	126	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0477	Cyrtophyllum fragrans	Common	3.5	1.1	20	18	1) Poor health 2) Decay on trunk at H=6.0m 3) Die back at canopy	Remove	Directly affected by proposed development
TR0478	Ficus variegata	Common	1.3	0.4	14	34	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0479	Cocos nucifera	Exotic	1	0.3	10	31	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0480	Mangifera odorata	Vulnerable	1.6	0.5	12	24	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0481	Falcataria moluccana	Exotic	2	0.6	20	31	Annex 5	Remove	Directly affected by proposed development
TR0482	Falcataria moluccana	Exotic	1.5	0.5	22	46	Annex 5	Remove	Directly affected by proposed development

TR0483	Falcataria moluccana	Exotic	2.1	0.7	22	33	Annex 5	Remove	Directly affected by proposed development
TR0484	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0485	Falcataria moluccana	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0486	Falcataria moluccana	Exotic	1.6	0.5	20	39	Annex 5	Remove	Directly affected by proposed development
TR0487	Artocarpus heterophyllus	Exotic	1.1	0.4	6	17	1) Poor health 2) Decay on trunk 3) Die back at canopy	Remove	Directly affected by proposed development
TR0488	Cocos nucifera	Exotic	1.2	0.4	12	31	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0489	Falcataria moluccana	Exotic	3	1.0	20	21	Annex 5	Remove	Directly affected by proposed development
TR0490	Cocos nucifera	Exotic	1.4	0.4	12	27	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0491	Mangifera indica	Exotic	2.2	0.7	9	13	1) Good health 2) No significant defects 3) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0492	Spathodea campanulata	Exotic	1.2	0.4	9	24	Annex 5	Remove	Directly affected by proposed development
TR0493	Samanea saman	Exotic	1.1	0.4	6	17	1) Good health 2) No significant defects 3) Assessment limited by climbers & undergrowth	Remove	Directly affected by proposed development
TR0494	Cecropia pachystachya	Exotic	3	1.0	9	9	1) Good health 2) No significant defects 3) Invasive species	Remove	Directly affected by proposed development
TR0495	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0496	Claoxylon indicum	Common	1.2	0.4	8	21	1) Good health 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers	Remove	Directly affected by proposed development
TR0497	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0498	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0499	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0500	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0501	Falcataria moluccana	Exotic	1	0.3	18	57	Annex 5	Remove	Directly affected by proposed development
TR0502	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0503	Falcataria moluccana	Exotic	1.2+1.2	#VALUE!	20	#VALUE!	Annex 5	Remove	Directly affected by proposed development
TR0504	Falcataria moluccana	Exotic	1.3	0.4	18	44	Annex 5	Remove	Directly affected by proposed development
TR0505	Falcataria moluccana	Exotic	2.2	0.7	20	29	Annex 5	Remove	Directly affected by proposed development
TR0506	Falcataria moluccana	Exotic	1.3	0.4	18	44	Annex 5	Remove	Directly affected by proposed development
TR0507	Falcataria moluccana	Exotic	2.8	0.9	20	22	Annex 5	Remove	Directly affected by proposed development
TR0508	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0509	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0510	Falcataria moluccana	Exotic	1.6	0.5	18	35	Annex 5	Remove	Directly affected by proposed development
TR0511	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0512	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0513	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0514	Falcataria moluccana	Exotic	1	0.3	18	57	Annex 5	Remove	Directly affected by proposed development
TR0515	Cyrtophyllum fragrans	Common	2	0.6	12	19	1) Average health 2) Decay on trunk & branches	Remove	Directly affected by proposed development
TR0516	Cyrtophyllum fragrans	Common	3.6	1.1	15	13	1) Average health 2) Decay on trunk & primary branches possible due to lightning strike 3) Die back at canopy	Remove	Directly affected by proposed development
TR0517	Cyrtophyllum fragrans	Common	1.7	0.5	16	30	1) Good health 2) No significant defects 3) Lean towards W but self-corrected	Remove	Directly affected by proposed development
TR0518	Falcataria moluccana	Exotic	1.4	0.4	18	40	Annex 5	Remove	Directly affected by proposed development
TR0519	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0520	Falcataria moluccana	Exotic	1.2	0.4	10	26	Annex 5	Remove	Directly affected by proposed development
TR0521	Dillenia suffruticosa	Common	1.4	0.4	5	11	1) Good health 2) No significant defects 3) Clusters within proximity	Remove	Directly affected by proposed development
TR0522	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development

TR0523	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0524	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0525	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0526	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0527	Falcataria moluccana	Exotic	1.5	0.5	18	38	Annex 5	Remove	Directly affected by proposed development
TR0528	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0529	Falcataria moluccana	Exotic	1.7	0.5	20	37	Annex 5	Remove	Directly affected by proposed development
TR0530	Falcataria moluccana	Exotic	1.9	0.6	20	33	Annex 5	Remove	Directly affected by proposed development
TR0531	Falcataria moluccana	Exotic	2	0.6	20	31	Annex 5	Remove	Directly affected by proposed development
TR0532	Acacia auriculiformis	Exotic	1.1	0.4	8	23	Annex 5	Remove	Directly affected by proposed development
TR0533	Falcataria moluccana	Exotic	1.4	0.4	20	45	Annex 5	Remove	Directly affected by proposed development
TR0534	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0535	Falcataria moluccana	Exotic	1.6	0.5	20	39	Annex 5	Remove	Directly affected by proposed development
TR0536	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0537	Falcataria moluccana	Exotic	1.5	0.5	20	42	Annex 5	Remove	Directly affected by proposed development
TR0538	Falcataria moluccana	Exotic	1.4	0.4	20	45	Annex 5	Remove	Directly affected by proposed development
TR0539	Falcataria moluccana	Exotic	2.5	0.8	20	25	Annex 5	Remove	Directly affected by proposed development
TR0540	Cyrtophyllum fragrans	Common	1.4	0.4	16	36	1) Good health 2) No significant defects 3) Lean towards SE but self-corrected	Remove	Directly affected by proposed development
TR0541	Falcataria moluccana	Exotic	1	0.3	18	57	Annex 5	Remove	Directly affected by proposed development
TR0542	Cyrtophyllum fragrans	Common	1.3	0.4	18	44	1) Good health 2) Decay on trunk possible due to lightning strike	Remove	Directly affected by proposed development
TR0543	Falcataria moluccana	Exotic	1.6	0.5	20	39	Annex 5	Remove	Directly affected by proposed development
TR0544	Falcataria moluccana	Exotic	1.2	0.4	20	52	Annex 5	Remove	Directly affected by proposed development
TR0545	Acacia auriculiformis	Exotic	1.1	0.4	14	40	Annex 5	Remove	Directly affected by proposed development
TR0546	Falcataria moluccana	Exotic	1.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0547	Falcataria moluccana	Exotic	2	0.6	20	31	Annex 5	Remove	Directly affected by proposed development
TR0548	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0549	Falcataria moluccana	Exotic	1.1	0.4	20	57	Annex 5	Remove	Directly affected by proposed development
TR0550	Falcataria moluccana	Exotic	1	0.3	20	63	Annex 5	Remove	Directly affected by proposed development
TR0551	Falcataria moluccana	Exotic	2	0.6	18	28	Annex 5	Remove	Directly affected by proposed development
TR0552	Falcataria moluccana	Exotic	1.5	0.5	18	38	Annex 5	Remove	Directly affected by proposed development
TR0553	Falcataria moluccana	Exotic	1.4	0.7	18	26	Annex 5	Remove	Directly affected by proposed development
TR0556	Falcataria moluccana	Exotic	2.2	0.4	22	58	Annex 5	Remove	Directly affected by proposed development
TR0557	Acacia auriculiformis	Exotic	1.2	0.4	10	24	Annex 5	Remove	Directly affected by proposed development
TR0558	Dillenia suffruticosa	Common	1.3	0.4	5	12	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0559	Falcataria moluccana	Exotic	1.3	0.4	20	48	Annex 5	Remove	Directly affected by proposed development
TR0560	Falcataria moluccana	Exotic	1.7	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0561	Falcataria moluccana	Exotic	1.2	0.4	18	44	Annex 5	Remove	Directly affected by proposed development
TR0562	Falcataria moluccana	Exotic	1.3	0.7	18	27	Annex 5	Remove	Directly affected by proposed development
TR0563	Falcataria moluccana	Exotic	2.1	0.7	18	27	Annex 5	Remove	Directly affected by proposed development
TR0564	Falcataria moluccana	Exotic	2	0.6	18	28	Annex 5	Remove	Directly affected by proposed development

TR0565	Falcataria moluccana	Exotic	1.5	0.4	18	40	Annex 5	Remove	Directly affected by proposed development
TR0566	Falcataria moluccana	Exotic	1.4	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0567	Falcataria moluccana	Exotic	1.8	0.7	18	27	Annex 5	Remove	Directly affected by proposed development
TR0568	Falcataria moluccana	Exotic	2.1	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0569	Falcataria moluccana	Exotic	1.6	0.5	20	39	Annex 5	Remove	Directly affected by proposed development
TR0570	Falcataria moluccana	Exotic	1.7	0.6	20	31	Annex 5	Remove	Directly affected by proposed development
TR0571	Falcataria moluccana	Exotic	2	#VALUE!	20	#VALUE!	Annex 5	Remove	Directly affected by proposed development
TR0572	Falcataria moluccana	Exotic	1.9+1.9	0.6	18	28	1) Annex 5 2) Cluster x2	Remove	Directly affected by proposed development
TR0573	Falcataria moluccana	Exotic	2	0.6	20	31	Annex 5	Remove	Directly affected by proposed development
TR0574	Falcataria moluccana	Exotic	2.4	0.8	20	26	Annex 5	Remove	Directly affected by proposed development
TR0575	Falcataria moluccana	Exotic	1.8	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0576	Falcataria moluccana	Exotic	2.1	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0577	Falcataria moluccana	Exotic	1.8	0.4	20	52	Annex 5	Remove	Directly affected by proposed development
TR0578	Falcataria moluccana	Exotic	1.2	0.4	18	47	Annex 5	Remove	Directly affected by proposed development
TR0579	Cecropia pachystachya	Exotic	3	1.0	12	13	1) Good health 2) No significant defects 3) Invasive species 4) Cluster within proximity	Remove	Directly affected by proposed development
TR0580	Cecropia pachystachya	Exotic	2.5	0.6	12	21	1) Good health 2) No significant defects 3) Invasive species 4) Cluster within proximity	Remove	Directly affected by proposed development
TR0581	Falcataria moluccana	Exotic	1.8	0.4	22	63	Annex 5	Remove	Directly affected by proposed development
TR0582	Falcataria moluccana	Exotic	1.1	0.6	12	19	Annex 5	Remove	Directly affected by proposed development
TR0583	Falcataria moluccana	Exotic	2	0.6	20	31	Annex 5	Remove	Directly affected by proposed development
TR0584	Falcataria moluccana	Exotic	1.2	0.4	12	31	Annex 5	Remove	Directly affected by proposed development
TR0585	Falcataria moluccana	Exotic	1.9	0.7	20	30	Annex 5	Remove	Directly affected by proposed development
TR0586	Falcataria moluccana	Exotic	2.1	#VALUE!	20	#VALUE!	Annex 5	Remove	Directly affected by proposed development
TR0587	Falcataria moluccana	Exotic	2.4+1.5	0.5	22	43	Annex 5	Remove	Directly affected by proposed development
TR0588	Falcataria moluccana	Exotic	1.6	0.5	12	24	Annex 5	Remove	Directly affected by proposed development
TR0589	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0590	Falcataria moluccana	Exotic	1.5	0.6	22	38	Annex 5	Remove	Directly affected by proposed development
TR0591	Falcataria moluccana	Exotic	1.8	0.4	20	45	Annex 5	Remove	Directly affected by proposed development
TR0592	Falcataria moluccana	Exotic	1.4	0.7	20	29	Annex 5	Remove	Directly affected by proposed development
TR0593	Falcataria moluccana	Exotic	2.2	0.7	20	29	Annex 5	Remove	Directly affected by proposed development
TR0594	Falcataria moluccana	Exotic	1.6	0.5	9	18	Annex 5	Remove	Directly affected by proposed development
TR0595	Falcataria moluccana	Exotic	2.1	#VALUE!	20	#VALUE!	Annex 5	Remove	Directly affected by proposed development
TR0596	Falcataria moluccana	Exotic	2.4+1.2	0.7	20	29	Annex 5	Remove	Directly affected by proposed development
TR0597	Falcataria moluccana	Exotic	2.2	0.6	22	38	Annex 5	Remove	Directly affected by proposed development
TR0598	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0599	Falcataria moluccana	Exotic	1.8	0.6	20	35	Annex 5	Remove	Directly affected by proposed development
TR0600	Falcataria moluccana	Exotic	1.7	0.5	18	38	Annex 5	Remove	Directly affected by proposed development
TR0600A	Falcataria moluccana	Exotic	1.5	#VALUE!	18	#VALUE!	Annex 5	Remove	Directly affected by proposed development
TR0601	Falcataria moluccana	Exotic	2.7+1.8	0.4	20	45	1) Annex 5 2) Cluster x2	Remove	Directly affected by proposed development
TR0602	Acacia auriculiformis	Exotic	1.4	0.4	16	36	Annex 5	Remove	Directly affected by proposed development
TR0603	Acacia auriculiformis	Exotic	1.1	0.4	15	43	Annex 5	Remove	Directly affected by proposed development

TR0604	Spathodea campanulata	Exotic	1.8	0.5	10	20	Annex 5	Remove	Directly affected by proposed development
TR0605	Acacia auriculiformis	Exotic	1.6	1.1	14	13	Annex 5	Remove	Directly affected by proposed development
TR0606	Falcataria moluccana	Exotic	3.4	0.4	20	57	Annex 5	Remove	Directly affected by proposed development
TR0607	Spathodea campanulata	Exotic	1.1	0.4	12	34	Annex 5	Remove	Directly affected by proposed development
TR0608	Spathodea campanulata	Exotic	1.8	0.6	12	21	Annex 5	Remove	Directly affected by proposed development
TR0609	Cecropia pachystachya	Exotic	1.6	0.5	14	28	1) Good health 2) No significant defects 3) Invasive species	Remove	Directly affected by proposed development
TR0610	Acacia auriculiformis	Exotic	1.6	0.7	14	21	Annex 5	Remove	Directly affected by proposed development
TR0611	Spathodea campanulata	Exotic	2.1	0.4	10	26	Annex 5	Remove	Directly affected by proposed development
TR0612	Spathodea campanulata	Exotic	1.2	0.6	10	16	Annex 5	Remove	Directly affected by proposed development
TR0612A	Cecropia pachystachya	Exotic	2	0.6	9	14	1) Good health 2) No significant defects 3) Invasive species	Remove	Directly affected by proposed development
TR0612B	Cecropia pachystachya	Exotic	1.8	0.6	9	16	1) Good health 2) No significant defects 3) Invasive species	Remove	Directly affected by proposed development
TR0612C	Cecropia pachystachya	Exotic	2	0.6	9	14	1) Good health 2) No significant defects 3) Invasive species	Remove	Directly affected by proposed development
TR0613	Acacia auriculiformis	Exotic	2	0.4	10	29	Annex 5	Remove	Directly affected by proposed development
TR0614	Acacia auriculiformis	Exotic	1.1	0.4	12	34	Annex 5	Remove	Directly affected by proposed development
TR0615	Falcataria moluccana	Exotic	2.1	0.7	18	27	Annex 5	Remove	Directly affected by proposed development
TR0616	Falcataria moluccana	Exotic	1.9	0.5	18	33	Annex 5	Remove	Directly affected by proposed development
TR0617	Falcataria moluccana	Exotic	1.7	0.7	9	13	Annex 5	Remove	Directly affected by proposed development
TR0618	Falcataria moluccana	Exotic	2.1	0.4	18	51	Annex 5	Remove	Directly affected by proposed development
TR0619	Falcataria moluccana	Exotic	1.1	0.4	14	40	Annex 5	Remove	Directly affected by proposed development
TR0620	Falcataria moluccana	Exotic	1.2	0.4	8	21	Annex 5	Remove	Directly affected by proposed development
TR0621	Falcataria moluccana	Exotic	2.4	0.8	20	24	Annex 5	Remove	Directly affected by proposed development
TR0622	Falcataria moluccana	Exotic	2.6	0.4	20	48	Annex 5	Remove	Directly affected by proposed development
TR0623	Acacia auriculiformis	Exotic	1.3	0.7	2	3	Annex 5	Remove	Directly affected by proposed development
TR0624	Acacia auriculiformis	Exotic	2.1	0.7	10	15	Annex 5	Remove	Directly affected by proposed development
TR0625	Acacia auriculiformis	Exotic	1.2	0.4	10	26	Annex 5	Remove	Directly affected by proposed development
TR0626	Ficus microcarpa	Common	6m spread	0.4	8	19	1) Good health 2) No significant defects 3) Growing on dead wood stump	Remove	Directly affected by proposed development
TR0627	Andira inermis	Exotic	1.3	0.4	9	22	Annex 5	Remove	Directly affected by proposed development
TR0628	Andira inermis	Exotic	1.3	0.6	8	13	Annex 5	Remove	Directly affected by proposed development
TR0629	Artocarpus heterophyllus	Exotic	1.9	0.6	10	17	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0630	Durio zibethinus	Exotic	2.2	0.7	16	23	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0631	Nephelium lappaceum	Critically endangered (planted)	1.3	0.4	18	44	1) Good health 2) Pocket decay on trunk & branches 3) Root flare obvious	Remove	Directly affected by proposed development
TR0632	Falcataria moluccana	Exotic	1.3	0.4	18	40	Annex 5	Remove	Directly affected by proposed development
TR0633	Nephelium lappaceum	Critically endangered (planted)	1.4	0.4	8	19	1) Good health 2) Pocket decay on branches 3) Root flare obvious	Remove	Directly affected by proposed development
TR0634	Andira inermis	Exotic	1.3	0.4	14	34	Annex 5	Remove	Directly affected by proposed development
TR0635	Macaranga gigantea	Common	1.2	0.4	14	37	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0636	Cyathea latebrosa	Vulnerable	0.3	0.3	4	13	1) Good health 2) No significant defects	Remove	Directly affected by proposed development
TR0637	Alstonia angustiloba	Common	1	0.6	8	13	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0638	Andira inermis	Exotic	2	0.4	16	36	Annex 5	Remove	Directly affected by proposed development
TR0639	Andira inermis	Exotic	1.4	0.4	16	36	Annex 5	Remove	Directly affected by proposed development
TR0640	Andira inermis	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development

TR0641	Andira inermis	Exotic	1.1	0.6	14	24	Annex 5	Remove	Directly affected by proposed development
TR0642	Andira inermis	Exotic	1.8	0.6	18	31	Annex 5	Remove	Directly affected by proposed development
TR0643	Andira inermis	Exotic	1.8	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0644	Andira inermis	Exotic	1.2	0.4	16	42	Annex 5	Remove	Directly affected by proposed development
TR0645	Andira inermis	Exotic	2.8	0.9	16	18	Annex 5	Remove	Directly affected by proposed development
TR0646	Cyrtophyllum fragrans	Common	5	0.4	20	57	1) Good health 2) Decay on trunk facing SW	Remove	Directly affected by proposed development
TR0647	Macaranga gigantea	Common	1.1	0.4	14	40	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0648	Macaranga hypoleuca	Common	1.1	0.4	15	43	1) Good health 2) No significant defects 3) Root flare obvious	Remove	Directly affected by proposed development
TR0649	Acacia auriculiformis	Exotic	1.1	0.4	14	40	Annex 5	Remove	Directly affected by proposed development

Arboriculture Report

Location	1.44963 N 103.779307 E Woodlands HDB	**Tree ID**	M001	**Species**	*Nypa fruticans*
Date	23 05 2018	**Girth (m)**	Cluster	**Height (m)**	8
Spread (radius) (m)	10	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 2m from edge of cluster.

Location	1.449511 N 103.779118 E Woodlands HDB	**Tree ID**	M002	**Species**	*Avicennia rumphiana*
Date	23 05 2018	**Girth (m)**	2.4	**Height (m)**	6
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	8

Observations:
1) Good health and vigor 2) Decay on branches 3) Uprooting pressure observed 4) No target.



Impacts of Construction: d Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
Removal of the tree is recommended independent of proposed construction.

Location	1.449557 N 103.779018 E Woodlands HDB	**Tree ID**	M003	**Species**	*Avicennia rumphiana*
Date	23 05 2018	**Girth (m)**	2.3	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) Cavity on trunk.









Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
Removal of the tree is recommended independent of proposed construction.

Location	1.449506 N 103.779007 E Woodlands HDB	**Tree ID**	M004	**Species**	*Avicennia rumphiana*
Date	23 05 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) Fungal fruiting bodies on trunk suggesting internal decay.









Fuagal fruiting bodies on trunk

Impacts of Construction: Not directly affected by proposed development.

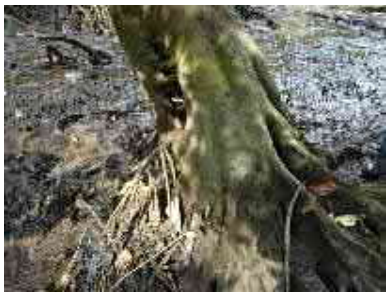
Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations:
Removal of the tree is recommended independent of proposed construction.

Location	1.44948 N 103.778913 E Woodlands HDB	**Tree ID**	M005	**Species**	*Avicennia rumphiana*
Date	23 05 2018	**Girth (m)**	1.8	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Lean towards S 4) Fungal fruiting bodies on trunk suggesting internal decay.









Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.
3. Instrumental assessment with Resistograph is recommended to detect extant of internal decay.

Location	1.449459 N 103.778907 E Woodlands HDB	**Tree ID**	M006	**Species**	*Rhizophora mucronata*
Date	23 05 2018	**Girth (m)**	1.5	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 3m in radius.

Location	1.449412 N 103.779042 E Woodlands HDB	**Tree ID**	M007	**Species**	*Avicennia alba*
Date	23 05 2018	**Girth (m)**	1.6	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.449344 N 103.778757 E Woodlands HDB	**Tree ID**	M008	**Species**	*Avicennia rumphiana*
Date	23 05 2018	**Girth (m)**	1.8	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16

Observations:
1) Good health and vigor 2) Pocket decay on primary branches.






Pocket decay on primary branches

Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.
3. Pocket decay on primary branch considered to be minor defects and does not significantly impair structural stability of the tree.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.449337 N 103.778688 E Woodlands HDB	**Tree ID**	M009	**Species**	*Avicennia officinalis*
Date	23 05 2018	**Girth (m)**	1.85	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.449167 N 103.778955 E Woodlands HDB	**Tree ID**	M010	**Species**	*Lumnitzera littorea*
Date	23 05 2018	**Girth (m)**	0.8	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) Uprooted.







Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations:
Removal of the tree is recommended independent of proposed construction.

Location	1.449061N 103.778873 E Woodlands HDB	**Tree ID**	M011	**Species**	*Heritiera littoralis*
Date	23 05 2018	**Girth (m)**	0.35	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	45

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 2m in radius.

Location	1.449071 N 103.778875 E Woodlands HDB	**Tree ID**	M012	**Species**	*Xylocarpus granatum*
Date	23 05 2018	**Girth (m)**	1.1	**Height (m)**	5
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	14

Observations:
1) Average health and vigor 2) Decay on trunk 3) Dieback at canopy






Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
Removal of the tree is recommended independent of proposed construction.

Location	1.449033 N 103.778936 E Woodlands HDB	**Tree ID**	M013	**Species**	*Avicennia rumphiana*
Date	23 05 2018	**Girth (m)**	1.8	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.445384093 N 103.782001 E Woodlands HDB	**Tree ID**	M014	**Species**	*Cyrtophyllum fragrans*
Date	09 05 2018	**Girth (m)**	2.3	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	25

Observations:
1) Average health and vigor 2) Die back at canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:

To remove the tree.

Location	1.445434077 N 103.7818922 E Woodlands HDB	**Tree ID**	M015	**Species**	*Lindera lucida*
Date	09 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445342841 N 103.78183 E Woodlands HDB	**Tree ID**	M016	**Species**	*Vitex pinnata*
Date	09 05 2018	**Girth (m)**	1.8	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16

Observations:
1) Poor health and vigor 2) Decay on primary branch 3) Low bifurcation.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445390244 N 103.7818125 E Woodlands HDB	**Tree ID**	M017	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	2.2+1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.70+0.60	**Taper (H/D)**	29+33

Observations:
Annex 5, Expendable species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445450101 N 103.781697 E Woodlands HDB	**Tree ID**	M018	**Species**	*Macaranga gigantea*
Date	09 05 2018	**Girth (m)**	1.7	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44539976 N 103.7816848 E Woodlands HDB	**Tree ID**	M019	**Species**	*Pternandra coerulescens*
Date	09 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445281602 N 103.7816465 E Woodlands HDB	**Tree ID**	M020	**Species**	*Acacia auriculiformis*
Date	09 05 2018	**Girth (m)**	1.5	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	21

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445033716 N 103.7816906 E Woodlands HDB	**Tree ID**	M021	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445024711 N 103.7816487 E Woodlands HDB	**Tree ID**	M022	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.8	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	47

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444987283 N 103.7815703 E Woodlands HDB	**Tree ID**	M023	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444966577 N 103.7816159 E Woodlands HDB	**Tree ID**	M024	**Species**	*Syzygium polyanthum*
Date	09 05 2018	**Girth (m)**	0.6	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444852116 N 103.7816425 E Woodlands HDB	**Tree ID**	M025	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	33

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.444953964 N 103.7815484 E Woodlands HDB	**Tree ID**	M026	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.3	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444990015 N 103.7815524 E Woodlands HDB	**Tree ID**	M027	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.45	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	56

Observations:
1) Good health and vigor 2) No significant defects.





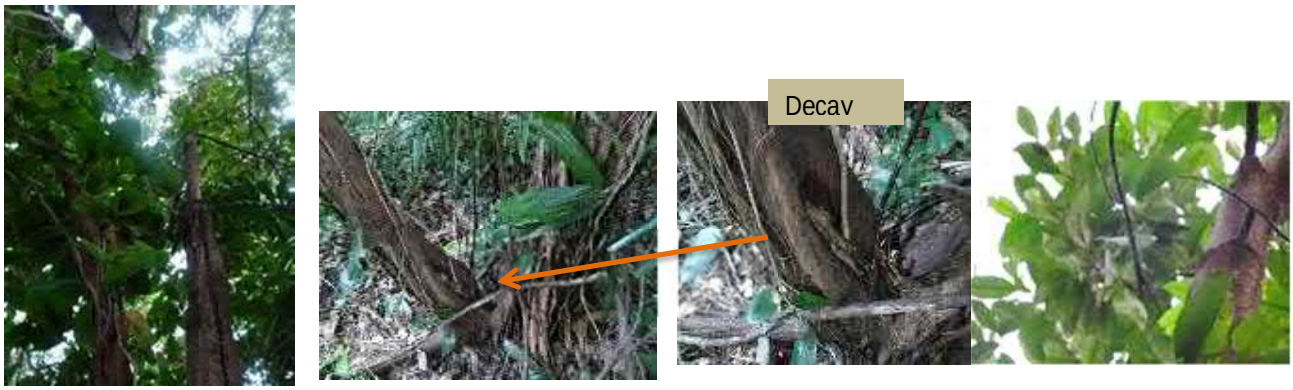
Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44500141 N 103.7815304 E Woodlands HDB	**Tree ID**	M028	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.8+0.3	**Height (m)**	8
Spread (radius) (m)	2+1.5	**DBH (m)**	0.25+0.09	**Taper (H/D)**	31+89

Observations:
1) Good health and vigor 2) Decay at tree base on smaller trunk.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445046537 N 103.7814743 E Woodlands HDB	**Tree ID**	M029	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445057094 N 103.7814591 E Woodlands HDB	**Tree ID**	M030	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	2.4	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	26

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445305557 N 103.7812086 E Woodlands HDB	**Tree ID**	M031	**Species**	*Syzygium polyanthum*
Date	09 05 2018	**Girth (m)**	0.6	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	52

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445431238 N 103.7810582 E Woodlands HDB	**Tree ID**	M032	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	2.8	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	22

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445429459 N 103.7810668 E Woodlands HDB	**Tree ID**	M033	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	1.8	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445436121 N 103.7810456 E Woodlands HDB	**Tree ID**	M034	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445599641 N 103.7808868 E Woodlands HDB	**Tree ID**	M035	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.445658784 N 103.7808685 E Woodlands HDB	**Tree ID**	M036	**Species**	*Spathodea campanulata*
Date	09 05 2018	**Girth (m)**	1.5	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	19

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445645426 N 103.7808259 E Woodlands HDB	**Tree ID**	M037	**Species**	*Ficus benghalensis*
Date	09 05 2018	**Girth (m)**	Cluster	**Height (m)**	10
Spread (radius) (m)	4.0	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445757799 N 103.7807107 E Woodlands HDB	**Tree ID**	M038	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.2	**Height (m)**	1.8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445701851 N 103.7806657 E Woodlands HDB	**Tree ID**	M039	**Species**	*Porterandia anisophylla*
Date	09 05 2018	**Girth (m)**	0.2	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445733097 N 103.7806769 E Woodlands HDB	**Tree ID**	M040	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.01	**Height (m)**	1.5
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	471

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445705822 N 103.7806769 E Woodlands HDB	**Tree ID**	M041	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.4	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445767155 N 103.780687 E Woodlands HDB	**Tree ID**	M042	**Species**	*Cyathea latebrosa*
Date	09 05 2018	**Girth (m)**	0.4	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44597543 N 103.7806522 E Woodlands HDB	**Tree ID**	43	**Species**	*Falcataria moluccana*
Date	09 05 2018	**Girth (m)**	5	**Height (m)**	22
Spread (radius) (m)	6	**DBH (m)**	1.6	**Taper (H/D)**	14
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44598082 N 103.7806423 E Woodlands HDB	**Tree ID**	M044	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.7	**Height (m)**	9
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects 3) Growing beside S0030.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446081723 N 103.7806192 E Woodlands HDB	**Tree ID**	M045	**Species**	*Cerbera odollam*
Date	09 05 2018	**Girth (m)**	1.3	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects 3) Lean towards northwest.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.445740833 N 103.7805499 E Woodlands HDB	**Tree ID**	M046	**Species**	*Oncosperma cf. horridum*
Date	09 05 2018	**Girth (m)**	Cluster	**Height (m)**	8
Spread (radius) (m)	2.0	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445760386 N 103.7806045 E Woodlands HDB	**Tree ID**	M047	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.4	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445632761 N 103.7807672 E Woodlands HDB	**Tree ID**	M048	**Species**	*Lindera lucida*
Date	09 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445616288 N 103.7808041 E Woodlands HDB	**Tree ID**	M049	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445575296 N 103.7808603 E Woodlands HDB	**Tree ID**	M050	**Species**	*Ficus variegata*
Date	09 05 2018	**Girth (m)**	1.9	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	23

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445537306 N 103.7808751 E Woodlands HDB	**Tree ID**	M051	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.4	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445507082 N 103.7808613 E Woodlands HDB	**Tree ID**	M052	**Species**	*Lindera lucida*
Date	09 05 2018	**Girth (m)**	0.1	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445429006 N 103.7809035 E Woodlands HDB	**Tree ID**	M053	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	Cluster	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445388782 N 103.7809046 E Woodlands HDB	**Tree ID**	M054	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.8	**Height (m)**	7
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445366576 N 103.7808903 E Woodlands HDB	**Tree ID**	M055	**Species**	*Lithocarpus cantleyanus*
Date	09 05 2018	**Girth (m)**	0.3	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.445362151 N 103.7808382 E Woodlands HDB	**Tree ID**	M056	**Species**	*Plectocomia elongata*
Date	09 05 2018	**Girth (m)**	Climber	**Height (m)**	NA
Spread (radius) (m)	NA	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445363194 N 103.7809079 E Woodlands HDB	**Tree ID**	M057	**Species**	*Lithocarpus conocarpus*
Date	09 05 2018	**Girth (m)**	0.05	**Height (m)**	1.5
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.445332669 N 103.7809116 E Woodlands HDB	**Tree ID**	M058	**Species**	*Lithocarpus cantleyanus*
Date	09 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.445363044 N 103.7809676 E Woodlands HDB	**Tree ID**	M059	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.9	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x3.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44534524 N 103.7810349 E Woodlands HDB	**Tree ID**	M060	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.6	**Height (m)**	2
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	10

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445285114 N 103.7810526 E Woodlands HDB	**Tree ID**	M061	**Species**	*Plectocomia elongata*
Date	09 05 2018	**Girth (m)**	Climber	**Height (m)**	NA
Spread (radius) (m)	NA	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445235683 N 103.7810503 E Woodlands HDB	**Tree ID**	M062	**Species**	*Hevea brasiliensis*
Date	09 05 2018	**Girth (m)**	1.5	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	29

Observations:
1) Poor health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445249002 N 103.7810856 E Woodlands HDB	**Tree ID**	M063	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.8	**Height (m)**	3
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	12

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445197392 N 103.7811097 E Woodlands HDB	**Tree ID**	M064	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	1	**Height (m)**	7
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445159622 N 103.7812258 E Woodlands HDB	**Tree ID**	M065	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.3	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	52

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445180912 N 103.7812812 E Woodlands HDB	**Tree ID**	M066	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.4	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44500241 N 103.781298 E Woodlands HDB	**Tree ID**	M067	**Species**	*Porterandia anisophylla*
Date	09 05 2018	**Girth (m)**	0.1	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444999666 N 103.7813104 E Woodlands HDB	**Tree ID**	M068	**Species**	*Pouteria obovata*
Date	09 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444986342 N 103.7813218 E Woodlands HDB	**Tree ID**	M069	**Species**	*Porterandia anisophylla*
Date	09 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444958232 N 103.7813039 E Woodlands HDB	**Tree ID**	M070	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.3	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444948297 N 103.7813098 E Woodlands HDB	**Tree ID**	M071	**Species**	*Memecylon paniculatum*
Date	09 05 2018	**Girth (m)**	0.1	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	157

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.444923887 N 103.7813176 E Woodlands HDB	**Tree ID**	M072	**Species**	*Hevea brasiliensis*
Date	09 05 2018	**Girth (m)**	1.55	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	36

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44491817 N 103.7814704 E Woodlands HDB	**Tree ID**	M073	**Species**	*Elaeis guineensis*
Date	09 05 2018	**Girth (m)**	2	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	14

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44486596 N 103.7814492 E Woodlands HDB	**Tree ID**	M074	**Species**	*Memecylon paniculatum*
Date	09 05 2018	**Girth (m)**	0.05	**Height (m)**	1
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.44484576 N 103.7813831 E Woodlands HDB	**Tree ID**	M075	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	0.4	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444845292 N 103.7813835 E Woodlands HDB	**Tree ID**	M076	**Species**	*Elaeis guineensis*
Date	09 05 2018	**Girth (m)**	1.8	**Height (m)**	4
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	7

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.444763135 N 103.781386 E Woodlands HDB	**Tree ID**	M077	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	Cluster	**Height (m)**	10
Spread (radius) (m)	5.0	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444702303 N 103.7814628 E Woodlands HDB	**Tree ID**	M078	**Species**	*Oncosperma horridum*
Date	09 05 2018	**Girth (m)**	1.1	**Height (m)**	7
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444681864 N 103.7814061 E Woodlands HDB	**Tree ID**	M079	**Species**	*Plectocomia elongata*
Date	09 05 2018	**Girth (m)**	Climber	**Height (m)**	NA
Spread (radius) (m)	NA	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444571158 N 103.7814401 E Woodlands HDB	**Tree ID**	M080	**Species**	*Oncosperma tigillaria*
Date	09 05 2018	**Girth (m)**	1.2	**Height (m)**	5
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445018887 N 103.7813449 E Woodlands HDB	**Tree ID**	M081	**Species**	*Porterandia anisophylla*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	1.2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	75

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x7 in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445026924 N 103.7813221 E Woodlands HDB	**Tree ID**	M082	**Species**	*Oncosperma tigillaria*
Date	11 05 2018	**Girth (m)**	1	**Height (m)**	4
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445083495 N 103.7813367 E Woodlands HDB	**Tree ID**	M083	**Species**	*Dillenia suffruticosa*
Date	11 05 2018	**Girth (m)**	1.5	**Height (m)**	6
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) Decay on trunk 3) Multi-trunk 4) On slope.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445232631 N 103.781532 E Woodlands HDB	**Tree ID**	M084	**Species**	*Falcataria moluccana*
Date	11 05 2018	**Girth (m)**	2.4	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.445305887 N 103.78143 E Woodlands HDB	**Tree ID**	M085	**Species**	*Falcataria moluccana*
Date	11 05 2018	**Girth (m)**	3.15	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	20

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445334259 N 103.7814488 E Woodlands HDB	**Tree ID**	M086	**Species**	*Falcataria moluccana*
Date	11 05 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.445390776 N 103.7814625 E Woodlands HDB	**Tree ID**	M087	**Species**	*Falcataria moluccana*
Date	11 05 2018	**Girth (m)**	3.6	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	17
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.445404822 N 103.7814842 E Woodlands HDB	**Tree ID**	M088	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	1.6
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	101

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445382154 N 103.7815431 E Woodlands HDB	**Tree ID**	M089	**Species**	*Ficus aurata*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	1.5
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	471

Observations:
1) Good health and vigor 2) No significant defects.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445594364 N 103.7816292 E Woodlands HDB	**Tree ID**	M090	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	107

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445555524 N 103.7816825 E Woodlands HDB	**Tree ID**	M091	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445547511 N 103.7817078 E Woodlands HDB	**Tree ID**	M092	**Species**	*Ficus aurata*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	1.2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	75

Observations:
1) Good health and vigor 2) No significant defects.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445565066 N 103.7818736 E Woodlands HDB	**Tree ID**	M093	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	16
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	503

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445646248 N 103.7818535 E Woodlands HDB	**Tree ID**	M094	**Species**	*Pouteria obovata*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	1.5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	47

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445659855 N 103.7816018 E Woodlands HDB	**Tree ID**	M095	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	1
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445628129 N 103.7816194 E Woodlands HDB	**Tree ID**	M096	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445670627 N 103.781645 E Woodlands HDB	**Tree ID**	M097	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445661504 N 103.7816501 E Woodlands HDB	**Tree ID**	M098	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	53

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445507904 N 103.7814968 E Woodlands HDB	**Tree ID**	M099	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	1.8
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	113

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445499452 N 103.7814836 E Woodlands HDB	**Tree ID**	M100	**Species**	*Ficus aurata*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	1.9
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	119

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x3 in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44550833 N 103.7814945 E Woodlands HDB	**Tree ID**	M101	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.1-0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.03-0.06	**Taper (H/D)**	167-83

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x3 in proximity.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445473744 N 103.7814167 E Woodlands HDB	**Tree ID**	M102	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x3 in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445516668 N 103.781411 E Woodlands HDB	**Tree ID**	M103	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x3 in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445509746 N 103.7814011 E Woodlands HDB	**Tree ID**	M104	**Species**	*Pouteria obovata*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	3.2
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	1006

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445473732 N 103.78138 E Woodlands HDB	**Tree ID**	M105	**Species**	*Cyrtophyllum fragrans*
Date	11 05 2018	**Girth (m)**	2.5	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	23

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445336027 N 103.7814116 E Woodlands HDB	**Tree ID**	M106	**Species**	*Falcataria moluccana*
Date	11 05 2018	**Girth (m)**	1.7	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	18
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44538198 N 103.7813457 E Woodlands HDB	**Tree ID**	M107	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.5	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445519947 N 103.7813425 E Woodlands HDB	**Tree ID**	M108	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	534

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445550122 N 103.7813624 E Woodlands HDB	**Tree ID**	M109	**Species**	*Cyrtophyllum fragrans*
Date	11 05 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0. 6	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445565451 N 103.7813442 E Woodlands HDB	**Tree ID**	M110	**Species**	*Cyrtophyllum fragrans*
Date	11 05 2018	**Girth (m)**	1.65	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Slight lean to west.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445578658 N 103.7813194 E Woodlands HDB	**Tree ID**	M111	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	629

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44557058 N 103.7813056 E Woodlands HDB	**Tree ID**	M112	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445606548 N 103.7812727 E Woodlands HDB	**Tree ID**	M113	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	1.8
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	566
Observations: 1) Good health and vigor 2) No significant defects 3) Clusters x3 in proximity.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.4455961 N 103.7812851 E Woodlands HDB	**Tree ID**	M114	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	157

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445637177 N 103.7812773 E Woodlands HDB	**Tree ID**	M115	**Species**	*Cyrtophyllum fragrans*
Date	11 05 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445616272 N 103.7812373 E Woodlands HDB	**Tree ID**	M116	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	3.5
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	220

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x3 in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445606308 N 103.7812065 E Woodlands HDB	**Tree ID**	M117	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	534
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445546834 N 103.7812029 E Woodlands HDB	**Tree ID**	M118	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	157
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445612463 N 103.7812039 E Woodlands HDB	**Tree ID**	M119	**Species**	*Hornstedtia scyphifera var. scyphifera*
Date	11 05 2018	**Girth (m)**	Cluster	**Height (m)**	1.5
Spread (radius) (m)	10	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects 3) Cluster.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445639711 N 103.7811909 E Woodlands HDB	**Tree ID**	M120	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445564759 N 103.7811416 E Woodlands HDB	**Tree ID**	M121	**Species**	*Pouteria obovata*
Date	11 05 2018	**Girth (m)**	0.6+0.65	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.19+0.20	**Taper (H/D)**	53+50

Observations:
1) Good health and vigor 2) No significant defects 3) Double trunk 4) Slant towards west girthx2 0.6 0.65.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445646997 N 103.7812725 E Woodlands HDB	**Tree ID**	M122	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	1.6
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	503

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44565207 N 103.781329 E Woodlands HDB	**Tree ID**	M123	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.35	**Height (m)**	10
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	90

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445666215 N 103.7813681 E Woodlands HDB	**Tree ID**	M124	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	1.6
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	101
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445638783 N 103.781411 E Woodlands HDB	**Tree ID**	M125	**Species**	*Ficus aurata*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) Decay on trunk .







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445682162 N 103.7814409 E Woodlands HDB	**Tree ID**	M126	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.05	**Height (m)**	1.6
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	101
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445758382 N 103.7814019 E Woodlands HDB	**Tree ID**	M127	**Species**	*Hevea brasiliensis*
Date	11 05 2018	**Girth (m)**	1.8	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445747925 N 103.7813731 E Woodlands HDB	**Tree ID**	M128	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	629

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445841235 N 103.7813597 E Woodlands HDB	**Tree ID**	M129	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	786

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x3 in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445841229 N 103.7813543 E Woodlands HDB	**Tree ID**	M130	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.2	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	110

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445881932 N 103.7813339 E Woodlands HDB	**Tree ID**	M131	**Species**	*Carallia brachiata*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	1.5
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	471

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.445880646 N 103.7813676 E Woodlands HDB	**Tree ID**	M132	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	534

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445975028 N 103.7813401 E Woodlands HDB	**Tree ID**	M133	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446038869 N 103.7812804 E Woodlands HDB	**Tree ID**	M134	**Species**	*Ficus vasculosa*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.445904462 N 103.7812754 E Woodlands HDB	**Tree ID**	M135	**Species**	*Cyrtophyllum fragrans*
Date	11 05 2018	**Girth (m)**	2.2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	26

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445909149 N 103.7811821 E Woodlands HDB	**Tree ID**	M136	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44583737 N 103.7812099 E Woodlands HDB	**Tree ID**	M137	**Species**	*Lindera lucida*
Date	11 05 2018	**Girth (m)**	0.12	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.04	**Taper (H/D)**	131

Observations:
1) Good health and vigor 2) No significant defects.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445809878 N 103.7812128 E Woodlands HDB	**Tree ID**	M138	**Species**	*Syzygium palembanicum*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445765747 N 103.781238 E Woodlands HDB	**Tree ID**	M139	**Species**	*Litsea firma*
Date	11 05 2018	**Girth (m)**	0.1	**Height (m)**	4.5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	141

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x2 in proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.4457797 N 103.7811351 E Woodlands HDB	**Tree ID**	M140	**Species**	*Ixonanthes reticulata*
Date	11 05 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445781306 N 103.7811425 E Woodlands HDB	**Tree ID**	M141	**Species**	*Cyrtophyllum fragrans*
Date	11 05 2018	**Girth (m)**	3.1	**Height (m)**	18
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446036135 N 103.7811544 E Woodlands HDB	**Tree ID**	M142	**Species**	*Pouteria obovata*
Date	11 05 2018	**Girth (m)**	0.01	**Height (m)**	4.5
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	1414

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446058469 N 103.7811571 E Woodlands HDB	**Tree ID**	M143	**Species**	*Hevea brasiliensis*
Date	11 05 2018	**Girth (m)**	1.95	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	19

Observations:
1) Good health and vigor 2) No significant defects 3) U-shaped bifurcation 4) Termite tracks observed 5) Surface roots extending 3m west of tree.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446171782 N 103.7812115 E Woodlands HDB	**Tree ID**	M144	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446221006 N 103.7812202 E Woodlands HDB	**Tree ID**	M145	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.15	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	84
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446242494 N 103.781213 E Woodlands HDB	**Tree ID**	M146	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.15	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446306646 N 103.7812389 E Woodlands HDB	**Tree ID**	M147	**Species**	*Pternandra coerulescens*
Date	17 05 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446276824 N 103.7811683 E Woodlands HDB	**Tree ID**	M148	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.85	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	20
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446352308 N 103.7811403 E Woodlands HDB	**Tree ID**	M149	**Species**	*Oncosperma tigillaria*
Date	17 05 2018	**Girth (m)**	0.6	**Height (m)**	5
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	26

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446464176 N 103.7811367 E Woodlands HDB	**Tree ID**	M150	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446512413 N 103.781157 E Woodlands HDB	**Tree ID**	M151	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	1.6	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446512617 N 103.781124 E Woodlands HDB	**Tree ID**	M152	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.5	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	23

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers 5) Codominant branch.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446618476 N 103.7811072 E Woodlands HDB	**Tree ID**	M153	**Species**	*Ixonanthes reticulata*
Date	17 05 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446650353 N 103.7810346 E Woodlands HDB	**Tree ID**	M154	**Species**	*Calophyllum tetrapterum*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446435305 N 103.7811734 E Woodlands HDB	**Tree ID**	M155	**Species**	*Macaranga recurvata*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446634387 N 103.781006 E Woodlands HDB	**Tree ID**	M156	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.5	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446538214 N 103.7810388 E Woodlands HDB	**Tree ID**	M157	**Species**	*Syzygium palembanicum*
Date	17 05 2018	**Girth (m)**	1.05	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	45
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.44654606 N 103.7810335 E Woodlands HDB	**Tree ID**	M158	**Species**	*Syzygium palembanicum*
Date	1705 2018	**Girth (m)**	0.9	**Height (m)**	15
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	52
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446477951 N 103.7810541 E Woodlands HDB	**Tree ID**	M159	**Species**	*Syzygium palembanicum*
Date	17 05 2018	**Girth (m)**	0.6	**Height (m)**	9
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	47

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446301414 N 103.7811133 E Woodlands HDB	**Tree ID**	M160	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.8	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects 3) Codominant branch.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44621718 N 103.7811532 E Woodlands HDB	**Tree ID**	M161	**Species**	*Pternandra coerulescens*
Date	17 05 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446087021 N 103.7811511 E Woodlands HDB	**Tree ID**	M162	**Species**	*Hevea brasiliensis*
Date	17 05 2018	**Girth (m)**	2	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	19

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44606342 N 103.781081 E Woodlands HDB	**Tree ID**	M163	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Asymmetric canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445856552 N 103.7812028 E Woodlands HDB	**Tree ID**	M164	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445840918 N 103.7812027 E Woodlands HDB	**Tree ID**	M165	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445807175 N 103.7811668 E Woodlands HDB	**Tree ID**	M166	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.8	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445798861 N 103.7811444 E Woodlands HDB	**Tree ID**	M167	**Species**	*Ixonanthes reticulata*
Date	17 05 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28
Observations: 1) Good health and vigor 2) Girdling roots.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.445774299 N 103.7812316 E Woodlands HDB	**Tree ID**	M168	**Species**	*Litsea firma*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects 3) Clusters.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445827954 N 103.7813309 E Woodlands HDB	**Tree ID**	M169	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.6	**Height (m)**	14
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44578213 N 103.781368 E Woodlands HDB	**Tree ID**	M170	**Species**	*Hevea brasiliensis*
Date	17 05 2018	**Girth (m)**	1.6	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445678735 N 103.78115 E Woodlands HDB	**Tree ID**	M171	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.2	**Height (m)**	16
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	251

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44569792 N 103.7810957 E Woodlands HDB	**Tree ID**	M172	**Species**	*Litsea firma*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445758777 N 103.7810639 E Woodlands HDB	**Tree ID**	M173	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	3	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	21

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445784296 N 103.7810692 E Woodlands HDB	**Tree ID**	M174	**Species**	*Syzygium palembanicum*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.4458202 N 103.7810959 E Woodlands HDB	**Tree ID**	M175	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.1	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	18
Observations: 1) Good health and vigor 2) No significant defects 3) Low bifurcation.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.445915548 N 103.781049 E Woodlands HDB	**Tree ID**	M176	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	4.5	**Height (m)**	22
Spread (radius) (m)	6	**DBH (m)**	1.4	**Taper (H/D)**	15

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445940006 N 103.7810577 E Woodlands HDB	**Tree ID**	M177	**Species**	*Ixonanthes reticulata*
Date	17 05 2018	**Girth (m)**	1.6	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Growing next to S0163.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445952561 N 103.7810202 E Woodlands HDB	**Tree ID**	M178	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	2.4	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446141974 N 103.7809369 E Woodlands HDB	**Tree ID**	M179	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	2.8	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	20
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446172635 N 103.7810449 E Woodlands HDB	**Tree ID**	M180	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446251271 N 103.781013 E Woodlands HDB	**Tree ID**	M181	**Species**	*Alstonia angustiloba*
Date	17 05 2018	**Girth (m)**	1.7	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446340772 N 103.7810268 E Woodlands HDB	**Tree ID**	M182	**Species**	*Litsea firma*
Date	17 05 2018	**Girth (m)**	0.05	**Height (m)**	16
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	1006
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446335708 N 103.7809695 E Woodlands HDB	**Tree ID**	M183	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446402828 N 103.7810053 E Woodlands HDB	**Tree ID**	M184	**Species**	*Pouteria obovata*
Date	17 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446438619 N 103.7810076 E Woodlands HDB	**Tree ID**	M185	**Species**	*Oncosperma tigillaria*
Date	17 05 2018	**Girth (m)**	0.8	**Height (m)**	6
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	24
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446433034 N 103.7810292 E Woodlands HDB	**Tree ID**	M186	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38
Observations: 1) Good health and vigor 2) Large exposed deadwood with decay towards NE.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446704248 N 103.7808709 E Woodlands HDB	**Tree ID**	M187	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446628638 N 103.7807674 E Woodlands HDB	**Tree ID**	M188	**Species**	*Spathodea campanulata*
Date	17 05 2018	**Girth (m)**	1.6	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446768494 N 103.7807128 E Woodlands HDB	**Tree ID**	M189	**Species**	*Cecropia pachystachya*
Date	17 05 2018	**Girth (m)**	1.3	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	19

Observations:
1) Good health and vigor 2) No significant defects 3) Invasive species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446688019 N 103.7806101 E Woodlands HDB	**Tree ID**	M190	**Species**	*Cyrtophyllum fragrans*
Date	17 05 2018	**Girth (m)**	1.8	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17

Observations:
1) Average health and vigor 2) Past canopy failure 3) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446633826 N 103.7805656 E Woodlands HDB	**Tree ID**	M191	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	3	**Height (m)**	22
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	23
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446534392 N 103.780682 E Woodlands HDB	**Tree ID**	M192	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	2	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	19

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446550476 N 103.7808806 E Woodlands HDB	**Tree ID**	M193	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	2.2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446579651 N 103.7808572 E Woodlands HDB	**Tree ID**	M194	**Species**	*Falcataria moluccana*
Date	17 05 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446652509 N 103.7805108 E Woodlands HDB	**Tree ID**	M195	**Species**	*Oncosperma tigillaria*
Date	17 05 2018	**Girth (m)**	0.8	**Height (m)**	5
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446657263 N 103.7804975 E Woodlands HDB	**Tree ID**	M196	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.05	**Height (m)**	1.8
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	113

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446659832 N 103.7804963 E Woodlands HDB	**Tree ID**	M197	**Species**	*Lithocarpus cantleyanus*
Date	17 05 2018	**Girth (m)**	0.05	**Height (m)**	1.5
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446664817 N 103.7805002 E Woodlands HDB	**Tree ID**	M198	**Species**	*Lindera lucida*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446690038 N 103.7804918 E Woodlands HDB	**Tree ID**	M199	**Species**	*Oncosperma tigillaria*
Date	17 05 2018	**Girth (m)**	0.8	**Height (m)**	3
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	12
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446690449 N 103.780482 E Woodlands HDB	**Tree ID**	M200	**Species**	*Cyathea latebrosa*
Date	17 05 2018	**Girth (m)**	0.3	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	21
Observations: 1) Good health and vigor 2) No significant defects 3) Clusters 4) Growing on slope.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446613587 N 103.7804911 E Woodlands HDB	**Tree ID**	M201	**Species**	*Lithocarpus cantleyanus*
Date	17 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446612698 N 103.7804767 E Woodlands HDB	**Tree ID**	M202	**Species**	*Lithocarpus cantleyanus*
Date	17 05 2018	**Girth (m)**	0.2	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446641253 N 103.7804132 E Woodlands HDB	**Tree ID**	M203	**Species**	*Lithocarpus conocarpus*
Date	17 05 2018	**Girth (m)**	0.8	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.446624234 N 103.7804435 E Woodlands HDB	**Tree ID**	M204	**Species**	*Lithocarpus conocarpus*
Date	17 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446616582 N 103.7804614 E Woodlands HDB	**Tree ID**	M205	**Species**	*Lithocarpus cantleyanus*
Date	17 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446552963 N 103.7804812 E Woodlands HDB	**Tree ID**	M206	**Species**	*Lithocarpus conocarpus*
Date	17 05 2018	**Girth (m)**	0.1	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	157

Observations:
1) Good health and vigor 2) Partially fallen.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446531453 N 103.7805021 E Woodlands HDB	**Tree ID**	207	**Species**	*Oncosperma tigillaria*
Date	17 05 2018	**Girth (m)**	0.6	**Height (m)**	5
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	26

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446359612 N 103.7804541 E Woodlands HDB	**Tree ID**	M208	**Species**	*Alstonia angustiloba*
Date	17 05 2018	**Girth (m)**	3.2	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450930129 N 103.7760299 E Woodlands HDB	**Tree ID**	M209	**Species**	*Litsea elliptica*
Date	26 03 2018	**Girth (m)**	1.25	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450822882 N 103.7760262 E Woodlands HDB	**Tree ID**	M210	**Species**	*Litsea elliptica*
Date	26 03 2018	**Girth (m)**	1.1	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	43

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450863715 N 103.7762397 E Woodlands HDB	**Tree ID**	M211	**Species**	*Litsea elliptica*
Date	26 03 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Growing on the edge of slope.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450893033 N 103.776342 E Woodlands HDB	**Tree ID**	M212	**Species**	*Vitex pinnata*
Date	26 03 2018	**Girth (m)**	1.1	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	43

Observations:
1) Good health and vigor 2) No significant defects 3) Growing on slope.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450993662 N 103.7764415 E Woodlands HDB	**Tree ID**	M213	**Species**	*Pouteria obovata*
Date	26 03 2018	**Girth (m)**	1.5	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) Mechanical damage on branch 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450873299 N 103.7770023 E Woodlands HDB	**Tree ID**	M214	**Species**	*Ardisia elliptica*
Date	26 03 2018	**Girth (m)**	0.25	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	75

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.450724994 N 103.7770579 E Woodlands HDB	**Tree ID**	M215	**Species**	*Oncosperma tigillaria*
Date	26 03 2018	**Girth (m)**	5	**Height (m)**	12
Spread (radius) (m)	6	**DBH (m)**	1.6	**Taper (H/D)**	8

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450736022 N 103.7770944 E Woodlands HDB	**Tree ID**	M216	**Species**	*Oncosperma tigillaria*
Date	26 03 2018	**Girth (m)**	3	**Height (m)**	8
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	8

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450609427 N 103.7772323 E Woodlands HDB	**Tree ID**	M217	**Species**	*Pouteria obovata*
Date	26 03 2018	**Girth (m)**	1.2	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	37

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450647119 N 103.7772353 E Woodlands HDB	**Tree ID**	M218	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450621336 N 103.7772648 E Woodlands HDB	**Tree ID**	219	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.5	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	50

Observations:
1) Average health and vigor 2) No significant defects 3) Partial defoliation 4) Asymmetric lean towards northeast.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450614051 N 103.7773578 E Woodlands HDB	**Tree ID**	M220	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450591697 N 103.7772815 E Woodlands HDB	**Tree ID**	M221	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450556171 N 103.7772978 E Woodlands HDB	**Tree ID**	M222	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.5	**Height (m)**	9
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	57

Observations:
1) Good health and vigor 2) No significant defects 3) Low co-dominant branch.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450505635 N 103.7773224 E Woodlands HDB	**Tree ID**	M223	**Species**	*Ixonanthes reticulata*
Date	26 03 2018	**Girth (m)**	1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450524772 N 103.7772179 E Woodlands HDB	**Tree ID**	M224	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.7	**Height (m)**	14
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450501219 N 103.7773127 E Woodlands HDB	**Tree ID**	M225	**Species**	*Morella esculenta*
Date	26 03 2018	**Girth (m)**	1.9	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects 3) Low co-dominant branch.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450553906 N 103.7773433 E Woodlands HDB	**Tree ID**	M226	**Species**	*Pouteria obovata*
Date	26 03 2018	**Girth (m)**	0.4	**Height (m)**	10
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects 3) Growing on slope.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450338732 N 103.7774601 E Woodlands HDB	**Tree ID**	M227	**Species**	*Cyrtophyllum fragrans*
Date	26 03 2018	**Girth (m)**	1.9	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Low co-dominant branch.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450311999 N 103.7774091 E Woodlands HDB	**Tree ID**	M228	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.3	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.45027111 N 103.7773958 E Woodlands HDB	**Tree ID**	M229	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.8	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) Resprouted from fallen tree.					







Resprouted from fallen tree

Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450318969 N 103.7772562 E Woodlands HDB	**Tree ID**	M230	**Species**	*Ixonanthes reticulata*
Date	26 03 2018	**Girth (m)**	1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450233784 N 103.7772267 E Woodlands HDB	**Tree ID**	M231	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.449882154 N 103.7774225 E Woodlands HDB	**Tree ID**	M232	**Species**	*Litsea firma*
Date	26 03 2018	**Girth (m)**	1.65	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Growing on slope.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.449971166 N 103.7774068 E Woodlands HDB	**Tree ID**	M233	**Species**	*Litsea elliptica*
Date	26 03 2018	**Girth (m)**	1.75	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	36

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449843173 N 103.7773131 E Woodlands HDB	**Tree ID**	M234	**Species**	*Falcataria moluccana*
Date	26 03 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449660102 N 103.7772163 E Woodlands HDB	**Tree ID**	M235	**Species**	*Falcataria moluccana*
Date	26 03 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449543734 N 103.7772766 E Woodlands HDB	**Tree ID**	M236	**Species**	*Falcataria moluccana*
Date	26 03 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449506307 N 103.7772313 E Woodlands HDB	**Tree ID**	M237	**Species**	*Falcataria moluccana*
Date	26 03 2018	**Girth (m)**	2.4	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449431002 N 103.7772737 E Woodlands HDB	**Tree ID**	M238	**Species**	*Campnosperma auriculata*
Date	26 03 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: 1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers 4) Growing on slope.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.449589917 N 103.7770327 E Woodlands HDB	**Tree ID**	M239	**Species**	*Falcataria moluccana*
Date	26 03 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449982939 N 103.7770988 E Woodlands HDB	**Tree ID**	M240	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.8	**Height (m)**	15
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	59
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450038993 N 103.7770262 E Woodlands HDB	**Tree ID**	M241	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.85	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	44

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.



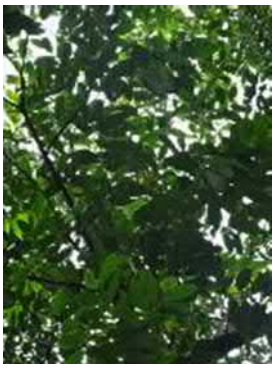



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

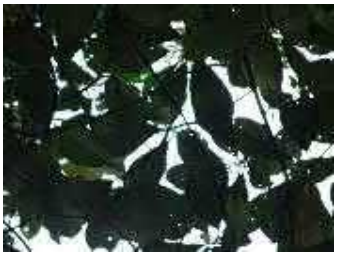
Location	1.450010944 N 103.7769614 E Woodlands HDB	**Tree ID**	M242	**Species**	*Oncosperma tigillaria*
Date	26 03 2018	**Girth (m)**	1.8	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450121443 N 103.7770581 E Woodlands HDB	**Tree ID**	M243	**Species**	*Alstonia angustiloba*
Date	26 03 2018	**Girth (m)**	1.65	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	30
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Lean towards northwest.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450150249 N 103.7771225 E Woodlands HDB	**Tree ID**	M244	**Species**	*Ixonanthes reticulata*
Date	26 03 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450284144 N 103.7771345 E Woodlands HDB	**Tree ID**	M245	**Species**	*Endospermum diadenum*
Date	26 03 2018	**Girth (m)**	1.1	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	57
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450213219 N 103.7769057 E Woodlands HDB	**Tree ID**	M246	**Species**	*Cyrtophyllum fragrans*
Date	26 03 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects 3) Low bifurcation.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450191337 N 103.7767797 E Woodlands HDB	**Tree ID**	M247	**Species**	*Cyrtophyllum fragrans*
Date	26 03 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450153179 N 103.7767997 E Woodlands HDB	**Tree ID**	M248	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.3	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450366191 N 103.7766959 E Woodlands HDB	**Tree ID**	M249	**Species**	*Cyrtophyllum fragrans*
Date	26 03 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) V-shaped bifurcation.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450635862 N 103.7766628 E Woodlands HDB	**Tree ID**	M250	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	0.9	**Height (m)**	15
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	52

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.4506766 N 103.7767027 E Woodlands HDB	**Tree ID**	M251	**Species**	*Lindera lucida*
Date	26 03 2018	**Girth (m)**	1	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450809609 N 103.7767012 E Woodlands HDB	**Tree ID**	M252	**Species**	*Cyrtophyllum fragrans*
Date	26 03 2018	**Girth (m)**	2.6	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachment.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.45082894 N 103.7765578 E Woodlands HDB	**Tree ID**	M253	**Species**	*Cyrtophyllum fragrans*
Date	26 03 2018	**Girth (m)**	1.9	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	26
Observations: 1) Good health and vigor 2) No significant defects 3) Low bifurcation.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.45087315 N 103.776517 E Woodlands HDB	**Tree ID**	M254	**Species**	*Oncosperma tigillaria*
Date	26 03 2018	**Girth (m)**	1.5	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	103.7766056 N 1.450905766 E Woodlands HDB	**Tree ID**	M255	**Species**	*Pouteria obovata*
Date	26 03 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450930699 N 103.7765838 E Woodlands HDB	**Tree ID**	M256	**Species**	*Pouteria obovata*
Date	26 03 2018	**Girth (m)**	0.8	**Height (m)**	15
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	59
Observations: 1) Good health and vigor 2) No significant defects 3) Growing on slope.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.45094417 N 103.7765183 E Woodlands HDB	**Tree ID**	M257	**Species**	*Pouteria obovata*
Date	26 03 2018	**Girth (m)**	1.2	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26
Observations: 1) Good health and vigor) No significant defects 3) Growing on the edge of concrete structure.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450694548 N 103.7765226 E Woodlands HDB	**Tree ID**	M258	**Species**	*Morella esculenta*
Date	26 03 2018	**Girth (m)**	1.5	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450635643 N 103.776558 E Woodlands HDB	**Tree ID**	M259	**Species**	*Pouteria obovata*
Date	26 03 2018	**Girth (m)**	1.2	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450807 N 103.776515 E Woodlands HDB	**Tree ID**	M260	**Species**	*Pouteria obovata*
Date	26 03 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450852 N 103.776233 E Woodlands HDB	**Tree ID**	M261	**Species**	*Macaranga conifera*
Date	26 03 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
1) Good health and vigor 2) No significant defects 3) Growing on slope.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.45077 N 103.776245 E Woodlands HDB	**Tree ID**	M262	**Species**	*Litsea elliptica*
Date	26 03 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450976901 N 103.7766742 E Woodlands HDB	**Tree ID**	M263	**Species**	*Terminalia catappa*
Date	27 03 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450515835 N 103.7770104 E Woodlands HDB	**Tree ID**	M264	**Species**	*Lindera lucida*
Date	27 03 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450363988 N 103.7770145 E Woodlands HDB	**Tree ID**	M265	**Species**	*Lindera lucida*
Date	27 03 2018	**Girth (m)**	0.2	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.451122452 N 103.7774549 E Woodlands HDB	**Tree ID**	M266	**Species**	*Casuarina equisetifolia*
Date	27 03 2018	**Girth (m)**	2.55	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	25
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.4512028 N 103.7776429 E Woodlands HDB	**Tree ID**	M267	**Species**	*Casuarina equisetifolia*
Date	27 03 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450964959 N 103.7771976 E Woodlands HDB	**Tree ID**	M268	**Species**	*Casuarina equisetifolia*
Date	27 03 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450851164 N 103.777481 E Woodlands HDB	**Tree ID**	M269	**Species**	*Falcataria moluccana*
Date	27 03 2018	**Girth (m)**	1.8	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.45084376 N 103.7775067 E Woodlands HDB	**Tree ID**	M270	**Species**	*Falcataria moluccana*
Date	27 03 2018	**Girth (m)**	1.5	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	46
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450994464 N 103.7775701 E Woodlands HDB	**Tree ID**	M271	**Species**	*Elaeis guineensis*
Date	27 03 2018	**Girth (m)**	2	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450865821 N 103.7777002 E Woodlands HDB	**Tree ID**	M272	**Species**	*Falcataria moluccana*
Date	27 03 2018	**Girth (m)**	2.7	**Height (m)**	22
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.451003139 N 103.7777565 E Woodlands HDB	**Tree ID**	M273	**Species**	*Ficus variegata*
Date	27 03 2018	**Girth (m)**	1.5	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) Decay on trunk at 6.0m of height facing to north.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.451042795 N 103.77775 E Woodlands HDB	**Tree ID**	M274	**Species**	*Artocarpus heterophyllus*
Date	27 03 2018	**Girth (m)**	2	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16

Observations:
1) Good health and vigor2) No significant defects 3) Low main bifurcation with co-dominant branches.







Low main bifurcation with co-dominant branches

Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.450966441 N 103.7778151 E Woodlands HDB	**Tree ID**	M275	**Species**	*Casuarina equisetifolia*
Date	27 03 2018	**Girth (m)**	1.5	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	46
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.451164385 N 103.7778902 E Woodlands HDB	**Tree ID**	M276	**Species**	*Elaeis guineensis*
Date	27 03 2018	**Girth (m)**	1.8	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.451308207 N 103.7779416 E Woodlands HDB	**Tree ID**	M277	**Species**	*Elaeis guineensis*
Date	27 03 2018	**Girth (m)**	2.5	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	11
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.451277846 N 103.777942 E Woodlands HDB	**Tree ID**	M278	**Species**	*Elaeis guineensis*
Date	27 03 2018	**Girth (m)**	2.5	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	11
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.451265589 N 103.7780395 E Woodlands HDB	**Tree ID**	M279	**Species**	*Elaeis guineensis*
Date	27 03 2018	**Girth (m)**	2	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	14
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.451281744 N 103.7780395 E Woodlands HDB	**Tree ID**	M280	**Species**	*Pouteria obovata*
Date	27 03 2018	**Girth (m)**	0.6	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	52
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.451266881 N 103.7779953 E Woodlands HDB	**Tree ID**	M281	**Species**	*Pouteria obovata*
Date	27 03 2018	**Girth (m)**	0.3	**Height (m)**	10
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	105
Observations: 1) Good health and vigor 2) Mechanical damages on trunk.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.451253994 N 103.778119 E Woodlands HDB	**Tree ID**	M282	**Species**	*Litsea firma*
Date	27 03 2018	**Girth (m)**	0.35	**Height (m)**	9
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	81

Observations:
1) Good health and vigor 2) No significant defects 3) Growing on slope 4) Covered by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.451197001 N 103.7780573 E Woodlands HDB	**Tree ID**	M283	**Species**	*Elaeis guineensis*
Date	27 03 2018	**Girth (m)**	2	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	14
Observations: 1) Good health and vigor 2) No significant defects 3) Self-corrected lean.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.451143482 N 103.7779965 E Woodlands HDB	**Tree ID**	M284	**Species**	*Intsia bijuga*
Date	27 03 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.451052423 N 103.7779193 E Woodlands HDB	**Tree ID**	M285	**Species**	*Avicennia rumphiana*
Date	27 03 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) Possible cavity on trunk at 3.0m of height.



Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 3m in radius.

Location	1.450930573 N 103.7778383 E Woodlands HDB	**Tree ID**	M286	**Species**	*Heritiera littoralis*
Date	27 03 2018	**Girth (m)**	0.3	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Endangered (Planted).

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 2m in radius.

Location	1.450797317 N 103.7778518 E Woodlands HDB	**Tree ID**	M287	**Species**	*Nypa fruticans*
Date	27 03 2018	**Girth (m)**	Cluster	**Height (m)**	7
Spread (radius) (m)	10	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects 3) Cluster x3 clusters.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 3m from edge of cluster.

Location	1.450817962 N 103.7777524 E Woodlands HDB	**Tree ID**	M288	**Species**	*Barringtonia racemosa*
Date	27 03 2018	**Girth (m)**	0.3	**Height (m)**	3.5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	37
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.450799373 N 103.7775459 E Woodlands HDB	**Tree ID**	M289	**Species**	*Avicennia rumphiana*
Date	27 03 2018	**Girth (m)**	1.6	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) Severe cavity on tree.









Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
Removal of the tree is recommended independent of proposed construction.

Location	1.450614259 N 103.7776594 E Woodlands HDB	**Tree ID**	M290	**Species**	*Heritiera littoralis*
Date	27 03 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Endangered (Planted).

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 2m in radius.

Location	1.450625436 N 103.7776693 E Woodlands HDB	**Tree ID**	M291	**Species**	*Pouteria obovata*
Date	27 03 2018	**Girth (m)**	0.7	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	54

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.45073196 N 103.7777806 E Woodlands HDB	**Tree ID**	M292	**Species**	*Dolichandrone spathacea*
Date	27 03 2018	**Girth (m)**	0.3	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.451249118 N 103.7783025 E Woodlands HDB	**Tree ID**	M293	**Species**	*Falcataria moluccana*
Date	27 03 2018	**Girth (m)**	0.2	**Height (m)**	20
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	314

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.451019664 N 103.7781203 E Woodlands HDB	**Tree ID**	M294	**Species**	*Falcataria moluccana*
Date	27 03 2018	**Girth (m)**	1.7	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	37

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.450977563 N 103.7781117 E Woodlands HDB	**Tree ID**	M295	**Species**	*Falcataria moluccana*
Date	27 03 2018	**Girth (m)**	2.4	**Height (m)**	25
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	33
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450843802 N 103.7782891 E Woodlands HDB	**Tree ID**	M296	**Species**	*Falcataria moluccana*
Date	27 03 2018	**Girth (m)**	3	**Height (m)**	25
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.451004095 N 103.7783573 E Woodlands HDB	**Tree ID**	M297	**Species**	*Casuarina equisetifolia*
Date	27 03 2018	**Girth (m)**	1.65	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450765481 N 103.7779422 E Woodlands HDB	**Tree ID**	M298	**Species**	*Falcataria moluccana*
Date	27 03 2018	**Girth (m)**	2.5	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	25
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450629579 N 103.7779723 E Woodlands HDB	**Tree ID**	M299	**Species**	*Calophyllum inophyllum*
Date	27 03 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.450623844 N 103.7780292 E Woodlands HDB	**Tree ID**	M300	**Species**	*Casuarina equisetifolia*
Date	27 03 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450643732 N 103.7781075 E Woodlands HDB	**Tree ID**	M301	**Species**	*Casuarina equisetifolia*
Date	27 03 2018	**Girth (m)**	2.1	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450685045 N 103.7780951 E Woodlands HDB	**Tree ID**	M302	**Species**	*Casuarina equisetifolia*
Date	27 03 2018	**Girth (m)**	1.7	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	41

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450423219 N 103.7781103 E Woodlands HDB	**Tree ID**	M303	**Species**	*Lindera lucida*
Date	27 03 2018	**Girth (m)**	1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450390372 N 103.7780988 E Woodlands HDB	**Tree ID**	M304	**Species**	*Lindera lucida*
Date	27 03 2018	**Girth (m)**	0.3	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	84

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450532899 N 103.777887 E Woodlands HDB	**Tree ID**	M305	**Species**	*Casuarina equisetifolia*
Date	28 03 2018	**Girth (m)**	2.05	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Lean towards southeast.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450608518 N 103.7778039 E Woodlands HDB	**Tree ID**	M306	**Species**	*Acacia auriculiformis*
Date	28 03 2018	**Girth (m)**	1.95	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	29
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450622817 N 103.7777566 E Woodlands HDB	**Tree ID**	M307	**Species**	*Acacia auriculiformis*
Date	28 03 2018	**Girth (m)**	2.5	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	25
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450634529 N 103.7777165 E Woodlands HDB	**Tree ID**	M308	**Species**	*Pouteria obovata*
Date	28 03 2018	**Girth (m)**	0.3	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	84
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450627386 N 103.7776716 E Woodlands HDB	**Tree ID**	M309	**Species**	*Pouteria obovata*
Date	28 03 2018	**Girth (m)**	0.7	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	45
Observations: 1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450493907 N 103.7777131 E Woodlands HDB	**Tree ID**	M310	**Species**	*Falcataria moluccana*
Date	28 03 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450506253 N 103.7777495 E Woodlands HDB	**Tree ID**	M311	**Species**	*Peltophorum pterocarpum*
Date	28 03 2018	**Girth (m)**	1.6	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by epiphytes 5) Low bifurcation.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.450362871 N 103.7778513 E Woodlands HDB	**Tree ID**	M312	**Species**	*Casuarina equisetifolia*
Date	28 03 2018	**Girth (m)**	2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
1) Good health and vigor 2) Past primary branch failure at 6.0m of height 3) Root flare obvious.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450100773 N 103.7779632 E Woodlands HDB	**Tree ID**	M313	**Species**	*Syzygium polyanthum*
Date	28 03 2018	**Girth (m)**	0.5	**Height (m)**	9
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	57

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.45005868 N 103.7776086 E Woodlands HDB	**Tree ID**	M314	**Species**	*Avicennia rumphiana*
Date	28 03 2018	**Girth (m)**	1.75	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	32

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric lean towards north.






Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.449756671 N 103.7775494 E Woodlands HDB	**Tree ID**	M315	**Species**	*Lindera lucida*
Date	28 03 2018	**Girth (m)**	0.45	**Height (m)**	10
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	70

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.449746088 N 103.777531 E Woodlands HDB	**Tree ID**	M316	**Species**	*Litsea firma*
Date	28 03 2018	**Girth (m)**	0.85	**Height (m)**	20
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	74

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.449538411 N 103.7774456 E Woodlands HDB	**Tree ID**	M317	**Species**	*Acacia auriculiformis*
Date	28 03 2018	**Girth (m)**	1.65	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	38

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449488786 N 103.7774429 E Woodlands HDB	**Tree ID**	M318	**Species**	*Ixonanthes reticulata*
Date	28 03 2018	**Girth (m)**	1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449416199 N 103.7774109 E Woodlands HDB	**Tree ID**	M319	**Species**	*Pouteria obovata*
Date	28 03 2018	**Girth (m)**	0.6	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	52

Observations:
1) Good health and vigor 2) No significant defects 3) Self-corrected lean.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.449351598 N 103.777398 E Woodlands HDB	**Tree ID**	M320	**Species**	*Litsea firma*
Date	28 03 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450914585 N 103.7794056 E Woodlands HDB	**Tree ID**	M321	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34
Observations: 1) Good health and vigor 2) Decay on one buttress root 3) Root flare obvious.					



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.45081566 N 103.7794782 E Woodlands HDB	**Tree ID**	M322	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	3.2	**Height (m)**	18
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.45080303 N 103.7792985 E Woodlands HDB	**Tree ID**	M323	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	2.05	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450920412 N 103.7793492 E Woodlands HDB	**Tree ID**	M324	**Species**	*Vitex pinnata*
Date	02 04 2018	**Girth (m)**	1.55	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450866138 N 103.7792726 E Woodlands HDB	**Tree ID**	M325	**Species**	*Oncosperma tigillaria*
Date	02 04 2018	**Girth (m)**	1	**Height (m)**	7
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450770874 N 103.7792535 E Woodlands HDB	**Tree ID**	M326	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450851948 N 103.7792089 E Woodlands HDB	**Tree ID**	M327	**Species**	*Syzygium polyanthum*
Date	02 04 2018	**Girth (m)**	0.45	**Height (m)**	10
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	70

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450601729 N 103.7791845 E Woodlands HDB	**Tree ID**	M328	**Species**	*Lindera lucida*
Date	02 04 2018	**Girth (m)**	0.75	**Height (m)**	16
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	67

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450660804 N 103.77916 E Woodlands HDB	**Tree ID**	M329	**Species**	*Lindera lucida*
Date	02 04 2018	**Girth (m)**	0.8	**Height (m)**	16
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	63

Observations:
1) Average health and vigor 2) No significant defects 3) Canopy covered by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450558836 N 103.7791981 E Woodlands HDB	**Tree ID**	M330	**Species**	*Lindera lucida*
Date	02 04 2018	**Girth (m)**	0.6	**Height (m)**	15
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450562001 N 103.7791658 E Woodlands HDB	**Tree ID**	M331	**Species**	*Lindera lucida*
Date	02 04 2018	**Girth (m)**	0.45	**Height (m)**	10
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	70

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450546709 N 103.779058 E Woodlands HDB	**Tree ID**	M332	**Species**	*Elaeis guineensis*
Date	02 04 2018	**Girth (m)**	2	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.450583662 N 103.7790505 E Woodlands HDB	**Tree ID**	M333	**Species**	*Lindera lucida*
Date	02 04 2018	**Girth (m)**	0.3	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	52

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450677582 N 103.7790039 E Woodlands HDB	**Tree ID**	M334	**Species**	*Syzygium polyanthum*
Date	02 04 2018	**Girth (m)**	0.8	**Height (m)**	14
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	55

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450415768 N 103.7788701 E Woodlands HDB	**Tree ID**	M335	**Species**	*Lindera lucida*
Date	02 04 2018	**Girth (m)**	0.6	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.450396277 N 103.7787531 E Woodlands HDB	**Tree ID**	M336	**Species**	*Adenanthera pavonina*
Date	02 04 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.450305375 N 103.7788483 E Woodlands HDB	**Tree ID**	M337	**Species**	*Acacia auriculiformis*
Date	02 04 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450284703 N 103.7788776 E Woodlands HDB	**Tree ID**	M338	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450325423 N 103.7791561 E Woodlands HDB	**Tree ID**	M339	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	1.8	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450359213 N 103.7791607 E Woodlands HDB	**Tree ID**	M340	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450424081 N 103.7791272 E Woodlands HDB	**Tree ID**	M341	**Species**	*Acacia auriculiformis*
Date	02 04 2018	**Girth (m)**	1.6	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	29
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.450078088 N 103.7785629 E Woodlands HDB	**Tree ID**	M342	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	1.85	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449970643 N 103.778322 E Woodlands HDB	**Tree ID**	M343	**Species**	*Terminalia catappa*
Date	02 04 2018	**Girth (m)**	1.8	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Low bifurcations.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449808759 N 103.7782777 E Woodlands HDB	**Tree ID**	M344	**Species**	*Lindera lucida*
Date	02 04 2018	**Girth (m)**	0.1	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.449782064 N 103.7784363 E Woodlands HDB	**Tree ID**	M345	**Species**	*Acacia auriculiformis*
Date	02 04 2018	**Girth (m)**	3	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	19
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449687048 N 103.7781942 E Woodlands HDB	**Tree ID**	M346	**Species**	*Talipariti tiliaceum*
Date	02 04 2018	**Girth (m)**	1.8	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	21

Observations:

1) Good health and vigor 2) Decay at tree base 3) Lean towards northwest.









Impacts of Construction: Directly affected by proposed development.

Assessment:

1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449660775 N 103.7781473 E Woodlands HDB	**Tree ID**	M347	**Species**	*Talipariti tiliaceum*
Date	02 04 2018	**Girth (m)**	2.8	**Height (m)**	12
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects 3) Growing on slope 4) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449794543 N 103.7782073 E Woodlands HDB	**Tree ID**	M348	**Species**	*Endospermum diadenum*
Date	02 04 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.449839333 N 103.778211 E Woodlands HDB	**Tree ID**	M349	**Species**	*Premna serratifolia*
Date	02 04 2018	**Girth (m)**	0.4	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	39
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450082891 N 103.7794181 E Woodlands HDB	**Tree ID**	M350	**Species**	*Oncosperma tigillaria*
Date	02 04 2018	**Girth (m)**	0.4	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450597285 N 103.7794103 E Woodlands HDB	**Tree ID**	M351	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	2.45	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	23

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450310221 N 103.779229 E Woodlands HDB	**Tree ID**	M352	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	2.6	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450229383 N 103.7791272 E Woodlands HDB	**Tree ID**	M353	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	2.9	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.450245148 N 103.7789032 E Woodlands HDB	**Tree ID**	M354	**Species**	*Casuarina equisetifolia*
Date	02 04 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.45019026 N 103.7789116 E Woodlands HDB	**Tree ID**	M355	**Species**	*Calophyllum lanigerum*
Date	02 04 2018	**Girth (m)**	0.15	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	84

Observations:
1) Good health and vigor 2) No significant defects 3) Lean towards north.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.448991571 N 103.7781994 E Woodlands HDB	**Tree ID**	M356	**Species**	*Ficus microcarpa*
Date	03 04 2018	**Girth (m)**	2.7	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) Decay on host plant.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449053156 N 103.7781399 E Woodlands HDB	**Tree ID**	M357	**Species**	*Pentace cf. triptera*
Date	03 04 2018	**Girth (m)**	0.25	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.449050202 N 103.7781261 E Woodlands HDB	**Tree ID**	M358	**Species**	*Palaquium obovatum*
Date	03 04 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.449027398 N 103.7781051 E Woodlands HDB	**Tree ID**	M359	**Species**	*Heritiera littoralis*
Date	03 04 2018	**Girth (m)**	0.1	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Endangered (Planted).

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 2m in radius.

Location	1.449070663 N 103.7780827 E Woodlands HDB	**Tree ID**	M360	**Species**	*Calophyllum cf. lanigerum*
Date	03 04 2018	**Girth (m)**	0.15	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	84

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.44907786 N 103.7780881 E Woodlands HDB	**Tree ID**	M361	**Species**	*Pentace cf. triptera*
Date	03 04 2018	**Girth (m)**	0.3	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.449090167 N 103.778122 E Woodlands HDB	**Tree ID**	M362	**Species**	*Pentace cf. triptera*
Date	03 04 2018	**Girth (m)**	0.15	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	84

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.449123265 N 103.7781335 E Woodlands HDB	**Tree ID**	M363	**Species**	*Palaquium obovatum*
Date	03 04 2018	**Girth (m)**	0.15	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.449252209 N 103.7781258 E Woodlands HDB	**Tree ID**	M364	**Species**	*Samanea saman*
Date	03 04 2018	**Girth (m)**	1.55	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by epiphytes 5) Asymmetric canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449189171 N 103.7780689 E Woodlands HDB	**Tree ID**	M365	**Species**	*Samanea saman*
Date	03 04 2018	**Girth (m)**	1.5	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) Decay on primary branch 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448812896 N 103.7781065 E Woodlands HDB	**Tree ID**	M366	**Species**	*Samanea saman*
Date	03 04 2018	**Girth (m)**	1.75	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) U-shaped bifurcation.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448794736 N 103.7780924 E Woodlands HDB	**Tree ID**	M367	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448871862 N 103.7779785 E Woodlands HDB	**Tree ID**	M368	**Species**	*Ficus microcarpa*
Date	03 04 2018	**Girth (m)**	Cluster	**Height (m)**	18
Spread (radius) (m)	8.0	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448692253 N 103.7780583 E Woodlands HDB	**Tree ID**	M369	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448677484 N 103.7780804 E Woodlands HDB	**Tree ID**	M370	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	0.3	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	84
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448679686 N 103.7780401E Woodlands HDB	**Tree ID**	M371	**Species**	*Litsea firma*
Date	03 04 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448800288 N 103.7779073 E Woodlands HDB	**Tree ID**	M372	**Species**	*Ficus microcarpa*
Date	03 04 2018	**Girth (m)**	2.4	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	24
Observations: 1) Good health and vigor 2) Host plant dead.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.448796922 N 103.777939 E Woodlands HDB	**Tree ID**	M373	**Species**	*Syzygium polyanthum*
Date	03 04 2018	**Girth (m)**	0.35	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	72

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448667167 N 103.7779511 E Woodlands HDB	**Tree ID**	M374	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	1.15	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) No significant defects 3) Lean towards north 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448516233 N 103.7778778 E Woodlands HDB	**Tree ID**	M375	**Species**	*Vitex pinnata*
Date	03 04 2018	**Girth (m)**	1.6	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	35

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448410976 N 103.7778818 E Woodlands HDB	**Tree ID**	M376	**Species**	*Litsea firma*
Date	03 04 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448287523 N 103.7779179 E Woodlands HDB	**Tree ID**	M377	**Species**	*Macaranga gigantea*
Date	03 04 2018	**Girth (m)**	1.5	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448315948 N 103.7779263 E Woodlands HDB	**Tree ID**	M378	**Species**	*Litsea firma*
Date	03 04 2018	**Girth (m)**	0.35	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	72
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448300364 N 103.7778535 E Woodlands HDB	**Tree ID**	M379	**Species**	*Aidia densiflora*
Date	03 04 2018	**Girth (m)**	0.5	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

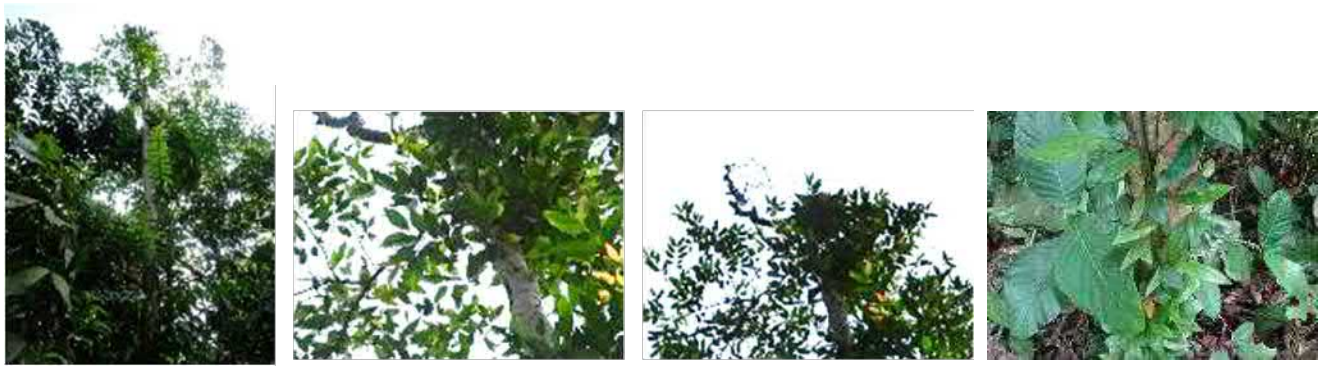
Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448360736 N 103.777977 E Woodlands HDB	**Tree ID**	M380	**Species**	*Pouteria obovata*
Date	03 04 2018	**Girth (m)**	0.4	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448388628 N 103.778025 E Woodlands HDB	**Tree ID**	M38 1	**Species**	*Syzygium polyanthum*
Date	03 04 2018	**Girth (m)**	0.35	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	72

Observations:
1) Good health and vigor 2) Die back at canopy.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448519813 N 103.7780857 E Woodlands HDB	**Tree ID**	M382	**Species**	*Syzygium polyanthum*
Date	03 04 2018	**Girth (m)**	0.2	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Average health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448553011 N 103.7780568 E Woodlands HDB	**Tree ID**	M383	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	0.8	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	39

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448640085 N 103.7780696 E Woodlands HDB	**Tree ID**	M384	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	0.2	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	110

Observations:
1) Poor health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448148528 N 103.7778793 E Woodlands HDB	**Tree ID**	M385	**Species**	*Pouteria obovata*
Date	03 04 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
1) Poor health and vigor 2) Die back at canopy.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448040755 N 103.7779324 E Woodlands HDB	**Tree ID**	M386	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	0.4	**Height (m)**	9
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	71

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447837743 N 103.7779828 E Woodlands HDB	**Tree ID**	M387	**Species**	*Erythrophleum suaveolens*
Date	03 04 2018	**Girth (m)**	1.6	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24

Observations:
1) Poor health and vigor 2) Die back at canopy.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447834817 N 103.7777858 E Woodlands HDB	**Tree ID**	M388	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	0.2	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44783021 N 103.7777545 E Woodlands HDB	**Tree ID**	M389	**Species**	*Lindera lucida*
Date	03 04 2018	**Girth (m)**	0.65	**Height (m)**	14
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	68
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.447757343 N 103.7780754 E Woodlands HDB	**Tree ID**	M390	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.35	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447751707 N 103.7780656 E Woodlands HDB	**Tree ID**	M391	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.4	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	55

Observations:
1) Good health and vigor 2) No significant defects.





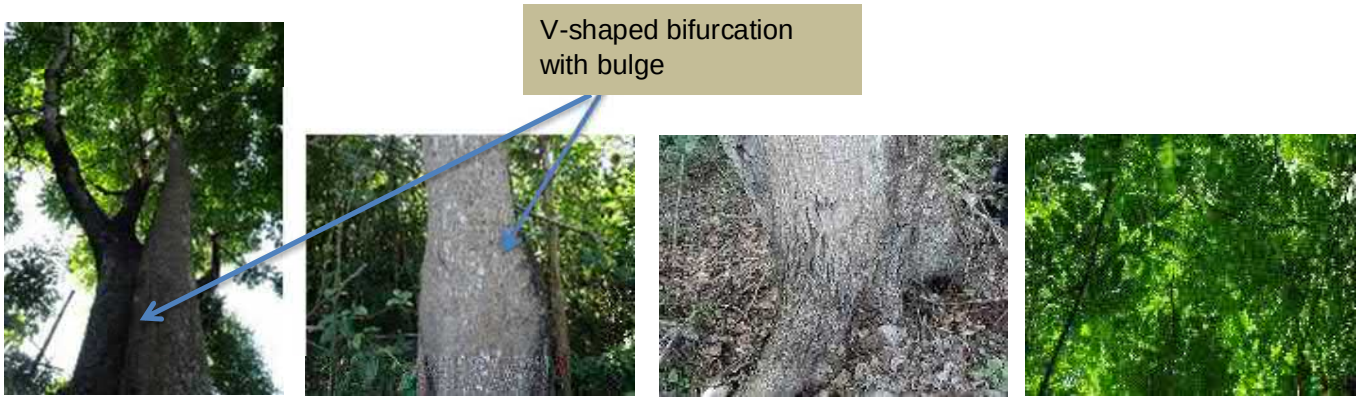
Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44760968 N 103.777673 E Woodlands HDB	**Tree ID**	M392	**Species**	*Erythrophleum suaveolens*
Date	04 04 2018	**Girth (m)**	2.3	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) V-shaped bifurcation with bulge.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44771161 N 103.777657 E Woodlands HDB	**Tree ID**	M393	**Species**	*Erythrophleum suaveolens*
Date	04 04 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447599585 N 103.7776435 E Woodlands HDB	**Tree ID**	M394	**Species**	*Erythrophleum suaveolens*
Date	04 04 2018	**Girth (m)**	2.4	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447342981 N 103.7775723 E Woodlands HDB	**Tree ID**	M395	**Species**	*Erythrophleum suaveolens*
Date	04 04 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447205785 N 103.7775497 E Woodlands HDB	**Tree ID**	M396	**Species**	*Erythrophleum suaveolens*
Date	04 04 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39
Observations: 1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446848185 N 103.7780313 E Woodlands HDB	**Tree ID**	M397	**Species**	*Peltophorum pterocarpum*
Date	04 04 2018	**Girth (m)**	0.3	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric lean towards southeast.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446949063 N 103.7781153 E Woodlands HDB	**Tree ID**	M398	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	1.25	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	20
Observations: 1) Average health and vigor 2) Exposed deadwood on trunk 3) Die back at canopy.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446974404 N 103.7781303 E Woodlands HDB	**Tree ID**	M399	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.7	**Height (m)**	5
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	22

Observations:
1) Poor health and vigor. 2) Cavity on trunk at 2.0m of high. 3) Past canopy failure.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446966139 N 103.7781567 E Woodlands HDB	**Tree ID**	M400	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.8	**Height (m)**	1
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	4

Observations:
1) Poor health and vigor 2) Die back at canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446942018 N 103.7782154 E Woodlands HDB	**Tree ID**	M401	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.9	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	35

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446888961 N 103.7781788 E Woodlands HDB	**Tree ID**	M402	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	1.35	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446892294 N 103.7781784 E Woodlands HDB	**Tree ID**	M403	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.65	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	48

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44690076 N 103.7781839 E Woodlands HDB	**Tree ID**	M404	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.55	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	69

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446884648 N 103.7781008 E Woodlands HDB	**Tree ID**	M405	**Species**	*Lindera cf. lucida*
Date	04 04 2018	**Girth (m)**	1.2	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446761109 N 103.7784105 E Woodlands HDB	**Tree ID**	M406	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.6	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446683049 N 103.7784516 E Woodlands HDB	**Tree ID**	M407	**Species**	*Peltophorum pterocarpum*
Date	04 04 2018	**Girth (m)**	1.2	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) Decay on trunk 3) Partially uprooted 4) Low retention value.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446531618 N 103.7787793 E Woodlands HDB	**Tree ID**	M408	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.7	**Height (m)**	14
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446496396 N 103.7787042 E Woodlands HDB	**Tree ID**	M409	**Species**	*Peltophorum pterocarpum*
Date	04 04 2018	**Girth (m)**	1.7	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.44642269 N 103.7788807 E Woodlands HDB	**Tree ID**	M410	**Species**	*Ficus microcarpa*
Date	04 04 2018	**Girth (m)**	Cluster	**Height (m)**	18
Spread (radius) (m)	6	**DBH (m)**	NA	**Taper (H/D)**	NA
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446442611 N 103.7788384 E Woodlands HDB	**Tree ID**	M411	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.15	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	84

Observations:
1) Good health and vigor 2) No significant defects.





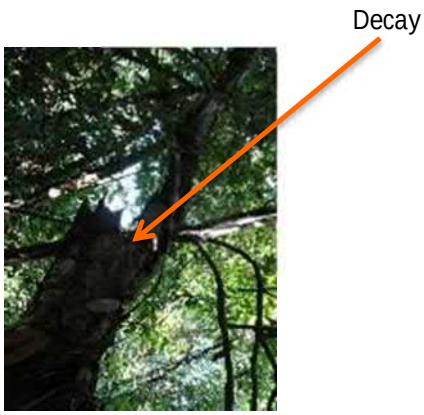
Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446299224 N 103.7789703 E Woodlands HDB	**Tree ID**	M412	**Species**	*Peltophorum pterocarpum*
Date	04 04 2018	**Girth (m)**	0.9	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) Decay on one primary branch 3) Low bifurcation 4) Assessment limited by undergrowth.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446250414 N 103.7790557 E Woodlands HDB	**Tree ID**	M413	**Species**	*Peltophorum pterocarpum*
Date	04 04 2018	**Girth (m)**	0.1	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	251

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446557826 N 103.7793622 E Woodlands HDB	**Tree ID**	M414	**Species**	*Syzygium lineatum*
Date	04 04 2018	**Girth (m)**	1.5	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446702092 N 103.7793179 E Woodlands HDB	**Tree ID**	M415	**Species**	*Pongamia pinnata*
Date	04 04 2018	**Girth (m)**	0.55	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	46

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations: To remove the tree.

Location	1.446714604 N 103.7792072 E Woodlands HDB	**Tree ID**	M416	**Species**	*Litsea elliptica*
Date	04 04 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446601043 N 103.7791311 E Woodlands HDB	**Tree ID**	M417	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.8	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	47

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446672896 N 103.7791015 E Woodlands HDB	**Tree ID**	M418	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446685599 N 103.7790835 E Woodlands HDB	**Tree ID**	M419	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.4	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	47

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446747933 N 103.7789958 E Woodlands HDB	**Tree ID**	M420	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.4466972 N 103.7788927 E Woodlands HDB	**Tree ID**	M421	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.9	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	35
Observations: 1) Good health and vigor 2) No significant defects 3) Lean towards northeast 4) Clusters within proximity.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446656033 N 103.7789117 E Woodlands HDB	**Tree ID**	M422	**Species**	*Macaranga conifera*
Date	04 04 2018	**Girth (m)**	1.6	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) Past primary branch failure 3) Root flare obvious 4) Asymmetric canopy.



Past primary branch failure







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446786764 N 103.7788206 E Woodlands HDB	**Tree ID**	M423	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	1.7	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	26

Observations:
1) Poor health and vigor 2) Die back at canopy 3) Canopy covered by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446765445 N 103.7787769 E Woodlands HDB	**Tree ID**	M424	**Species**	*Syzygium polyanthum*
Date	04 04 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446729499 N 103.7787406 E Woodlands HDB	**Tree ID**	M425	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	1.1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	46

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44670537 N 103.7786974 E Woodlands HDB	**Tree ID**	M426	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects 3) Covered by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446720683 N 103.778604 E Woodlands HDB	**Tree ID**	M427	**Species**	*Lindera lucida*
Date	04 04 2018	**Girth (m)**	0.8	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	39
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446781093 N 103.7787078 E Woodlands HDB	**Tree ID**	M428	**Species**	*Ilex cymosa*
Date	04 04 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446827516 N 103.7784819 E Woodlands HDB	**Tree ID**	M429	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.2	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446973619 N 103.7784158 E Woodlands HDB	**Tree ID**	M430	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.9	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects 3) Lean towards southeast.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446998042 N 103.7784159 E Woodlands HDB	**Tree ID**	M431	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.75	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	50

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446997647 N 103.778408 E Woodlands HDB	**Tree ID**	M432	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.4	**Height (m)**	10
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446995879 N 103.7783799 E Woodlands HDB	**Tree ID**	M433	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.45	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	56
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446997015 N 103.77837 E Woodlands HDB	**Tree ID**	M434	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.5	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	50

Observations:
1) Poor health and vigor 2) Decay on primary branch 3) Die back at canopy.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446966465 N 103.7783759 E Woodlands HDB	**Tree ID**	M435	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.4	**Height (m)**	10
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446940128 N 103.7783367 E Woodlands HDB	**Tree ID**	M436	**Species**	*Oncosperma tigillaria*
Date	05 04 2018	**Girth (m)**	0.6	**Height (m)**	3
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	16

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.4469685 N 103.7782891 E Woodlands HDB	**Tree ID**	M437	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.8	**Height (m)**	9
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	35

Observations:
1) Average health and vigor 2) Die back at canopy 3) Low bifurcation.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44709856 N 103.7783178 E Woodlands HDB	**Tree ID**	M438	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.35	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Poor health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447135616 N 103.7782463 E Woodlands HDB	**Tree ID**	M439	**Species**	*Macaranga hullettii*
Date	05 04 2018	**Girth (m)**	0.2	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.447132327 N 103.7782596 E Woodlands HDB	**Tree ID**	M440	**Species**	*Macaranga heynei*
Date	05 04 2018	**Girth (m)**	0.2	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447022457 N 103.7785404 E Woodlands HDB	**Tree ID**	M441	**Species**	*Cinnamomum iners*
Date	05 04 2018	**Girth (m)**	1.55	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	20
Observations: 1) Good health and vigor 2) No significant defects 3) Self-corrected lean.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446100483 N 103.7791323 E Woodlands HDB	**Tree ID**	M442	**Species**	*Peltophorum pterocarpum*
Date	05 04 2018	**Girth (m)**	2.5	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.445962909 N 103.7792355 E Woodlands HDB	**Tree ID**	M443	**Species**	*Cinnamomum iners*
Date	05 04 2018	**Girth (m)**	2	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	13
Observations: 1) Good health and vigor 2) No significant defects 3) Multiple attachment.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.445841427 N 103.7793638 E Woodlands HDB	**Tree ID**	M444	**Species**	*Cyrtophyllum fragrans*
Date	05 04 2018	**Girth (m)**	1.6	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects 3) Low bifurcation.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.445692715 N 103.7794887 E Woodlands HDB	**Tree ID**	M445	**Species**	*Antidesma bunius*
Date	05 04 2018	**Girth (m)**	1.55	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445643402 N 103.7794008 E Woodlands HDB	**Tree ID**	M446	**Species**	*Oncosperma tigillaria*
Date	05 04 2018	**Girth (m)**	0.2	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445410675 N 103.7795347 E Woodlands HDB	**Tree ID**	M447	**Species**	*Oncosperma tigillaria*
Date	05 04 2018	**Girth (m)**	1.5	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	17
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445319764 N 103.77957 E Woodlands HDB	**Tree ID**	M448	**Species**	*Delonix regia*
Date	05 04 2018	**Girth (m)**	1.6	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) U-shaped bifurcation.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445152868 N 103.7796237 E Woodlands HDB	**Tree ID**	M449	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.45	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	56

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445126981 N 103.779671 E Woodlands HDB	**Tree ID**	M450	**Species**	*Pouteria obovata*
Date	05 04 2018	**Girth (m)**	0.9	**Height (m)**	14
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	49

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Self-corrected lean.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444982998 N 103.7797264 E Woodlands HDB	**Tree ID**	M451	**Species**	*Pouteria obovata*
Date	05 04 2018	**Girth (m)**	0.8	**Height (m)**	14
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	55

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444946424 N 103.7797655 E Woodlands HDB	**Tree ID**	M452	**Species**	*Pouteria obovata*
Date	05 04 2018	**Girth (m)**	1.4	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	36

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.444864843 N 103.7797421 E Woodlands HDB	**Tree ID**	M453	**Species**	*Peltophorum pterocarpum*
Date	05 04 2018	**Girth (m)**	1.25	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.444769246 N 103.7798984 E Woodlands HDB	**Tree ID**	M454	**Species**	*Lindera lucida*
Date	05 04 2018	**Girth (m)**	0.25	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	88
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.44426449 N 103.7802242 E Woodlands HDB	**Tree ID**	M455	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.55	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444235375 N 103.7802911 E Woodlands HDB	**Tree ID**	M456	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.2	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	37
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444276493 N 103.7802971 E Woodlands HDB	**Tree ID**	M457	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.05	**Height (m)**	17
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	51
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444294441 N 103.7803297 E Woodlands HDB	**Tree ID**	M458	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.75	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	29
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444253758 N 103.7803397 E Woodlands HDB	**Tree ID**	M459	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.9	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) Exposed deadwood on trunk.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444246678 N 103.7803281 E Woodlands HDB	**Tree ID**	M460	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.85	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	37
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444214392 N 103.7803209 E Woodlands HDB	**Tree ID**	M461	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.35	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	28
Observations: 1) Good health and vigor 2) No significant defects 3) Multiple attachment.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444196383 N 103.7803521 E Woodlands HDB	**Tree ID**	M462	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.9	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	35
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444215555 N 103.7803491 E Woodlands HDB	**Tree ID**	M463	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.6	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	52

Observations:
1) Average health and vigor 2) Decay on trunk.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444225283 N 103.7803848 E Woodlands HDB	**Tree ID**	M464	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.7	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	45
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444219184 N 103.7804212 E Woodlands HDB	**Tree ID**	M465	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.6	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	42
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444148962 N 103.7803644 E Woodlands HDB	**Tree ID**	M466	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.2	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444118294 N 103.780395 E Woodlands HDB	**Tree ID**	M467	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.1	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	23
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444208033 N 103.7804538 E Woodlands HDB	**Tree ID**	M468	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.7	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	45
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444187497 N 103.7804962 E Woodlands HDB	**Tree ID**	M469	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.2	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects 3) U-shaped bifurcation.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444139497 N 103.7804625 E Woodlands HDB	**Tree ID**	M470	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.4	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	27
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444161476 N 103.7804916 E Woodlands HDB	**Tree ID**	M471	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.6	**Height (m)**	14
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	73
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444223919 N 103.7805045 E Woodlands HDB	**Tree ID**	M472	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.8	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444251808 N 103.780478 E Woodlands HDB	**Tree ID**	M473	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.55	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	46
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444279455 N 103.7804899 E Woodlands HDB	**Tree ID**	M474	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.9	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	42
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444280242 N 103.7804999 E Woodlands HDB	**Tree ID**	M475	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444267768 N 103.7805359 E Woodlands HDB	**Tree ID**	M476	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.6	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	28
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444221221 N 103.7804915 E Woodlands HDB	**Tree ID**	M477	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.8	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444200032 N 103.7805292 E Woodlands HDB	**Tree ID**	M478	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1.3	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) U-shaped bifurcation.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444153658 N 103.7805182 E Woodlands HDB	**Tree ID**	M479	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.8	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444161944 N 103.7805609 E Woodlands HDB	**Tree ID**	M480	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.7	**Height (m)**	5
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	22
Observations: 1) Average health and vigor 2) Past main trunk failure.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444177614 N 103.7805994 E Woodlands HDB	**Tree ID**	M481	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	1	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	28
Observations: 1) Good health and vigor 2) Decay on trunk.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444206949 N 103.7805692 E Woodlands HDB	**Tree ID**	M482	**Species**	*Cerbera odollam*
Date	05 04 2018	**Girth (m)**	0.75	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	50
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444292716 N 103.7806283 E Woodlands HDB	**Tree ID**	M483	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	0.85	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	44

Observations:
1) Good health and vigor 2) Decay on primary branch.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444300206 N 103.7806578 E Woodlands HDB	**Tree ID**	M484	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	1.4	**Height (m)**	13
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	29

Observations:
1) Good health and vigor 2) Decay on trunk.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444252098 N 103.7806577 E Woodlands HDB	**Tree ID**	M485	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	0.85	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	44
Observations: 1) Good health and vigor 2) Girdling root.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444247113 N 103.7806029 E Woodlands HDB	**Tree ID**	M486	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	0.8	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444223512 N 103.7805619 E Woodlands HDB	**Tree ID**	M487	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	0.9	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) Multiple decay on trunk.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444197055 N 103.7806536 E Woodlands HDB	**Tree ID**	M488	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	0.5	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	50
Observations: 1) Average health and vigor 2) Past primary branch failure.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.44420216 N 103.7806308 E Woodlands HDB	**Tree ID**	M489	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	1	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) Cankers on primary branch.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444168806 N 103.7806753 E Woodlands HDB	**Tree ID**	M490	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	2	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	25
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444135906 N 103.7806629 E Woodlands HDB	**Tree ID**	M491	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	0.9	**Height (m)**	9
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	31
Observations: 1) Good health and vigor. 2) Decay on trunk facing southwest. 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444147808 N 103.7806893 E Woodlands HDB	**Tree ID**	M492	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	1.1	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	43

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable (Planted).

Recommendations: To remove the tree.

Location	1.444164828 N 103.7807341 E Woodlands HDB	**Tree ID**	M493	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40
Observations: 1) Good health and vigor 2) Cavity on trunk facing SW.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444160844 N 103.7807534 E Woodlands HDB	**Tree ID**	M494	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	1.3	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	29
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444201373 N 103.7807929 E Woodlands HDB	**Tree ID**	M495	**Species**	*Cerbera odollam*
Date	09 04 2018	**Girth (m)**	1.8	**Height (m)**	13
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	23
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444211187 N 103.7808166 E Woodlands HDB	**Tree ID**	M496	**Species**	*Spathodea campanulata*
Date	09 04 2018	**Girth (m)**	1.5	**Height (m)**	6
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	13
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.444088961 N 103.7807227 E Woodlands HDB	**Tree ID**	M497	**Species**	*Syzygium grande*
Date	09 04 2018	**Girth (m)**	1.55	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	30
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.443984224 N 103.780589 E Woodlands HDB	**Tree ID**	M498	**Species**	*Syzygium cf. cumini*
Date	09 04 2018	**Girth (m)**	1.85	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	25
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) U-shaped bifurcation.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44396171 N 103.7806664 E Woodlands HDB	**Tree ID**	M499	**Species**	*Syzygium cf. cumini*
Date	09 04 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.443918519 N 103.7807133 E Woodlands HDB	**Tree ID**	M500	**Species**	*Syzygium cf. cumini*
Date	09 04 2018	**Girth (m)**	2.7	**Height (m)**	15
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Low bifurcation.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.444785444 N 103.7800767 E Woodlands HDB	**Tree ID**	M501	**Species**	*Peltophorum pterocarpum*
Date	09 04 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.444993813 N 103.7799848 E Woodlands HDB	**Tree ID**	M502	**Species**	*Dillenia suffruticosa*
Date	09 04 2018	**Girth (m)**	2.2	**Height (m)**	5
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	7
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.445366744 N 103.7797551 E Woodlands HDB	**Tree ID**	M503	**Species**	*Dillenia suffruticosa*
Date	09 04 2018	**Girth (m)**	1.8	**Height (m)**	4
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	7
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.44557412 N 103.7797304 E Woodlands HDB	**Tree ID**	M504	**Species**	*Litsea firma*
Date	09 04 2018	**Girth (m)**	0.1	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445552364 N 103.7797328 E Woodlands HDB	**Tree ID**	M505	**Species**	*Lindera lucida*
Date	09 04 2018	**Girth (m)**	0.6	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445422577 N 103.7797093 E Woodlands HDB	**Tree ID**	M506	**Species**	*Lindera lucida*
Date	09 04 2018	**Girth (m)**	0.5	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	75
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445446065 N 103.7796608 E Woodlands HDB	**Tree ID**	M507	**Species**	*Lindera lucida*
Date	09 04 2018	**Girth (m)**	0.25	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	88
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.44565803 N 103.7796411 E Woodlands HDB	**Tree ID**	M508	**Species**	*Litsea firma*
Date	09 04 2018	**Girth (m)**	0.1	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445673991 N 103.7796383 E Woodlands HDB	**Tree ID**	M509	**Species**	*Oncosperma tigillaria*
Date	09 04 2018	**Girth (m)**	0.8	**Height (m)**	2
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	8
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445716988 N 103.7796529 E Woodlands HDB	**Tree ID**	M510	**Species**	*Litsea firma*
Date	09 04 2018	**Girth (m)**	0.1	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446012473 N 103.7795926 E Woodlands HDB	**Tree ID**	M511	**Species**	*Vitex pinnata*
Date	09 04 2018	**Girth (m)**	1.8	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	26
Observations: 1) Average health and vigor 2) Die back at canopy.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446002852 N 103.7795822 E Woodlands HDB	**Tree ID**	M512	**Species**	*Glochidion cf. lutescens*
Date	09 04 2018	**Girth (m)**	0.5	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically Endangered.					
Recommendations: To remove the tree.					

Location	1.446001917 N 103.7794568 E Woodlands HDB	**Tree ID**	M513	**Species**	*Glochidion cf. lutescens*
Date	09 04 2018	**Girth (m)**	0.5	**Height (m)**	15
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically Endangered.

Recommendations: To remove the tree.

Location	1.446058707 N 103.779494 E Woodlands HDB	**Tree ID**	M514	**Species**	*Dillenia suffruticosa*
Date	09 04 2018	**Girth (m)**	1.8	**Height (m)**	5
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	9

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449167371 N 103.7782757 E Woodlands HDB	**Tree ID**	M515	**Species**	*Heritiera littoralis*
Date	10 04 2018	**Girth (m)**	0.1	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	53
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Not directly affected by proposed development.					
Assessment: 1. Tree is not directly affected by proposed development. 2. Singapore Red Data Status: Endangered (Planted).					
Recommendations: 1. To retain the tree. 2. Recommended TPZ is 2m in radius.					

Location	1.448834674 N 103.7784245 E Woodlands HDB	**Tree ID**	M516	**Species**	*Premna serratifolia*
Date	10 04 2018	**Girth (m)**	0.2	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.44872733 N 103.7785434 E Woodlands HDB	**Tree ID**	M517	**Species**	*Premna serratifolia*
Date	10 04 2018	**Girth (m)**	0.9	**Height (m)**	4
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	14
Observations: 1) Good health and vigor 2) No significant defects 3) Lean towards northeast.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448572986 N 103.7785897 E Woodlands HDB	**Tree ID**	M518	**Species**	*Oncosperma tigillaria*
Date	10 04 2018	**Girth (m)**	Cluster	**Height (m)**	7
Spread (radius) (m)	2	**DBH (m)**	NA	**Taper (H/D)**	NA
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448421704 N 103.7787204 E Woodlands HDB	**Tree ID**	M519	**Species**	*Macaranga hullettii*
Date	10 04 2018	**Girth (m)**	0.9	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	28
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.448321499 N 103.7786979 E Woodlands HDB	**Tree ID**	M520	**Species**	*Litsea firma*
Date	10 04 2018	**Girth (m)**	0.9	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	35
Observations: 1) Good health and vigor 2) No significant defects 3) Suspected animal activity.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448248731 N 103.7787856 E Woodlands HDB	**Tree ID**	M521	**Species**	*Oncosperma tigillaria*
Date	10 04 2018	**Girth (m)**	1	**Height (m)**	6
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	19
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448248966 N 103.778813 E Woodlands HDB	**Tree ID**	M522	**Species**	*Litsea firma*
Date	10 04 2018	**Girth (m)**	0.5	**Height (m)**	9
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	57
Observations: 1) Good health and vigor 2) No significant defects 3) Growing on slope next to stream.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448101521 N 103.7787885 E Woodlands HDB	**Tree ID**	M523	**Species**	*Litsea elliptica*
Date	10 04 2018	**Girth (m)**	2.05	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.448124275 N 103.7787292 E Woodlands HDB	**Tree ID**	M524	**Species**	*Premna serratifolia*
Date	10 04 2018	**Girth (m)**	0.35	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) Decay on trunk facing northwest.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448023513 N 103.7788194 E Woodlands HDB	**Tree ID**	M525	**Species**	*Premna serratifolia*
Date	10 04 2018	**Girth (m)**	0.15	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	84
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448022588 N 103.7788997 E Woodlands HDB	**Tree ID**	M526	**Species**	*Litsea elliptica*
Date	10 04 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.44791762 N 103.7788786 E Woodlands HDB	**Tree ID**	M527	**Species**	*Litsea firma*
Date	10 04 2018	**Girth (m)**	0.8	**Height (m)**	16
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	63
Observations: 1) Poor health and vigor 2) Die back at canopy 3) Growing next to footpath.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.447824831 N 103.7789633 E Woodlands HDB	**Tree ID**	M528	**Species**	*Syzygium polyanthum*
Date	10 04 2018	**Girth (m)**	0.5	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.447455962 N 103.7791155 E Woodlands HDB	**Tree ID**	M529	**Species**	*Campnosperma auriculata*
Date	10 04 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Asymmetric canopy.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.447147138 N 103.7792254 E Woodlands HDB	**Tree ID**	M530	**Species**	*Cinnamomum iners*
Date	10 04 2018	**Girth (m)**	1.6	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	20
Observations: 1) Good health and vigor 2) No significant defects 3) Low bifurcation.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.447269145 N 103.779316 E Woodlands HDB	**Tree ID**	M531	**Species**	*Intsia bijuga*
Date	10 04 2018	**Girth (m)**	0.9	**Height (m)**	15
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	52

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446902328 N 103.7793562 E Woodlands HDB	**Tree ID**	M532	**Species**	*Lindera lucida*
Date	10 04 2018	**Girth (m)**	1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	57
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.44684067 N 103.7793883 E Woodlands HDB	**Tree ID**	M533	**Species**	*Litsea firma*
Date	10 04 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers 5) Saplings within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446878351 N 103.7793868 E Woodlands HDB	**Tree ID**	M534	**Species**	*Oncosperma tigillaria*
Date	10 04 2018	**Girth (m)**	1	**Height (m)**	7
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	22
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446845468 N 103.7794175 E Woodlands HDB	**Tree ID**	M535	**Species**	*Campnosperma auriculata*
Date	10 04 2018	**Girth (m)**	1.7	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	22
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446831322 N 103.7795735 E Woodlands HDB	**Tree ID**	M536	**Species**	*Intsia bijuga*
Date	10 04 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: 1) Poor health and vigor 2) Die back at canopy.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.44668709 N 103.7795127 E Woodlands HDB	**Tree ID**	M537	**Species**	*Pandanus cf. atrocarpus*
Date	10 04 2018	**Girth (m)**	5	**Height (m)**	9
Spread (radius) (m)	6	**DBH (m)**	1.6	**Taper (H/D)**	6
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Endangered.					
Recommendations: To remove the tree.					

Location	1.446490091 N 103.7794652 E Woodlands HDB	**Tree ID**	M538	**Species**	*Cinnamomum iners*
Date	10 04 2018	**Girth (m)**	1.5	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	17
Observations: 1) Good health and vigor 2) No significant defects 3) Lean towards southwest.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.449677169 N 103.7790011 E Woodlands HDB	**Tree ID**	M539	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16
Observations: 1) Good health and vigor 2) No significant defects 3) Lean towards southeast.					
  					
Impacts of Construction: Not directly affected by proposed development.					
Assessment: 1. Tree is not directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: 1. To retain the tree. 2. Recommended TPZ is 4m in radius.					

Location	1.449670305 N 103.7789425 E Woodlands HDB	**Tree ID**	M540	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) Cavity on trunk at 4.0m of height facing to north.






Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 5m in radius.
3. Instrumental assessment with Resistograph is recommended

Location	1.44968515 N 103.7789371 E Woodlands HDB	**Tree ID**	M541	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.449555738 N 103.7790006 E Woodlands HDB	**Tree ID**	M542	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2.5	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	15

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 5m in radius.

Location	1.449615378 N 103.7789178 E Woodlands HDB	**Tree ID**	M543	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2.4	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	16

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 5m in radius.

Location	1.449522554 N 103.7789666 E Woodlands HDB	**Tree ID**	M544	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	19
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Not directly affected by proposed development.					
Assessment: 1. Tree is not directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: 1. To retain the tree. 2. Recommended TPZ is 4m in radius.					

Location	1.449619056 N 103.7788773 E Woodlands HDB	**Tree ID**	M545	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	19
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Not directly affected by proposed development.					
Assessment: 1. Tree is not directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: 1. To retain the tree. 2. Recommended TPZ is 5m in radius.					

Location	1.449739647 N 103.7790191 E Woodlands HDB	**Tree ID**	M546	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2.5	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	15

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 5m in radius.

Location	1.44975537 N 103.7790693 E Woodlands HDB	**Tree ID**	M547	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	3	**Height (m)**	10
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	10

Observations:
1) Good health and vigor 2) Decay on branches.






Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 5m in radius.

Location	1.449703881 N 103.7788404 E Woodlands HDB	**Tree ID**	M548	**Species**	*Avicennia rumphiana*
Date	10 04 2018	**Girth (m)**	2	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.44865301 N 103.7781643 E Woodlands HDB	**Tree ID**	M549	**Species**	*Ficus microcarpa*
Date	11 04 2018	**Girth (m)**	2.15	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	22
Observations: 1) Good health and vigor 2) No defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.448315429 N 103.7782085 E Woodlands HDB	**Tree ID**	M550	**Species**	*Morella esculenta*
Date	11 04 2018	**Girth (m)**	1.8	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	21
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Multiple attachment.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.448307026 N 103.7782155 E Woodlands HDB	**Tree ID**	M551	**Species**	*Pouteria obovata*
Date	11 04 2018	**Girth (m)**	1.15	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	41
Observations: 1) Good health and vigor 2) No defects 3) Asymmetric lean towards North.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448209215 N 103.7780795 E Woodlands HDB	**Tree ID**	M552	**Species**	*Acacia auriculiformis*
Date	11 04 2018	**Girth (m)**	1.8	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44791234 N 103.7781091 E Woodlands HDB	**Tree ID**	M553	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	1.55	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	28
Observations: 1) Good health and vigor 2) No defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447878104 N 103.7781462 E Woodlands HDB	**Tree ID**	M554	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	2.3	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	20
Observations: 1) Good health and vigor 2) No defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447926675 N 103.778277 E Woodlands HDB	**Tree ID**	M555	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	2.1	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	22
Observations: 1) Good health and vigor 2) No defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447809686 N 103.7782686 E Woodlands HDB	**Tree ID**	M556	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	2.15	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	23
Observations: 1) Good health and vigor 2) No defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447867524 N 103.7782302 E Woodlands HDB	**Tree ID**	M557	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	1.5	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447738963 N 103.7782473 E Woodlands HDB	**Tree ID**	M558	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	1.55	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447603954 N 103.7784861 E Woodlands HDB	**Tree ID**	M559	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	1.8	**Height (m)**	5
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	9
Observations: 1) Good health and vigor 2) No defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44749608 N 103.7785685 E Woodlands HDB	**Tree ID**	M560	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	3.6	**Height (m)**	15
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	13
Observations: 1) Good health and vigor 2) No defects 3) Root flare obvious.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447199294 N 103.7785398 E Woodlands HDB	**Tree ID**	M561	**Species**	*Cinnamomum iners*
Date	11 04 2018	**Girth (m)**	1.6	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	20
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446854749 N 103.7791839 E Woodlands HDB	**Tree ID**	M562	**Species**	*Syzygium lineatum*
Date	11 04 2018	**Girth (m)**	1.8	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	21
Observations: 1) Good health and vigor 2) No defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446985902 N 103.7791913 E Woodlands HDB	**Tree ID**	M563	**Species**	*Elaeocarpus mastersii*
Date	11 04 2018	**Girth (m)**	1.9	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	26
Observations: 1) Good health and vigor 2) No defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.448092174 N 103.7786263 E Woodlands HDB	**Tree ID**	M564	**Species**	*Erythrophleum suaveolens*
Date	11 04 2018	**Girth (m)**	3.85	**Height (m)**	14
Spread (radius) (m)	6	**DBH (m)**	1.2	**Taper (H/D)**	11
Observations: 1) Good health and vigor 2) No defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448378808 N 103.7783745 E Woodlands HDB	**Tree ID**	M565	**Species**	*Syzygium lineatum*
Date	16 04 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: 1) Good health and vigor 2) No significant defects. 2) Extensive aerial root formation on trunk.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.448396623 N 103.7784102 E Woodlands HDB	**Tree ID**	M566	**Species**	*Pouteria obovata*
Date	16 04 2018	**Girth (m)**	1.3	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	48
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448423777 N 103.7784215 E Woodlands HDB	**Tree ID**	M567	**Species**	*Litsea firma*
Date	16 04 2018	**Girth (m)**	0.85	**Height (m)**	20
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	74
Observations: 1) Good health and vigor 2) Asymmetric canopy 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.44841758 N 103.7784798 E Woodlands HDB	**Tree ID**	M568	**Species**	*Syzygium polyanthum*
Date	16 04 2018	**Girth (m)**	0.8	**Height (m)**	20
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.448370914 N 103.7784545 E Woodlands HDB	**Tree ID**	M569	**Species**	*Aporosa nigricans*
Date	16 04 2018	**Girth (m)**	0.15	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	42
Observations: 1) Past canopy failure 2) Average health and vigor.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Endangered.					
Recommendations: To remove the tree.					

Location	1.448244852 N 103.7783107 E Woodlands HDB	**Tree ID**	M570	**Species**	*Dillenia suffruticosa*
Date	16 04 2018	**Girth (m)**	2.5	**Height (m)**	6
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	8
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.447912466 N 103.7782675 E Woodlands HDB	**Tree ID**	M571	**Species**	*Erythrophleum suaveolens*
Date	16 04 2018	**Girth (m)**	2.3	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	25
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44799059 N 103.7784356 E Woodlands HDB	**Tree ID**	M572	**Species**	*Erythrophleum suaveolens*
Date	16 04 2018	**Girth (m)**	1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) V-shape bifurcation with bulge 3) Root flare obvious.



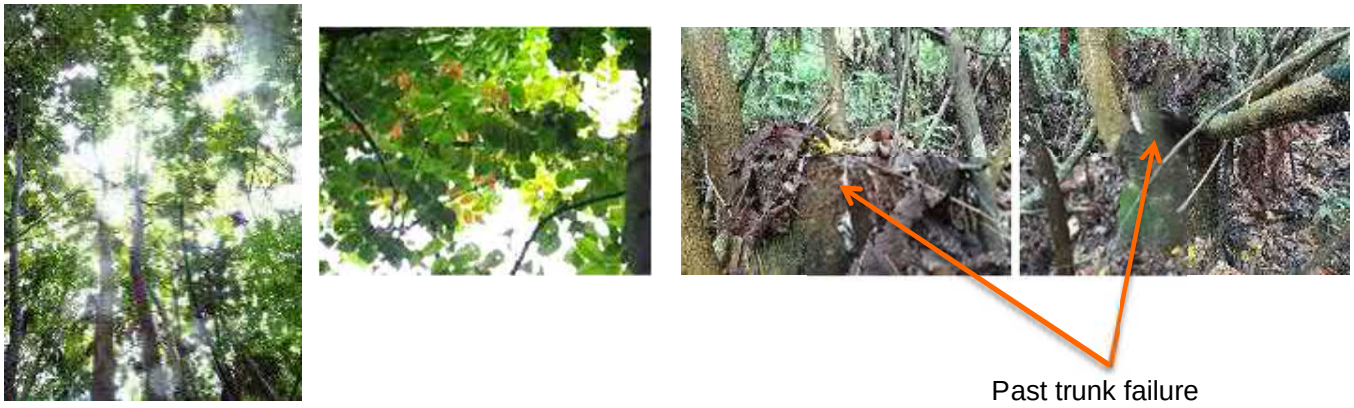
Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447743724 N 103.7787005 E Woodlands HDB	**Tree ID**	M573	**Species**	*Erythrophleum suaveolens*
Date	16 04 2018	**Girth (m)**	1.8	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	14

Observations:
1) Past trunk failure.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447615837 N 103.778667 E Woodlands HDB	**Tree ID**	M574	**Species**	*Erythrophleum suaveolens*
Date	16 04 2018	**Girth (m)**	2.4	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	16
Observations: 1) Past trunk failure 2) Good health and vigor.					







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447537793 N 103.7789036 E Woodlands HDB	**Tree ID**	M575	**Species**	*Endospermum diadenum*
Date	16 04 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.447386728 N 103.7787518 E Woodlands HDB	**Tree ID**	M576	**Species**	*Dillenia suffruticosa*
Date	16 04 2018	**Girth (m)**	2	**Height (m)**	6
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	9
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.447176517 N 103.7789411 E Woodlands HDB	**Tree ID**	M577	**Species**	*Oncosperma tigillaria*
Date	16 04 2018	**Girth (m)**	Cluster	**Height (m)**	5
Spread (radius) (m)	10	**DBH (m)**	NA	**Taper (H/D)**	NA
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.450351375 N 103.7793743 E Woodlands HDB	**Tree ID**	M578	**Species**	*Casuarina equisetifolia*
Date	17 04 2018	**Girth (m)**	1.8	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	38
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450317744 N 103.7794225 E Woodlands HDB	**Tree ID**	M579	**Species**	*Casuarina equisetifolia*
Date	17 04 2018	**Girth (m)**	2.4	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	29
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450239243 N 103.7793713 E Woodlands HDB	**Tree ID**	M580	**Species**	*Terminalia catappa*
Date	17 04 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.450046906 N 103.77939 E Woodlands HDB	**Tree ID**	M581	**Species**	*Nypa fruticans*
Date	17 04 2018	**Girth (m)**	1.5-2	**Height (m)**	6
Spread (radius) (m)	4	**DBH (m)**	0.48-0.64	**Taper (H/D)**	13-10

Observations:
1) Good health and vigor 2) No significant defects 3) Cluster x6.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.449931045 N 103.7793722 E Woodlands HDB	**Tree ID**	M582	**Species**	*Avicennia rumphiana*
Date	17 04 2018	**Girth (m)**	1.5	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 3m in radius.

Location	1.449805451 N 103.7793671 E Woodlands HDB	**Tree ID**	M583	**Species**	*Avicennia rumphiana*
Date	17 04 2018	**Girth (m)**	2	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 4m in radius.

Location	1.449842223 N 103.7793122 E Woodlands HDB	**Tree ID**	M584	**Species**	*Avicennia rumphiana*
Date	17 04 2018	**Girth (m)**	1.5	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	17
Observations: 1) Good health and vigor 2) Decay on trunk at 5.0m of height.					
  					
Impacts of Construction: Not directly affected by proposed development.					
Assessment: 1. Tree is not directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: Removal is recommended independent of proposed construction.					

Location	1.44976972 N 103.7792297 E Woodlands HDB	**Tree ID**	M585	**Species**	*Avicennia rumphiana*
Date	17 04 2018	**Girth (m)**	2.4	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	16
Observations: 1) Good health and vigor 2) Extensive cavity on trunk at 5.0m of height.					
					
Impacts of Construction: Not directly affected by proposed development.					
Assessment: 1. Tree is not directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: Removal is recommended independent of proposed construction.					

Location	1.44986341 N 103.779582 E Woodlands HDB	**Tree ID**	M586	**Species**	*Samanea saman*
Date	17 04 2018	**Girth (m)**	1.8	**Height (m)**	15
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	26

Observations:
1) Good health and vigor 2) No significant defects 3) Growing on slope.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449842834 N 103.7795397 E Woodlands HDB	**Tree ID**	M587	**Species**	*Falcataria moluccana*
Date	17 04 2018	**Girth (m)**	3	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	19
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449753265 N 103.7794895 E Woodlands HDB	**Tree ID**	M588	**Species**	*Ficus variegata*
Date	17 04 2018	**Girth (m)**	1.5	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) Growing on slope 3) Cavity on trunk at 5.0m of height.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44965014 N 103.7794613 E Woodlands HDB	**Tree ID**	M589	**Species**	*Ficus variegata*
Date	17 04 2018	**Girth (m)**	Covered	**Height (m)**	14
Spread (radius) (m)	6	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) Assessment limited by think vegetation clusters.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449438495 N 103.7794718 E Woodlands HDB	**Tree ID**	M590	**Species**	*Cecropia pachystachya*
Date	17 04 2018	**Girth (m)**	3.5	**Height (m)**	9
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	8

Observations:
1) Invasive species 2) Saplings within proximity.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449389315 N 103.7793381 E Woodlands HDB	**Tree ID**	M591	**Species**	*Ficus variegata*
Date	17 04 2018	**Girth (m)**	2	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	19
Observations: 1) Good health and vigor 2) No significant defects 3) Assessment limited by thick vegetation & climbers.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.449194132 N 103.7792379 E Woodlands HDB	**Tree ID**	M592	**Species**	*Falcataria moluccana*
Date	17 04 2018	**Girth (m)**	3	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	18
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448162915 N 103.7792927 E Woodlands HDB	**Tree ID**	M593	**Species**	*Cecropia pachystachya*
Date	17 04 2018	**Girth (m)**	2	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	13

Observations:
1) Invasive species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447803822 N 103.7794438 E Woodlands HDB	**Tree ID**	M594	**Species**	*Samanea saman*
Date	17 04 2018	**Girth (m)**	1.5	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	19
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447814604 N 103.7792582 E Woodlands HDB	**Tree ID**	M595	**Species**	*Samanea saman*
Date	17 04 2018	**Girth (m)**	1.5	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) V-shaped bifurcation.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446967504 N 103.7797306 E Woodlands HDB	**Tree ID**	M596	**Species**	*Sonneratia caseolaris*
Date	17 04 2018	**Girth (m)**	1.25	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 3m in radius.

Location	1.447009715 N 103.7796764 E Woodlands HDB	**Tree ID**	M597	**Species**	*Xylocarpus moluccensis*
Date	17 04 2018	**Girth (m)**	0.1	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Not directly affected by proposed development.

Assessment:
1. Tree is not directly affected by proposed development.
2. Singapore Red Data Status: Endangered.

Recommendations:
1. To retain the tree.
2. Recommended TPZ is 2m in radius.

Location	1.446414125 N 103.7795632 E Woodlands HDB	**Tree ID**	M598	**Species**	*Litsea elliptica*
Date	19 04 2018	**Girth (m)**	2.1	**Height (m)**	25
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	37
Observations: 1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446345669 N 103.7796278 E Woodlands HDB	**Tree ID**	M599	**Species**	*Litsea firma*
Date	19 04 2018	**Girth (m)**	0.8	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446310865 N 103.7796409 E Woodlands HDB	**Tree ID**	M600	**Species**	*Porterandia anisophylla*
Date	19 04 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.44632604 N 103.7796388 E Woodlands HDB	**Tree ID**	M601	**Species**	*Porterandia anisophylla*
Date	19 04 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446223346 N 103.779601 E Woodlands HDB	**Tree ID**	M602	**Species**	*Campnosperma auriculata*
Date	19 04 2018	**Girth (m)**	1.7	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	37

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446170169 N 103.7795847 E Woodlands HDB	**Tree ID**	M603	**Species**	*Macaranga gigantea*
Date	19 04 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446112267 N 103.7797412 E Woodlands HDB	**Tree ID**	M604	**Species**	*Vitex pinnata*
Date	19 04 2018	**Girth (m)**	1.95	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	29

Observations:
1) Average health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446076569 N 103.7797801 E Woodlands HDB	**Tree ID**	M605	**Species**	*Lindera lucida*
Date	19 04 2018	**Girth (m)**	0.55	**Height (m)**	6
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445813453 N 103.7797588 E Woodlands HDB	**Tree ID**	M606	**Species**	*Oncosperma tigillaria*
Date	19 04 2018	**Girth (m)**	0.6	**Height (m)**	4
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	21
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445784529 N 103.7798317 E Woodlands HDB	**Tree ID**	M607	**Species**	*Canthium confertum*
Date	19 04 2018	**Girth (m)**	0.05	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	251
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Endangered.					
Recommendations: To remove the tree.					

Location	1.445742891 N 103.7798411 E Woodlands HDB	**Tree ID**	M608	**Species**	*Pouteria obovata*
Date	19 04 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105
Observations: 1) Average health and vigor 2) No significant defects 3) Leaves necrotic.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445633348 N 103.7798488 E Woodlands HDB	**Tree ID**	M609	**Species**	*Lindera lucida*
Date	19 04 2018	**Girth (m)**	0.85	**Height (m)**	18
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	67
Observations: 1) Poor health and vigor 2) Die back at canopy.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.444818423 N 103.7802486 E Woodlands HDB	**Tree ID**	M610	**Species**	*Peltophorum pterocarpum*
Date	19 04 2018	**Girth (m)**	0.4	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	55

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.444810631 N 103.78028 E Woodlands HDB	**Tree ID**	M611	**Species**	*Peltophorum pterocarpum*
Date	19 04 2018	**Girth (m)**	0.45	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	49

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.444792562 N 103.7805663 E Woodlands HDB	**Tree ID**	M612	**Species**	*Samanea saman*
Date	19 04 2018	**Girth (m)**	0.2	**Height (m)**	18
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	283
Observations: 1) Good health and vigor 2) No significant defects 3) Asymmetric canopy 4) U-shaped bifurcation.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.444469407 N 103.7805902 E Woodlands HDB	**Tree ID**	M613	**Species**	*Cerbera odollam*
Date	19 04 2018	**Girth (m)**	1.5	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	19
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444531101 N 103.78056 E Woodlands HDB	**Tree ID**	M614	**Species**	*Cerbera odollam*
Date	19 04 2018	**Girth (m)**	1.4	**Height (m)**	7
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	16
Observations: 1) Good health and vigor 2) No significant defects 3) Asymmetric lean towards northeast.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable (Planted).					
Recommendations: To remove the tree.					

Location	1.444572092 N 103.7806355 E Woodlands HDB	**Tree ID**	M615	**Species**	*Talipariti tiliaceum*
Date	19 04 2018	**Girth (m)**	0.7-1.0	**Height (m)**	6
Spread (radius) (m)	2-3	**DBH (m)**	0.2-0.3	**Taper (H/D)**	27-19
Observations: 1) Good health and vigor 2) No significant defects.					





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.444662605 N 103.7806025 E Woodlands HDB	**Tree ID**	M616	**Species**	*Ficus variegata*
Date	19 04 2018	**Girth (m)**	1.8	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Asymmetric canopy 5) Low bifurcation.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449421 N 103.778417 E Woodlands HDB	**Tree ID**	M617	**Species**	*Pouteria obovata*
Date	23 05 2018	**Girth (m)**	0.9	**Height (m)**	12

Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	42

Observations:
1) Good health and vigor, No defects. 2) Observation limited by undergrowth.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.449195 N 103.778504 E Woodlands HDB	**Tree ID**	M618	**Species**	*Pouteria obovata*

Date	23 05 2018	**Girth (m)**	0.3	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	42

Observations:
1) Good health and vigor, No defects. 2) Observation limited by undergrowth.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445958 N 103.780395 E Woodlands HDB	**Tree ID**	M619	**Species**	*Neesia synandra*
Date	24 05 2018	**Girth (m)**	0.4	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447728637 N 103.7845708 E Woodlands HDB	**Tree ID**	TR0001	**Species**	*Syzygium polyanthum*
Date	25 04 2018	**Girth (m)**	0.2+0.2	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1+0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects 3) Cluster x2.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447883683 N 103.7847781 E Woodlands HDB	**Tree ID**	TR0002	**Species**	*Acacia auriculiformis*
Date	25 04 2018	**Girth (m)**	1.7	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	33

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447916796 N 103.7845944 E Woodlands HDB	**Tree ID**	TR0003	**Species**	*Acacia auriculiformis*
Date	25 04 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448236349 N 103.7841858 E Woodlands HDB	**Tree ID**	TR0004	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	2.2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	29
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448099647 N 103.7841961 E Woodlands HDB	**Tree ID**	TR0005	**Species**	*Andira inermis*
Date	25 04 2018	**Girth (m)**	1.3	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	19

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448204023 N 103.7840823 E Woodlands HDB	**Tree ID**	TR0006	**Species**	*Andira inermis*
Date	25 04 2018	**Girth (m)**	2.4	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	16
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448096578 N 103.7841199 E Woodlands HDB	**Tree ID**	TR0007	**Species**	*Andira inermis*
Date	25 04 2018	**Girth (m)**	1	**Height (m)**	6
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	19
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

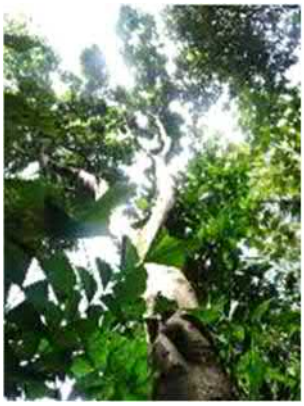
Location	1.447901963 N 103.7840974 E Woodlands HDB	**Tree ID**	TR0008	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447839959 N 103.7840801 E Woodlands HDB	**Tree ID**	TR0009	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	2.4	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	24
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447505544 N 103.783961 E Woodlands HDB	**Tree ID**	TR0010	**Species**	*Andira inermis*
Date	25 04 2018	**Girth (m)**	1.2	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447387017 N 103.7838717 E Woodlands HDB	**Tree ID**	TR0011	**Species**	*Acacia auriculiformis*
Date	25 04 2018	**Girth (m)**	1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	38
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447370616 N 103.7838711 E Woodlands HDB	**Tree ID**	TR0012	**Species**	*Andira inermis*
Date	25 04 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44731906 N 103.7835806 E Woodlands HDB	**Tree ID**	TR0013	**Species**	*Andira inermis*
Date	25 04 2018	**Girth (m)**	1.1	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447400987 N 103.7835998 E Woodlands HDB	**Tree ID**	TR0014	**Species**	*Mangifera odorata*
Date	25 04 2018	**Girth (m)**	1.7	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) V-shaped bifurcation 5) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447512054 N 103.78368 E Woodlands HDB	**Tree ID**	TR0015	**Species**	*Pterocarpus indicus*
Date	25 04 2018	**Girth (m)**	5.1	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.6	**Taper (H/D)**	12

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447521843 N 103.7835963 E Woodlands HDB	**Tree ID**	TR0016	**Species**	*Pouteria obovata*
Date	25 04 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.447540298 N 103.7835978 E Woodlands HDB	**Tree ID**	TR0017	**Species**	*Cyrtophyllum fragrans*
Date	25 04 2018	**Girth (m)**	5	**Height (m)**	16
Spread (radius) (m)	6	**DBH (m)**	1.6	**Taper (H/D)**	10

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447408416 N 103.7834572 E Woodlands HDB	**Tree ID**	TR0018	**Species**	*Mangifera odorata*
Date	25 04 2018	**Girth (m)**	2.65	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447261862 N 103.7834009 E Woodlands HDB	**Tree ID**	TR0019	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.5	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	46
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447192245 N 103.7834224 E Woodlands HDB	**Tree ID**	TR0020	**Species**	*Cinnamomum iners*
Date	25 04 2018	**Girth (m)**	2.1	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44724985 N 103.7833004 E Woodlands HDB	**Tree ID**	TR0021	**Species**	*Cinnamomum iners*
Date	25 04 2018	**Girth (m)**	1.25	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447116492 N 103.7833079 E Woodlands HDB	**Tree ID**	TR0022	**Species**	*Cinnamomum iners*
Date	25 04 2018	**Girth (m)**	1.7	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Low bifurcation.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447071312 N 103.7832303 E Woodlands HDB	**Tree ID**	TR0023	**Species**	*Cinnamomum iners*
Date	25 04 2018	**Girth (m)**	1.5	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Low bifurcation.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447226711 N 103.7832598 E Woodlands HDB	**Tree ID**	TR0024	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.8	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	38
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447203398 N 103.7831884 E Woodlands HDB	**Tree ID**	TR0025	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.2	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	52
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447122356 N 103.7831015 E Woodlands HDB	**Tree ID**	TR0026	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.2	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	52
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447141941 N 103.7829797 E Woodlands HDB	**Tree ID**	TR0027	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	2.4	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	29
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447107833 N 103.7829764 E Woodlands HDB	**Tree ID**	TR0028	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	2.1	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	33

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447092874 N 103.782996 E Woodlands HDB	**Tree ID**	TR0029	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447032974 N 103.7830122 E Woodlands HDB	**Tree ID**	TR0030	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.5	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	17
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447041044 N 103.7830355 E Woodlands HDB	**Tree ID**	TR0031	**Species**	*Litsea firma*
Date	25 04 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447005941 N 103.7829884 E Woodlands HDB	**Tree ID**	TR0032	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446978496 N 103.7830461 E Woodlands HDB	**Tree ID**	TR0033	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	2.1	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	33

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44699166 N 103.7830791 E Woodlands HDB	**Tree ID**	TR0034	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446990999 N 103.7830669 E Woodlands HDB	**Tree ID**	TR0035	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446903897 N 103.7830613 E Woodlands HDB	**Tree ID**	TR0036	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.2	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	52

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446950617 N 103.7830047 E Woodlands HDB	**Tree ID**	TR0037	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.4	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	49

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446914362 N 103.782929 E Woodlands HDB	**Tree ID**	TR0038	**Species**	*Cyrtophyllum fragrans*
Date	25 04 2018	**Girth (m)**	5	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.6	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachments.



Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446774957 N 103.7829156 E Woodlands HDB	**Tree ID**	TR0039	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.6	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	43

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446749134 N 103.7828522 E Woodlands HDB	**Tree ID**	TR0040	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446719953 N 103.7828353 E Woodlands HDB	**Tree ID**	TR0041	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.5	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	46

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446637294 N 103.7827699 E Woodlands HDB	**Tree ID**	TR0042	**Species**	*Lindera lucida*
Date	25 04 2018	**Girth (m)**	0.05	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	157

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446630529 N 103.782739 E Woodlands HDB	**Tree ID**	TR0043	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.4	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	45

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446631937 N 103.7827281 E Woodlands HDB	**Tree ID**	TR0044	**Species**	*Litsea firma*
Date	25 04 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446610344 N 103.7828359 E Woodlands HDB	**Tree ID**	TR0045	**Species**	*Litsea firma*
Date	25 04 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446599874 N 103.7828584 E Woodlands HDB	**Tree ID**	TR0046	**Species**	*Cyrtophyllum fragrans*
Date	25 04 2018	**Girth (m)**	2.1	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	24

Observations:
1) Poor health and vigor 2) Termite infestation 3) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations: To remove the tree.

Location	1.4465407 N 103.7827618 E Woodlands HDB	**Tree ID**	TR0047	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.15	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	55

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446457002 N 103.7826701 E Woodlands HDB	**Tree ID**	TR0048	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.8	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	38

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446439683 N 103.7825774 E Woodlands HDB	**Tree ID**	TR0049	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.2	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	52

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446456871 N 103.782572 E Woodlands HDB	**Tree ID**	TR0050	**Species**	*Falcataria moluccana*
Date	25 04 2018	**Girth (m)**	1.2	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	58
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447991827 N 103.7839038 E Woodlands HDB	**Tree ID**	TR0051	**Species**	*Schefflera actinophylla*
Date	26 04 2018	**Girth (m)**	2.05	**Height (m)**	11
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects 3) Co-dominant trunk.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447969419 N 103.7838478 E Woodlands HDB	**Tree ID**	TR0052	**Species**	*Artocarpus heterophyllus*
Date	26 04 2018	**Girth (m)**	1.25	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44785614 N 103.7838106 E Woodlands HDB	**Tree ID**	TR0053	**Species**	*Andira inermis*
Date	26 04 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44780457 N 103.7838724 E Woodlands HDB	**Tree ID**	TR0054	**Species**	*Ravenala madagascariensis*
Date	26 04 2018	**Girth (m)**	Cluster	**Height (m)**	9
Spread (radius) (m)	5	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447785819 N 103.7838451 E Woodlands HDB	**Tree ID**	TR0055	**Species**	*Macaranga gigantea*
Date	26 04 2018	**Girth (m)**	1.25	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations: To remove the tree.

Location	1.447655424 N 103.7836983 E Woodlands HDB	**Tree ID**	TR0056	**Species**	*Artocarpus heterophyllus*
Date	26 04 2018	**Girth (m)**	2.1	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447708009 N 103.7837464 E Woodlands HDB	**Tree ID**	TR0057	**Species**	*Artocarpus heterophyllus*
Date	26 04 2018	**Girth (m)**	1.1	**Height (m)**	7
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	20

Observations:
1) Poor health and vigor 2) Decay on trunk 3) Die back at canopy.









Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447650791 N 103.7837631 E Woodlands HDB	**Tree ID**	TR0058	**Species**	*Ravenala madagascariensis*
Date	26 04 2018	**Girth (m)**	Cluster	**Height (m)**	9
Spread (radius) (m)	5	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447513323 N 103.7837569 E Woodlands HDB	**Tree ID**	TR0059	**Species**	*Falcataria moluccana*
Date	26 04 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44756506 N 103.7837102 E Woodlands HDB	**Tree ID**	TR0060	**Species**	*Ravenala madagascariensis*
Date	26 04 2018	**Girth (m)**	Cluster	**Height (m)**	9
Spread (radius) (m)	5	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447641927 N 103.7836312 E Woodlands HDB	**Tree ID**	TR0061	**Species**	*Syzygium grande*
Date	26 04 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations: To remove the tree.

Location	1.447981613 N 103.7838147 E Woodlands HDB	**Tree ID**	TR0062	**Species**	*Macaranga gigantea*
Date	26 04 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations: To remove the tree.

Location	1.448034731 N 103.783831 E Woodlands HDB	**Tree ID**	TR0063	**Species**	*Cyrtophyllum fragrans*
Date	26 04 2018	**Girth (m)**	3.4	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) Extensive decay on trunk facing southwest.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations: To remove the tree.

Location	1.448066971 N 103.7838843 E Woodlands HDB	**Tree ID**	TR0064	**Species**	*Cyrtophyllum fragrans*
Date	26 04 2018	**Girth (m)**	3	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations: To remove the tree.

Location	1.448062277 N 103.7838322 E Woodlands HDB	**Tree ID**	TR0065	**Species**	*Cyrtophyllum fragrans*
Date	26 04 2018	**Girth (m)**	2.1	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy 4) V-shaped bifurcation.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations: To remove the tree.

Location	1.448175408 N 103.7837995 E Woodlands HDB	**Tree ID**	TR0066	**Species**	*Mangifera odorata*
Date	26 04 2018	**Girth (m)**	1.25	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	45

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448252639 N 103.7838102 E Woodlands HDB	**Tree ID**	TR0067	**Species**	*Falcataria moluccana*
Date	26 04 2018	**Girth (m)**	3.6	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	17

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448186773 N 103.7839804 E Woodlands HDB	**Tree ID**	TR0068	**Species**	*Ravenala madagascariensis*
Date	26 04 2018	**Girth (m)**	Cluster	**Height (m)**	9
Spread (radius) (m)	5	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448277816 N 103.7840003 E Woodlands HDB	**Tree ID**	TR0069	**Species**	*Falcataria moluccana*
Date	26 04 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448244878 N 103.7841197 E Woodlands HDB	**Tree ID**	TR0070	**Species**	*Falcataria moluccana*
Date	26 04 2018	**Girth (m)**	3	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	21

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448252493 N 103.7840895 E Woodlands HDB	**Tree ID**	TR0071	**Species**	*Andira inermis*
Date	26 04 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448388871 N 103.7840513 E Woodlands HDB	**Tree ID**	TR0072	**Species**	*Andira inermis*
Date	26 04 2018	**Girth (m)**	2.6	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	22

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448518386 N 103.7841026 E Woodlands HDB	**Tree ID**	TR0073	**Species**	*Cyrtophyllum fragrans*
Date	26 04 2018	**Girth (m)**	1.45	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric lean towards northeast.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common. .

Recommendations: To remove the tree.

Location	1.448549365 N 103.7840148 E Woodlands HDB	**Tree ID**	TR0074	**Species**	*Andira inermis*
Date	26 04 2018	**Girth (m)**	1.6	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448634936 N 103.7839204 E Woodlands HDB	**Tree ID**	TR0075	**Species**	*Acacia auriculiformis*
Date	26 04 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448540065 N 103.7838788 E Woodlands HDB	**Tree ID**	TR0076	**Species**	*Acacia auriculiformis*
Date	26 04 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44852578 N 103.7838654 E Woodlands HDB	**Tree ID**	TR0077	**Species**	*Acacia auriculiformis*
Date	26 04 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44851598 N 103.7838651 E Woodlands HDB	**Tree ID**	TR0078	**Species**	*Acacia auriculiformis*
Date	26 04 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448509664 N 103.7837693 E Woodlands HDB	**Tree ID**	TR0079	**Species**	*Andira inermis*
Date	26 04 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448392913 N 103.7837472 E Woodlands HDB	**Tree ID**	TR0080	**Species**	*Falcataria moluccana*
Date	26 04 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44851347 N 103.7837787 E Woodlands HDB	**Tree ID**	TR0081	**Species**	*Aidia densiflora*
Date	26 04 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.4484912 N 103.7838253 E Woodlands HDB	**Tree ID**	TR0082	**Species**	*Acacia auriculiformis*
Date	26 04 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448484899 N 103.7838376 E Woodlands HDB	**Tree ID**	TR0083	**Species**	*Acacia auriculiformis*
Date	26 04 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448425875 N 103.7838803 E Woodlands HDB	**Tree ID**	TR0084	**Species**	*Acacia auriculiformis*
Date	26 04 2018	**Girth (m)**	2.5	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	25

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448337312 N 103.7838435 E Woodlands HDB	**Tree ID**	TR0085	**Species**	*Cyrtophyllum fragrans*
Date	26 04 2018	**Girth (m)**	1.6	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	18

Observations:
1) Poor health and vigor 2) Dying 3) Total canopy defoliation.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448348271 N 103.7838356 E Woodlands HDB	**Tree ID**	TR0086	**Species**	*Macaranga gigantea*
Date	26 04 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) Decay on primary branch 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448339488 N 103.7838415 E Woodlands HDB	**Tree ID**	TR0087	**Species**	*Macaranga gigantea*
Date	26 04 2018	**Girth (m)**	1.85	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Multiple attachment.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447676142 N 103.782999 E Woodlands HDB	**Tree ID**	TR0088	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	16
Spread (radius) (m)	5	**DBH (m)**	0.4	**Taper (H/D)**	39

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447685243 N 103.7830904 E Woodlands HDB	**Tree ID**	TR0089	**Species**	*Spathodea campanulata*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	37

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447612046 N 103.7830801 E Woodlands HDB	**Tree ID**	TR0090	**Species**	*Macaranga gigantea*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447634762 N 103.7831189 E Woodlands HDB	**Tree ID**	TR0091	**Species**	*Macaranga gigantea*
Date	02 05 2018	**Girth (m)**	1.15	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447572636 N 103.7831548 E Woodlands HDB	**Tree ID**	TR0092	**Species**	*Senna siamea*
Date	02 05 2018	**Girth (m)**	1.1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	46

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Termite infestation.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447380222 N 103.7832353 E Woodlands HDB	**Tree ID**	TR0093	**Species**	*Spathodea campanulata*
Date	02 05 2018	**Girth (m)**	1.6	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447362909 N 103.7833326 E Woodlands HDB	**Tree ID**	TR0094	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.5	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	29

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447416512 N 103.7833218 E Woodlands HDB	**Tree ID**	TR0095	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.8	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44751525 N 103.7833658 E Woodlands HDB	**Tree ID**	TR0096	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447531309 N 103.7833111 E Woodlands HDB	**Tree ID**	TR0097	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.5	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	17

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447561084 N 103.7832733 E Woodlands HDB	**Tree ID**	TR0098	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	25

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44761894 N 103.783373 E Woodlands HDB	**Tree ID**	TR0099	**Species**	*Cecropia pachystachya*
Date	02 05 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) Invasive species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447584694 N 103.7832146 E Woodlands HDB	**Tree ID**	TR0100	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447633677 N 103.783405 E Woodlands HDB	**Tree ID**	TR0101	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447639513 N 103.7834101 E Woodlands HDB	**Tree ID**	TR0102	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.15	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	38

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447745282 N 103.7833024 E Woodlands HDB	**Tree ID**	TR0103	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.8+1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6+0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447912104 N 103.7833293 E Woodlands HDB	**Tree ID**	TR0104	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447908597 N 103.7834512 E Woodlands HDB	**Tree ID**	TR0105	**Species**	*Polyalthia longifolia*
Date	02 05 2018	**Girth (m)**	1.8	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44806713 N 103.7836708 E Woodlands HDB	**Tree ID**	TR0106	**Species**	*Macaranga gigantea*
Date	02 05 2018	**Girth (m)**	1.4	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448108916 N 103.7836208 E Woodlands HDB	**Tree ID**	TR0107	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	2.7	**Height (m)**	12
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	14

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448148669 N 103.7835288 E Woodlands HDB	**Tree ID**	TR0108	**Species**	*Andira inermis*
Date	02 05 2018	**Girth (m)**	1.05	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448015628 N 103.7834783 E Woodlands HDB	**Tree ID**	TR0109	**Species**	*Andira inermis*
Date	02 05 2018	**Girth (m)**	1.05	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447975591 N 103.7835227 E Woodlands HDB	**Tree ID**	TR0110	**Species**	*Andira inermis*
Date	02 05 2018	**Girth (m)**	1.05	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	30
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447915971 N 103.7833409 E Woodlands HDB	**Tree ID**	TR0111	**Species**	*Artocarpus heterophyllus*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
1) Good health 2) Decay on trunk at 2.0m of height facing to southeast 3) Multiple attachment 4) Assessment limited by climbers.











Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447959153 N 103.7831915 E Woodlands HDB	**Tree ID**	TR0112	**Species**	*Andira inermis*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447975154 N 103.7831102 E Woodlands HDB	**Tree ID**	TR0113	**Species**	*Andira inermis*
Date	02 05 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44796469 N 103.7831014 E Woodlands HDB	**Tree ID**	TR0114	**Species**	*Syzygium grande*
Date	02 05 2018	**Girth (m)**	1.4	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	36

Observations:
1) Good health 2 and vigor) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447969597 N 103.7830688 E Woodlands HDB	**Tree ID**	TR0115	**Species**	*Cocos nucifera*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	44

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447884164 N 103.7830702 E Woodlands HDB	**Tree ID**	TR0116	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.6	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447880119 N 103.7829906 E Woodlands HDB	**Tree ID**	TR0117	**Species**	*Mangifera indica*
Date	02 05 2018	**Girth (m)**	1.55	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447932558 N 103.7829537 E Woodlands HDB	**Tree ID**	TR0118	**Species**	*Andira inermis*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	37

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447859054 N 103.7829118 E Woodlands HDB	**Tree ID**	TR0119	**Species**	*Mangifera indica*
Date	02 05 2018	**Girth (m)**	1.9	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	26

Observations:
1) Good health and vigor 2) Decay on branch 3) Root flare obvious 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.4478719 N 103.7828485 E Woodlands HDB	**Tree ID**	TR0120	**Species**	*Mangifera indica*
Date	02 05 2018	**Girth (m)**	1.6	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447894381 N 103.7828443 E Woodlands HDB	**Tree ID**	TR0121	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	24
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447846604 N 103.7828152 E Woodlands HDB	**Tree ID**	TR0122	**Species**	*Acacia auriculiformis*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	28

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447749873 N 103.7826532 E Woodlands HDB	**Tree ID**	TR0123	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	4	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.3	**Taper (H/D)**	16

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447407218 N 103.7827284 E Woodlands HDB	**Tree ID**	TR0124	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	4.5	**Height (m)**	22
Spread (radius) (m)	6	**DBH (m)**	1.4	**Taper (H/D)**	15

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447338717 N 103.782675 E Woodlands HDB	**Tree ID**	TR0125	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447314813 N 103.7827513 E Woodlands HDB	**Tree ID**	TR0126	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447323546 N 103.7827396 E Woodlands HDB	**Tree ID**	TR0127	**Species**	*Cecropia pachystachya*
Date	02 05 2018	**Girth (m)**	1.0+1.0	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.3+0.3	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Invasive species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447289292 N 103.7827331 E Woodlands HDB	**Tree ID**	TR0128	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	3.2	**Height (m)**	18
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	18

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447314447 N 103.7826986 E Woodlands HDB	**Tree ID**	TR0129	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447328635 N 103.7826441 E Woodlands HDB	**Tree ID**	TR0130	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447327645 N 103.7826597 E Woodlands HDB	**Tree ID**	TR0131	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	48
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447297088 N 103.7826643 E Woodlands HDB	**Tree ID**	TR0132	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447336932 N 103.7825836 E Woodlands HDB	**Tree ID**	TR0133	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447400314 N 103.7826198 E Woodlands HDB	**Tree ID**	TR0134	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	48

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447399821 N 103.7826452 E Woodlands HDB	**Tree ID**	TR0135	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447424459 N 103.7825779 E Woodlands HDB	**Tree ID**	TR0136	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.4	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	36

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447476558 N 103.7824087 E Woodlands HDB	**Tree ID**	TR0137	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2.2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	29

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44747961 N 103.7824376 E Woodlands HDB	**Tree ID**	TR0138	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	52

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447696341 N 103.7824133 E Woodlands HDB	**Tree ID**	TR0139	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	4	**Height (m)**	22
Spread (radius) (m)	6	**DBH (m)**	1.3	**Taper (H/D)**	17

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447727854 N 103.7823991 E Woodlands HDB	**Tree ID**	TR0140	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2.3	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447733447 N 103.782387 E Woodlands HDB	**Tree ID**	TR0141	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447732176 N 103.7823359 E Woodlands HDB	**Tree ID**	TR0142	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447703205 N 103.782342 E Woodlands HDB	**Tree ID**	TR0143	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.4	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	27

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447679766 N 103.7823693 E Woodlands HDB	**Tree ID**	TR0144	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	3	**Height (m)**	22
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	23

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447694921 N 103.7822719 E Woodlands HDB	**Tree ID**	TR0145	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447679447 N 103.7823807 E Woodlands HDB	**Tree ID**	TR0146	**Species**	*Pouteria obovata*
Date	02 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447897345 N 103.7822253 E Woodlands HDB	**Tree ID**	TR0147	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2.4	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	26

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447907397 N 103.7822376 E Woodlands HDB	**Tree ID**	TR0148	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	25

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447704543 N 103.7820825 E Woodlands HDB	**Tree ID**	TR0149	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	3	**Height (m)**	22
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	23

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447617156 N 103.7820561 E Woodlands HDB	**Tree ID**	TR0150	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447550518 N 103.7821399 E Woodlands HDB	**Tree ID**	TR0151	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	4	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.3	**Taper (H/D)**	16

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447443318 N 103.7821108 E Woodlands HDB	**Tree ID**	TR0152	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	24

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447373629 N 103.7822055 E Woodlands HDB	**Tree ID**	TR0153	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44729359 N 103.7822703 E Woodlands HDB	**Tree ID**	TR0154	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44731779 N 103.7822568 E Woodlands HDB	**Tree ID**	TR0155	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447302444 N 103.7822704 E Woodlands HDB	**Tree ID**	TR0156	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447376228 N 103.7822943 E Woodlands HDB	**Tree ID**	TR0157	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2.5	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	25
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447420807 N 103.7822988 E Woodlands HDB	**Tree ID**	TR0158	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2.1	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	24

Observations:
Annex 5, Expendable Species.



Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447338694 N 103.7823498 E Woodlands HDB	**Tree ID**	TR0159	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	48

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44728431 N 103.7823434 E Woodlands HDB	**Tree ID**	TR0160	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447267423 N 103.7823845 E Woodlands HDB	**Tree ID**	TR0161	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447164681 N 103.7821769 E Woodlands HDB	**Tree ID**	TR0162	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447164445 N 103.7822033 E Woodlands HDB	**Tree ID**	TR0163	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447127764 N 103.7822711 E Woodlands HDB	**Tree ID**	TR0164	**Species**	*Spathodea campanulata*
Date	02 05 2018	**Girth (m)**	1.4	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	27

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447133647 N 103.7822921 E Woodlands HDB	**Tree ID**	TR0165	**Species**	*Spathodea campanulata*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447031331 N 103.7823628 E Woodlands HDB	**Tree ID**	TR0166	**Species**	*Spathodea campanulata*
Date	02 05 2018	**Girth (m)**	2.1	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	24

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447005133 N 103.7823797 E Woodlands HDB	**Tree ID**	TR0167	**Species**	*Spathodea campanulata*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447031964 N 103.7823977 E Woodlands HDB	**Tree ID**	TR0168	**Species**	*Spathodea campanulata*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447011949 N 103.7824266 E Woodlands HDB	**Tree ID**	TR0169	**Species**	*Spathodea campanulata*
Date	02 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447049927 N 103.782514 E Woodlands HDB	**Tree ID**	TR0170	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447140404 N 103.782659 E Woodlands HDB	**Tree ID**	TR0171	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447192861 N 103.782584 E Woodlands HDB	**Tree ID**	TR0172	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	48

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447221395 N 103.7825716 E Woodlands HDB	**Tree ID**	TR0173	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.3	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	48
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447238256 N 103.7825867 E Woodlands HDB	**Tree ID**	TR0174	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development construction.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447239086 N 103.7825547 E Woodlands HDB	**Tree ID**	TR0175	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	57

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447270042 N 103.7825586 E Woodlands HDB	**Tree ID**	TR0176	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447201151 N 103.7825041 E Woodlands HDB	**Tree ID**	TR0177	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.1	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	57

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447248466 N 103.7825069 E Woodlands HDB	**Tree ID**	TR0178	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.4	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	45

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447248184 N 103.7824793 E Woodlands HDB	**Tree ID**	TR0179	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447205865 N 103.7824462 E Woodlands HDB	**Tree ID**	TR0180	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447177894 N 103.7824447 E Woodlands HDB	**Tree ID**	TR0181	**Species**	*Falcataria moluccana*
Date	02 05 2018	**Girth (m)**	1.05	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446876281 N 103.7827838 E Woodlands HDB	**Tree ID**	TR0182	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	3.9	**Height (m)**	18
Spread (radius) (m)	6	**DBH (m)**	1.2	**Taper (H/D)**	15

Observations:
1) Good health and vigor 2) No significant defects 3) Asymmetric canopy.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44674587 N 103.7827042 E Woodlands HDB	**Tree ID**	TR0183	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	2.1+2.1+1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7+0.7+0.6	**Taper (H/D)**	30+30+33

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachment.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446803268 N 103.7827765 E Woodlands HDB	**Tree ID**	TR0184	**Species**	*Santiria laevigata*
Date	03 05 2018	**Girth (m)**	0.05	**Height (m)**	1
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446892793 N 103.7827648 E Woodlands HDB	**Tree ID**	TR0185	**Species**	*Endospermum diadenum*
Date	03 05 2018	**Girth (m)**	0.05	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	107

Observations:

1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:

1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446979919 N 103.782753 E Woodlands HDB	**Tree ID**	TR0186	**Species**	*Pouteria obovata*
Date	03 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Average health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446984683 N 103.7827706 E Woodlands HDB	**Tree ID**	TR0187	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	2.9+2.9	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.9+0.9	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) Exposed deadwood on trunk 3) Co-dominant trunk.



Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446982604 N 103.7827359 E Woodlands HDB	**Tree ID**	TR0188	**Species**	*Falcataria moluccana*
Date	03 05 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44711712 N 103.7826976 E Woodlands HDB	**Tree ID**	TR0189	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	2.5	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	23

Observations:
1) Good health and vigor 2) Large decay at tree base facing southwest.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446968393 N 103.7826498 E Woodlands HDB	**Tree ID**	TR0190	**Species**	*Spathodea campanulata*
Date	03 05 2018	**Girth (m)**	2.4	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	18

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446820152 N 103.7824065 E Woodlands HDB	**Tree ID**	TR0191	**Species**	*Lindera lucida*
Date	03 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446819659 N 103.7823753 E Woodlands HDB	**Tree ID**	TR0192	**Species**	*Rhodamnia cinerea*
Date	03 05 2018	**Girth (m)**	1.4	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
1) Average health and vigor 2) Extensive decay on trunk.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446786369 N 103.7823208 E Woodlands HDB	**Tree ID**	TR0193	**Species**	*Macaranga gigantea*
Date	03 05 2018	**Girth (m)**	1.3	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446799446 N 103.7822872 E Woodlands HDB	**Tree ID**	TR0193A	**Species**	*Spathodea campanulata*
Date	03 05 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446924034 N 103.7822356 E Woodlands HDB	**Tree ID**	TR0194	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	2.6	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446684586 N 103.782182 E Woodlands HDB	**Tree ID**	TR0196	**Species**	*Macaranga hypoleuca*
Date	03 05 2018	**Girth (m)**	1.3	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	39

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446687345 N 103.7821059 E Woodlands HDB	**Tree ID**	TR0197	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	4.1	**Height (m)**	16
Spread (radius) (m)	6	**DBH (m)**	1.3	**Taper (H/D)**	12

Observations:
1) Good health and vigor 2) No significant defects 3) Co-dominant trunk 4) Ficus benjamina growing on tree.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446525263 N 103.7820105 E Woodlands HDB	**Tree ID**	TR0198	**Species**	*Lindera lucida*
Date	03 05 2018	**Girth (m)**	0.25	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446587407 N 103.7819224 E Woodlands HDB	**Tree ID**	TR0199	**Species**	*Litsea firma*
Date	03 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446619313 N 103.7819172 E Woodlands HDB	**Tree ID**	TR0200	**Species**	*Bauhinia semibifida var. semibifida*
Date	03 05 2018	**Girth (m)**	Climber	**Height (m)**	NA
Spread (radius) (m)	NA	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446681783 N 103.7819099 E Woodlands HDB	**Tree ID**	TR0201	**Species**	*Ficus aurata*
Date	03 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446789792 N 103.7818488 E Woodlands HDB	**Tree ID**	TR0202	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27

Observations:
1) Average health and vigor 2) Minor die back at canopy 3) Multiple branch attachment.



Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446704179 N 103.7818713 E Woodlands HDB	**Tree ID**	TR0203	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	3.15	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) Cavity on branch 3) Co-dominant branch 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development construction.

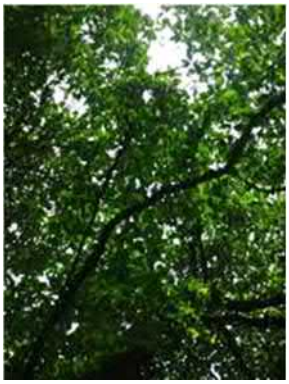
Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446723882 N 103.7818748 E Woodlands HDB	**Tree ID**	TR0204	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	2.55	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.



Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446726081 N 103.7818573 E Woodlands HDB	**Tree ID**	TR0205	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	1.95	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	29

Observations:
1) Good health and vigor 2) Large decay at tree base due to past co-dominant trunk failure.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446742595 N 103.781849 E Woodlands HDB	**Tree ID**	TR0206	**Species**	*Oncosperma tigillaria*
Date	03 05 2018	**Girth (m)**	0.5	**Height (m)**	4
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446761431 N 103.7818628 E Woodlands HDB	**Tree ID**	TR0207	**Species**	*Oncosperma tigillaria*
Date	03 05 2018	**Girth (m)**	0.5	**Height (m)**	4
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446746624 N 103.7818443 E Woodlands HDB	**Tree ID**	TR0208	**Species**	*Litsea firma*
Date	03 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44676839 N 103.7818765 E Woodlands HDB	**Tree ID**	TR0209	**Species**	*Ficus aurata*
Date	03 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446777987 N 103.7818987 E Woodlands HDB	**Tree ID**	TR0210	**Species**	*Falcataria moluccana*
Date	03 05 2018	**Girth (m)**	3.8	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.2	**Taper (H/D)**	17

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447177909 N 103.7817999 E Woodlands HDB	**Tree ID**	TR0211	**Species**	*Spathodea campanulata*
Date	03 05 2018	**Girth (m)**	1.6	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447046427 N 103.7820092 E Woodlands HDB	**Tree ID**	TR0212	**Species**	*Spathodea campanulata*
Date	03 05 2018	**Girth (m)**	1.4	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	22

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447230868 N 103.7818978 E Woodlands HDB	**Tree ID**	TR0213	**Species**	*Lindera lucida*
Date	03 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446821555 N 103.7818551 E Woodlands HDB	**Tree ID**	TR0214	**Species**	*Macaranga gigantea*
Date	03 05 2018	**Girth (m)**	1.5	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	29

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446818124 N 103.7818577 E Woodlands HDB	**Tree ID**	TR0215	**Species**	*Litsea firma*
Date	03 05 2018	**Girth (m)**	0.15	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	84

Observations:
1) Good health and vigor 2) No significant defects.



Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446812384 N 103.7818399 E Woodlands HDB	**Tree ID**	TR0216	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446802234 N 103.7818253 E Woodlands HDB	**Tree ID**	TR0217	**Species**	*Oncosperma tigillaria*
Date	03 05 2018	**Girth (m)**	Cluster	**Height (m)**	7
Spread (radius) (m)	4	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446751449 N 103.7817965 E Woodlands HDB	**Tree ID**	TR0218	**Species**	*Litsea firma*
Date	03 05 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446736788 N 103.7818184 E Woodlands HDB	**Tree ID**	TR0219	**Species**	*Ixonanthes reticulata*
Date	03 05 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446707882 N 103.7817272 E Woodlands HDB	**Tree ID**	TR0220	**Species**	*Bauhinia semibifida var. semibifida*
Date	03 05 2018	**Girth (m)**	Climber	**Height (m)**	NA
Spread (radius) (m)	NA	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446761395 N 103.7816514 E Woodlands HDB	**Tree ID**	TR0221	**Species**	*Glochidion lutescens*
Date	03 05 2018	**Girth (m)**	0.2+0.15+0.1	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1+0.05+0.03	**Taper (H/D)**	79+105+157

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446675456 N 103.7816469 E Woodlands HDB	**Tree ID**	TR0222	**Species**	*Ficus aurata*
Date	03 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446661345 N 103.7816147 E Woodlands HDB	**Tree ID**	TR0223	**Species**	*Macaranga recurvata*
Date	03 05 2018	**Girth (m)**	0.3	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446634858 N 103.7815763 E Woodlands HDB	**Tree ID**	TR0224	**Species**	*Lindera lucida*
Date	03 05 2018	**Girth (m)**	0.15	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.05	**Taper (H/D)**	105

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446623922 N 103.7816078 E Woodlands HDB	**Tree ID**	TR0225	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446615255 N 103.7816358 E Woodlands HDB	**Tree ID**	TR0226	**Species**	*Ixonanthes reticulata*
Date	03 05 2018	**Girth (m)**	3.5	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446610046 N 103.7816664 E Woodlands HDB	**Tree ID**	TR0227	**Species**	*Cyrtophyllum fragrans*
Date	03 05 2018	**Girth (m)**	2.6	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple branch attachment.






Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446614096 N 103.7816694 E Woodlands HDB	**Tree ID**	TR0228	**Species**	*Bauhinia semibifida var. semibifida*
Date	03 05 2018	**Girth (m)**	Climber	**Height (m)**	NA
Spread (radius) (m)	NA	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446695005 N 103.7818494 E Woodlands HDB	**Tree ID**	TR0229	**Species**	*Litsea firma*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44669257 N 103.7818515 E Woodlands HDB	**Tree ID**	TR0230	**Species**	*Litsea firma*
Date	04 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development construction.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446677992 N 103.7819071 E Woodlands HDB	**Tree ID**	TR0231	**Species**	*Cyathea latebrosa*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446683405 N 103.7819076 E Woodlands HDB	**Tree ID**	TR0232	**Species**	*Cyathea latebrosa*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	1.8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446667888 N 103.7818814 E Woodlands HDB	**Tree ID**	TR0233	**Species**	*Ficus aurata*
Date	04 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446648825 N 103.7818133 E Woodlands HDB	**Tree ID**	TR0234	**Species**	*Litsea firma*
Date	04 05 2018	**Girth (m)**	0.3	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446624816 N 103.7818063 E Woodlands HDB	**Tree ID**	TR0235	**Species**	*Litsea firma*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446717176 N 103.7818209 E Woodlands HDB	**Tree ID**	TR0236	**Species**	*Cyathea latebrosa*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	1
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	16

Observations:
1) Average health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446697205 N 103.7818037 E Woodlands HDB	**Tree ID**	TR0237	**Species**	*Litsea firma*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446650733 N 103.7817396 E Woodlands HDB	**Tree ID**	TR0238	**Species**	*Lindera lucida*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	47

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446668224 N 103.7817474 E Woodlands HDB	**Tree ID**	TR0239	**Species**	*Oncosperma tigillaria*
Date	04 05 2018	**Girth (m)**	0.5	**Height (m)**	3
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	19

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44667315 N 103.7817423 E Woodlands HDB	**Tree ID**	TR0240	**Species**	*Oncosperma tigillaria*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446683589 N 103.7817615 E Woodlands HDB	**Tree ID**	TR0241	**Species**	*Litsea firma*
Date	04 05 2018	**Girth (m)**	0.05	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	251

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446682038 N 103.7817496 E Woodlands HDB	**Tree ID**	TR0242	**Species**	*Cyathea latebrosa*
Date	04 05 2018	**Girth (m)**	0.3	**Height (m)**	1.2
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	13
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446682738 N 103.781719 E Woodlands HDB	**Tree ID**	TR0243	**Species**	*Cyathea latebrosa*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	1.2
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	19
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446693516 N 103.7817441 E Woodlands HDB	**Tree ID**	TR0244	**Species**	*Oncosperma tigillaria*
Date	04 05 2018	**Girth (m)**	0.5	**Height (m)**	4
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446683476 N 103.7817797 E Woodlands HDB	**Tree ID**	TR0245	**Species**	*Pinanga cf. malaiana*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	31
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Endangered.					
Recommendations: To remove the tree.					

Location	1.446769418 N 103.7818027 E Woodlands HDB	**Tree ID**	TR0246	**Species**	*Litsea firma*
Date	04 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects 3) Clusters within proximity.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446771158 N 103.7817755 E Woodlands HDB	**Tree ID**	TR0247	**Species**	*Lindera lucida*
Date	04 05 2018	**Girth (m)**	0.2	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446797883 N 103.7817883 E Woodlands HDB	**Tree ID**	TR0248	**Species**	*Cyathea latebrosa*
Date	04 05 2018	**Girth (m)**	0.2-0.3	**Height (m)**	1.2-1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.06-0.09	**Taper (H/D)**	19-13

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters x8.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446688137 N 103.7818032 E Woodlands HDB	**Tree ID**	TR0249	**Species**	*Santiria laevigata*
Date	04 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445556526 N 103.7820471 E Woodlands HDB	**Tree ID**	TR0250	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44555354 N 103.7820358 E Woodlands HDB	**Tree ID**	TR0251	**Species**	*Ficus vasculosa*
Date	07 05 2018	**Girth (m)**	0.65	**Height (m)**	9
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	44
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Endangered.					
Recommendations: To remove the tree.					

Location	1.445614023 N 103.7819833 E Woodlands HDB	**Tree ID**	TR0252	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	2.9	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) Large exposed deadwood on trunk facing south 3) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445606039 N 103.7819972 E Woodlands HDB	**Tree ID**	TR0253	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	1.6	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	35

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445638092 N 103.7819528 E Woodlands HDB	**Tree ID**	TR0254	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	2.7	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) Large exposed deadwood on trunk facing SW.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445669112 N 103.7820441 E Woodlands HDB	**Tree ID**	TR0255	**Species**	*Litsea firma*
Date	07 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters with in proximity.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445689606 N 103.7820458 E Woodlands HDB	**Tree ID**	TR0256	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44567681 N 103.7820234 E Woodlands HDB	**Tree ID**	TR0257	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445726128 N 103.7820256 E Woodlands HDB	**Tree ID**	TR0258	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445750092 N 103.7819538 E Woodlands HDB	**Tree ID**	TR0259	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters with in proximity.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445745457 N 103.7819182 E Woodlands HDB	**Tree ID**	TR0260	**Species**	*Litsea firma*
Date	07 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects 3) Clusters with in proximity.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.445732043 N 103.7818207 E Woodlands HDB	**Tree ID**	TR0261	**Species**	*Ficus microcarpa*
Date	07 05 2018	**Girth (m)**	Cluster	**Height (m)**	20
Spread (radius) (m)	10	**DBH (m)**	NA	**Taper (H/D)**	NA
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.445673711 N 103.7817755 E Woodlands HDB	**Tree ID**	TR0262	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	3	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	19

Observations:
1) Average health and vigor 2) Past canopy failure resulting in asymmetric crown 3) Strangled by Ficus(TR0261).






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445694106 N 103.7816752 E Woodlands HDB	**Tree ID**	TR0263	**Species**	*Adinandra dumosa*
Date	07 05 2018	**Girth (m)**	1.6	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	16

Observations:
1) Poor health and vigor 2) Die back at canopy 3) V-shaped bifurcation 4) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445773632 N 103.781661 E Woodlands HDB	**Tree ID**	TR0264	**Species**	*Hevea brasiliensis*
Date	07 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445753846 N 103.7814899 E Woodlands HDB	**Tree ID**	TR0265	**Species**	*Chassalia curviflora*
Date	07 05 2018	**Girth (m)**	0.05	**Height (m)**	1
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Endangered.					
Recommendations: To remove the tree.					

Location	1.445756082 N 103.7815148 E Woodlands HDB	**Tree ID**	TR0266	**Species**	*Litsea firma*
Date	07 05 2018	**Girth (m)**	0.05	**Height (m)**	1.8
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	113

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445743392 N 103.7814488 E Woodlands HDB	**Tree ID**	TR0267	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	3	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445823384 N 103.7815304 E Woodlands HDB	**Tree ID**	TR0268	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: 1) Good health and vigor 2) No significant defects 3) Low bifurcation.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.445863594 N 103.7815014 E Woodlands HDB	**Tree ID**	TR0269	**Species**	*Hevea brasiliensis*
Date	07 05 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445958863 N 103.7815546 E Woodlands HDB	**Tree ID**	TR0270	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44601464 N 103.7814417 E Woodlands HDB	**Tree ID**	TR0271	**Species**	*Litsea firma*
Date	07 05 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446135184 N 103.7815497 E Woodlands HDB	**Tree ID**	TR0272	**Species**	*Litsea firma*
Date	07 05 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445963104 N 103.781557 E Woodlands HDB	**Tree ID**	TR0273	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.7	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	37
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.445982642 N 103.7816517 E Woodlands HDB	**Tree ID**	TR0274	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446022071 N 103.7816642 E Woodlands HDB	**Tree ID**	TR0275	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	2.5	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	25
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446034985 N 103.7817175 E Woodlands HDB	**Tree ID**	TR0276	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445991123 N 103.7817231 E Woodlands HDB	**Tree ID**	TR0277	**Species**	*Acacia auriculiformis*
Date	07 05 2018	**Girth (m)**	1.1	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	29

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445927839 N 103.7817464 E Woodlands HDB	**Tree ID**	TR0278	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	0.3	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446042786 N 103.7818878 E Woodlands HDB	**Tree ID**	TR0279	**Species**	*Acacia auriculiformis*
Date	07 05 2018	**Girth (m)**	1.1	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	29
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446044731 N 103.7819581 E Woodlands HDB	**Tree ID**	TR0280	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445976458 N 103.7819772 E Woodlands HDB	**Tree ID**	TR0281	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	0.1	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.445968031 N 103.7819429 E Woodlands HDB	**Tree ID**	TR0282	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	1.2	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445977598 N 103.7820064 E Woodlands HDB	**Tree ID**	TR0283	**Species**	*Ficus variegata*
Date	07 05 2018	**Girth (m)**	1.3	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	19

Observations:
1) Average health and vigor 2) Low bifurcation 3) Die back at canopy 4) Growing on drain.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445883173 N 103.7820584 E Woodlands HDB	**Tree ID**	TR0284	**Species**	*Artocarpus integer*
Date	07 05 2018	**Girth (m)**	1.4	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	27

Observations:
1) Poor health and vigor 2) Decay at tree base 3) Die back at canopy.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445937377 N 103.78213 E Woodlands HDB	**Tree ID**	TR0285	**Species**	*Morinda elliptica*
Date	07 05 2018	**Girth (m)**	1.6	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	16
Observations: 1) Good health and vigor 2) Decay on primary branch 3) Asymmetric canopy.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Not listed.					
Recommendations: To remove the tree.					

Location	1.445927686 N 103.7821719 E Woodlands HDB	**Tree ID**	TR0286	**Species**	*Nephelium lappaceum*
Date	07 05 2018	**Girth (m)**	1.15	**Height (m)**	7
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	19

Observations:
1) Good health and vigor 2) Decay on branches.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered (planted).

Recommendations: To remove the tree.

Location	1.445945572 N 103.7822397 E Woodlands HDB	**Tree ID**	TR0287	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445936375 N 103.782272 E Woodlands HDB	**Tree ID**	TR0288	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.445898485 N 103.7822981 E Woodlands HDB	**Tree ID**	TR0289	**Species**	*Mangifera indica*
Date	07 05 2018	**Girth (m)**	1.5	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) Decay on primary branch 3) Multiple branch attachment.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.445814602 N 103.7821207 E Woodlands HDB	**Tree ID**	TR0290	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	2.7	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Strangled by Ficus microcarpa.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.445749823 N 103.7820682 E Woodlands HDB	**Tree ID**	TR0291	**Species**	*Oncosperma tigillaria*
Date	07 05 2018	**Girth (m)**	0.3	**Height (m)**	1.5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	16

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446112634 N 103.7819664 E Woodlands HDB	**Tree ID**	TR0292	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446113264 N 103.7818004 E Woodlands HDB	**Tree ID**	TR0293	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446095402 N 103.7817908 E Woodlands HDB	**Tree ID**	TR0294	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446183709 N 103.7816862 E Woodlands HDB	**Tree ID**	TR0295	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446197188 N 103.7817971 E Woodlands HDB	**Tree ID**	TR0296	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.05	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	60
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446272659 N 103.7819115 E Woodlands HDB	**Tree ID**	TR0297	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446284152 N 103.7818903 E Woodlands HDB	**Tree ID**	TR0298	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.1+0.9	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.35+0.29	**Taper (H/D)**	46+56
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446293881 N 103.7818014 E Woodlands HDB	**Tree ID**	TR0299	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.2	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	52

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44628744 N 103.7817927 E Woodlands HDB	**Tree ID**	TR0300	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.4	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	45
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446285676 N 103.781797 E Woodlands HDB	**Tree ID**	TR0323	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446315704 N 103.7817938 E Woodlands HDB	**Tree ID**	TR0324	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446349515 N 103.7817803 E Woodlands HDB	**Tree ID**	TR0325	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.44633337 N 103.7818183 E Woodlands HDB	**Tree ID**	TR0326	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.3	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	48
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446388776 N 103.7817479 E Woodlands HDB	**Tree ID**	TR0327	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	2.5	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	23
Observations: 1) Good health and vigor 2) Decay on trunk facing W.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.44642233 N 103.7816902 E Woodlands HDB	**Tree ID**	TR0328	**Species**	*Cyrtophyllum fragrans*
Date	07 05 2018	**Girth (m)**	3.1	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446466023 N 103.7818079 E Woodlands HDB	**Tree ID**	TR0329	**Species**	*Araucaria heterophylla*
Date	07 05 2018	**Girth (m)**	1.1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	46

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446473852 N 103.7818212 E Woodlands HDB	**Tree ID**	TR0330	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446515354 N 103.7818795 E Woodlands HDB	**Tree ID**	TR0331	**Species**	*Dillenia suffruticosa*
Date	07 05 2018	**Girth (m)**	1	**Height (m)**	4
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	13
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446554551 N 103.7817846 E Woodlands HDB	**Tree ID**	TR0332	**Species**	*Macaranga gigantea*
Date	07 05 2018	**Girth (m)**	1.3	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446450929 N 103.781759 E Woodlands HDB	**Tree ID**	TR0333	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	1	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	28

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446504008 N 103.7817974 E Woodlands HDB	**Tree ID**	TR0334	**Species**	*Litsea firma*
Date	07 05 2018	**Girth (m)**	0.05	**Height (m)**	2.5
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	157

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446464714 N 103.7816776 E Woodlands HDB	**Tree ID**	TR0335	**Species**	*Falcataria moluccana*
Date	07 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44637821 N 103.7816118 E Woodlands HDB	**Tree ID**	TR0336	**Species**	*Litsea firma*
Date	07 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446366137 N 103.7816066 E Woodlands HDB	**Tree ID**	TR0337	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	0.3	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	84

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44636288 N 103.7815882 E Woodlands HDB	**Tree ID**	TR0338	**Species**	*Litsea firma*
Date	07 05 2018	**Girth (m)**	0.25	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	75

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446300107 N 103.7815302 E Woodlands HDB	**Tree ID**	TR0339	**Species**	*Lindera lucida*
Date	07 05 2018	**Girth (m)**	0.4	**Height (m)**	8
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446063084 N 103.7823413 E Woodlands HDB	**Tree ID**	TR0340	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446094365 N 103.7823268 E Woodlands HDB	**Tree ID**	TR0341	**Species**	*Araucaria heterophylla*
Date	08 05 2018	**Girth (m)**	1.2	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446113011 N 103.7822698 E Woodlands HDB	**Tree ID**	TR0342	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446120899 N 103.7823119 E Woodlands HDB	**Tree ID**	TR0343	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.3	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	73

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446138113 N 103.7823815 E Woodlands HDB	**Tree ID**	TR0344	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446134714 N 103.7822905 E Woodlands HDB	**Tree ID**	TR0345	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	2.4	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446228037 N 103.7823551 E Woodlands HDB	**Tree ID**	TR0346	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	2.4	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	26

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446334647 N 103.7823467 E Woodlands HDB	**Tree ID**	TR0347	**Species**	*Spathodea campanulata*
Date	08 05 2018	**Girth (m)**	1.4	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	36
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446377314 N 103.7824679 E Woodlands HDB	**Tree ID**	TR0348	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446403282 N 103.7824702 E Woodlands HDB	**Tree ID**	TR0349	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446377457 N 103.7824961 E Woodlands HDB	**Tree ID**	TR0350	**Species**	*Livistona cf. rotundifolia*
Date	08 05 2018	**Girth (m)**	1.2	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) Decay on trunk.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446413596 N 103.782482 E Woodlands HDB	**Tree ID**	TR0351	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446408894 N 103.7824364 E Woodlands HDB	**Tree ID**	TR0352	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.4	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446410867 N 103.7824163 E Woodlands HDB	**Tree ID**	TR0353	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.5+0.9	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5+0.3	**Taper (H/D)**	38+63
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446445471 N 103.7824429 E Woodlands HDB	**Tree ID**	TR0354	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.3	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	24
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446461315 N 103.7824423 E Woodlands HDB	**Tree ID**	TR0355	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.5	**Height (m)**	6
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects 3) Co-dominant trunk 4) Clusters within proximity.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446507947 N 103.7825353 E Woodlands HDB	**Tree ID**	TR0356	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446471043 N 103.7825376 E Woodlands HDB	**Tree ID**	TR0357	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446489585 N 103.7825611 E Woodlands HDB	**Tree ID**	TR0358	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446575574 N 103.7826019 E Woodlands HDB	**Tree ID**	TR0359	**Species**	*Falcataria moluccana*
Date	08 05 2018	**Girth (m)**	2.4	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	16
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446747011 N 103.782635 E Woodlands HDB	**Tree ID**	TR0360	**Species**	*Acacia auriculiformis*
Date	08 05 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.446451134 N 103.7815575 E Woodlands HDB	**Tree ID**	TR0361	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.5	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446480335 N 103.781523 E Woodlands HDB	**Tree ID**	TR0362	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.6	**Height (m)**	12
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects 3) Clusters within proximity.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446509948 N 103.7814449 E Woodlands HDB	**Tree ID**	TR0363	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.5	**Height (m)**	7
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	44

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.44649527 N 103.7814562 E Woodlands HDB	**Tree ID**	TR0364	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.3	**Height (m)**	7
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	73

Observations:
1) Good health and vigor 2) No significant defects 3) Lean towards northwest.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446518449 N 103.7815447 E Woodlands HDB	**Tree ID**	TR0365	**Species**	*Litsea firma*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects 3) Clusters within proximity.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446536219 N 103.7815868 E Woodlands HDB	**Tree ID**	TR0366	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.3	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects 3) Clusters within proximity.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446515134 N 103.7816043 E Woodlands HDB	**Tree ID**	TR0367	**Species**	*Litsea firma*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	251

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446557955 N 103.781585 E Woodlands HDB	**Tree ID**	TR0368	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.4	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	47
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446591496 N 103.7815715 E Woodlands HDB	**Tree ID**	TR0369	**Species**	*Ficus aurata*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446580417 N 103.7815602 E Woodlands HDB	**Tree ID**	TR0370	**Species**	*Ficus vasculosa*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	1.2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	75
Observations: 1) Good health and vigor 2) No significant defects 3) Cluster x2.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Endangered.					
Recommendations: To remove the tree.					

Location	1.446821965 N 103.7816559 E Woodlands HDB	**Tree ID**	TR0371	**Species**	*Cyathea latebrosa*
Date	08 05 2018	**Girth (m)**	0.3	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446813706 N 103.781659 E Woodlands HDB	**Tree ID**	TR0372	**Species**	*Litsea firma*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189
Observations: 1) Good health and vigor 2) No significant defects.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446808567 N 103.7816508 E Woodlands HDB	**Tree ID**	TR0373	**Species**	*Ficus aurata*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446782726 N 103.7814554 E Woodlands HDB	**Tree ID**	TR0374	**Species**	*Bauhinia semibifida var. semibifida*
Date	08 05 2018	**Girth (m)**	Climber	**Height (m)**	NA
Spread (radius) (m)	NA	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446739641 N 103.7814895 E Woodlands HDB	**Tree ID**	TR0375	**Species**	*Oncosperma tigillaria*
Date	08 05 2018	**Girth (m)**	0.4	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446783805 N 103.781466 E Woodlands HDB	**Tree ID**	TR0376	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	1.7	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Co-dominant low bifurcation 5) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446796716 N 103.7814533 E Woodlands HDB	**Tree ID**	TR0377	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	1.2	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446760694 N 103.7814448 E Woodlands HDB	**Tree ID**	TR0378	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	2	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446750481 N 103.7814364 E Woodlands HDB	**Tree ID**	TR0379	**Species**	*Bauhinia semibifida var. semibifida*
Date	08 05 2018	**Girth (m)**	Climber	**Height (m)**	NA
Spread (radius) (m)	NA	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446752772 N 103.7814554 E Woodlands HDB	**Tree ID**	TR0380	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446705463 N 103.7814929 E Woodlands HDB	**Tree ID**	TR0381	**Species**	*Guioa cf bijuga*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.4467116 N 103.7814787 E Woodlands HDB	**Tree ID**	TR0382	**Species**	*Guioa cf bijuga*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446741741 N 103.7814634 E Woodlands HDB	**Tree ID**	TR0383	**Species**	*Timonius wallichianus*
Date	08 05 2018	**Girth (m)**	1.05	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachment.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446765702 N 103.7814284 E Woodlands HDB	**Tree ID**	TR0384	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	3.5	**Height (m)**	16
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	14

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446671138 N 103.7814232 E Woodlands HDB	**Tree ID**	TR0385	**Species**	*Oncosperma tigillaria*
Date	08 05 2018	**Girth (m)**	0.5	**Height (m)**	4
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446730341 N 103.7813991 E Woodlands HDB	**Tree ID**	TR0386	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	2.4	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446738515 N 103.7813903 E Woodlands HDB	**Tree ID**	TR0387	**Species**	*Litsea firma*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	1.8
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	113

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446769014 N 103.7814045 E Woodlands HDB	**Tree ID**	TR0388	**Species**	*Hevea brasiliensis*
Date	08 05 2018	**Girth (m)**	1.8	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	14

Observations:
1) Good health and vigor 2) Decay on branch & failed trunk.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446807007 N 103.7813862 E Woodlands HDB	**Tree ID**	TR0389	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	1.3	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	39

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446781151 N 103.7813863 E Woodlands HDB	**Tree ID**	TR0390	**Species**	*Oncosperma tigillaria*
Date	08 05 2018	**Girth (m)**	0.6	**Height (m)**	4
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446804163 N 103.7813318 E Woodlands HDB	**Tree ID**	TR0391	**Species**	*Macaranga recurvata*
Date	08 05 2018	**Girth (m)**	0.85	**Height (m)**	8
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446820845 N 103.7812972 E Woodlands HDB	**Tree ID**	TR0392	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446803293 N 103.7813087 E Woodlands HDB	**Tree ID**	TR0393	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	2.25	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	22

Observations:
1) Good health and vigor 2) Decay at tree base facing northeast.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446671987 N 103.7813685 E Woodlands HDB	**Tree ID**	TR0394	**Species**	*Syzygium palembanicum*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	251

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446682448 N 103.7813818 E Woodlands HDB	**Tree ID**	TR0395	**Species**	*Litsea firma*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446694258 N 103.7813491 E Woodlands HDB	**Tree ID**	TR0396	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446672537 N 103.7813401 E Woodlands HDB	**Tree ID**	TR0397	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	2.9	**Height (m)**	18
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446666201 N 103.7813322 E Woodlands HDB	**Tree ID**	TR0398	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44676188 N 103.781285 E Woodlands HDB	**Tree ID**	TR0399	**Species**	*Syzygium palembanicum*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	2
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446674639 N 103.7812748 E Woodlands HDB	**Tree ID**	TR0400	**Species**	*Endospermum diadenum*
Date	08 05 2018	**Girth (m)**	1.5	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	29

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446686211 N 103.7812999 E Woodlands HDB	**Tree ID**	TR0401	**Species**	*Cyrtophyllum fragrans*
Date	08 05 2018	**Girth (m)**	1.6	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446673694 N 103.7812895 E Woodlands HDB	**Tree ID**	TR0402	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	2.3	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446730515 N 103.7811293 E Woodlands HDB	**Tree ID**	TR0403	**Species**	*Macaranga recurvata*
Date	08 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered.

Recommendations: To remove the tree.

Location	1.446770299 N 103.7811484 E Woodlands HDB	**Tree ID**	TR0404	**Species**	*Hevea brasiliensis*
Date	08 05 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446792298 N 103.781105 E Woodlands HDB	**Tree ID**	TR0405	**Species**	*Hevea brasiliensis*
Date	08 05 2018	**Girth (m)**	1.2	**Height (m)**	6
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	16

Observations:
1) Poor health and vigor 2) Decay on trunk & branches.



Decay on trunk





Decay on branch



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446774764 N 103.7811408 E Woodlands HDB	**Tree ID**	TR0406	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.2	**Height (m)**	6
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446735022 N 103.7811262 E Woodlands HDB	**Tree ID**	TR0407	**Species**	*Hornstedtia scyphifera var. scyphifera*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	107

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446664 N 103.7811268 E Woodlands HDB	**Tree ID**	TR0408	**Species**	*Litsea firma*
Date	08 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446608007 N 103.7811619 E Woodlands HDB	**Tree ID**	TR0409	**Species**	*Litsea firma*
Date	08 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446576169 N 103.7812039 E Woodlands HDB	**Tree ID**	TR0410	**Species**	*Oncosperma tigillaria*
Date	08 05 2018	**Girth (m)**	0.8	**Height (m)**	5
Spread (radius) (m)	2	**DBH (m)**	0.3	**Taper (H/D)**	20

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446570017 N 103.7812042 E Woodlands HDB	**Tree ID**	TR0411	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	2.4	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446545329 N 103.7812586 E Woodlands HDB	**Tree ID**	TR0412	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	3.1	**Height (m)**	18
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446539747 N 103.7812957 E Woodlands HDB	**Tree ID**	TR0413	**Species**	*Syzygium palembanicum*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	3
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	189

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446562457 N 103.7813162 E Woodlands HDB	**Tree ID**	TR0414	**Species**	*Cyrtophyllum fragrans*
Date	08 05 2018	**Girth (m)**	2.1	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	12

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446468412 N 103.7812282 E Woodlands HDB	**Tree ID**	TR0415	**Species**	*Cyrtophyllum fragrans*
Date	08 05 2018	**Girth (m)**	1.7	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446455594 N 103.7811954 E Woodlands HDB	**Tree ID**	TR0416	**Species**	*Adinandra dumosa*
Date	08 05 2018	**Girth (m)**	1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	44
Observations: 1) Good health and vigor 2) No significant defects 3) Multiple attachment.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.446467017 N 103.7813556 E Woodlands HDB	**Tree ID**	TR0417	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.2	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	79
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446411154 N 103.7813926 E Woodlands HDB	**Tree ID**	TR0418	**Species**	*Cyrtophyllum fragrans*
Date	08 05 2018	**Girth (m)**	4	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.3	**Taper (H/D)**	16

Observations:
1) Good health and vigor 2) No significant defects 3) Co-dominant trunk.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446409753 N 103.7813476 E Woodlands HDB	**Tree ID**	TR0419	**Species**	*Santiria laevigata*
Date	08 05 2018	**Girth (m)**	0.01	**Height (m)**	1
Spread (radius) (m)	1.5	**DBH (m)**	0.003	**Taper (H/D)**	314
Observations: 1) Good health and vigor 2) No significant defects.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446370108 N 103.7814877 E Woodlands HDB	**Tree ID**	TR0420	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.5	**Height (m)**	10
Spread (radius) (m)	2	**DBH (m)**	0.2	**Taper (H/D)**	63

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446359732 N 103.7814934 E Woodlands HDB	**Tree ID**	TR0421	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.1	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	157

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446357773 N 103.781478 E Woodlands HDB	**Tree ID**	TR0422	**Species**	*Ficus aurata*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	1.5
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	94

Observations:
1) Good health and vigor 2) No significant defects.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446375393 N 103.7814814 E Woodlands HDB	**Tree ID**	TR0423	**Species**	*Macaranga gigantea*
Date	08 05 2018	**Girth (m)**	1.3	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	39

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446323985 N 103.7814309 E Woodlands HDB	**Tree ID**	TR0424	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.4	**Height (m)**	6
Spread (radius) (m)	1.4	**DBH (m)**	0.1	**Taper (H/D)**	47

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446303698 N 103.7814258 E Woodlands HDB	**Tree ID**	TR0425	**Species**	*Lindera lucida*
Date	08 05 2018	**Girth (m)**	0.1	**Height (m)**	5
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	157

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.446291496 N 103.7813828 E Woodlands HDB	**Tree ID**	TR0426	**Species**	*Ixonanthes reticulata*
Date	08 05 2018	**Girth (m)**	1.35	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	37

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446200203 N 103.7813935 E Woodlands HDB	**Tree ID**	TR0427	**Species**	*Macaranga gigantea*
Date	08 05 2018	**Girth (m)**	1.15	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	38

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44623429 N 103.7812826 E Woodlands HDB	**Tree ID**	TR0428	**Species**	*Cyrtophyllum fragrans*
Date	08 05 2018	**Girth (m)**	2.3	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.446175829 N 103.7812613 E Woodlands HDB	**Tree ID**	TR0429	**Species**	*Hevea brasiliensis*
Date	08 05 2018	**Girth (m)**	1.85	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.446118438 N 103.781371 E Woodlands HDB	**Tree ID**	TR0430	**Species**	*Litsea firma*
Date	08 05 2018	**Girth (m)**	0.05	**Height (m)**	1.7
Spread (radius) (m)	1.5	**DBH (m)**	0.02	**Taper (H/D)**	107
Observations: 1) Good health and vigor 2) No significant defects.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Vulnerable.					
Recommendations: To remove the tree.					

Location	1.446070151 N 103.7813188 E Woodlands HDB	**Tree ID**	TR0431	**Species**	*Cyrtophyllum fragrans*
Date	08 05 2018	**Girth (m)**	3.2	**Height (m)**	18
Spread (radius) (m)	6	**DBH (m)**	1.0	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Cluster x5.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448804479 N 103.7837853 E Woodlands HDB	**Tree ID**	TR0432	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448814087 N 103.7837489 E Woodlands HDB	**Tree ID**	TR0433	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448761843 N 103.7837485 E Woodlands HDB	**Tree ID**	TR0434	**Species**	*Macaranga hullettii*
Date	10 05 2018	**Girth (m)**	0.2	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	63
Observations: 1) Good health and vigor 2) No significant defects.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Critically endangered.					
Recommendations: To remove the tree.					

Location	1.448737445 N 103.7837039 E Woodlands HDB	**Tree ID**	TR0435	**Species**	*Macaranga gigantea*
Date	10 05 2018	**Girth (m)**	1.5	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	19

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachments.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448704958 N 103.7836085 E Woodlands HDB	**Tree ID**	TR0436	**Species**	*Macaranga gigantea*
Date	10 05 2018	**Girth (m)**	1.1	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachments.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448687004 N 103.7834169 E Woodlands HDB	**Tree ID**	TR0437	**Species**	*Mallotus paniculatus*
Date	10 05 2018	**Girth (m)**	1.6	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachments 4) Growing on slope.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448656593 N 103.7833514 E Woodlands HDB	**Tree ID**	TR0438	**Species**	*Macaranga gigantea*
Date	10 05 2018	**Girth (m)**	2	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachments 4) Growing on slope.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448612409 N 103.7832859 E Woodlands HDB	**Tree ID**	TR0439	**Species**	*Macaranga gigantea*
Date	10 05 2018	**Girth (m)**	1.8	**Height (m)**	8
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	14

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachments.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448651633 N 103.7832665 E Woodlands HDB	**Tree ID**	TR0440	**Species**	*Mallotus paniculatus*
Date	10 05 2018	**Girth (m)**	1.2	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachments 4) Asymmetric canopy.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448659661 N 103.7832485 E Woodlands HDB	**Tree ID**	TR0441	**Species**	*Macaranga heynei*
Date	10 05 2018	**Girth (m)**	1.5	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects 3) Multiple attachments 4) Asymmetric canopy.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448624982 N 103.7828161 E Woodlands HDB	**Tree ID**	TR0442	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2.1	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	24

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448632534 N 103.7827994 E Woodlands HDB	**Tree ID**	TR0443	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.5	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	34
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448631797 N 103.7827855 E Woodlands HDB	**Tree ID**	TR0444	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448591797 N 103.7827058 E Woodlands HDB	**Tree ID**	TR0445	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	3.5	**Height (m)**	18
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	16

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448192727 N 103.782287 E Woodlands HDB	**Tree ID**	TR0446	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448165485 N 103.7822543 E Woodlands HDB	**Tree ID**	TR0447	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448101397 N 103.7820374 E Woodlands HDB	**Tree ID**	TR0448	**Species**	*Claoxylon indicum*
Date	10 05 2018	**Girth (m)**	1.2	**Height (m)**	6
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	16

Observations:
1) Good health and vigor 2) No significant defects 3) Low bifurcation.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.447788017 N 103.7815943 E Woodlands HDB	**Tree ID**	TR0449	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.3	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	53
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447792928 N 103.7815426 E Woodlands HDB	**Tree ID**	TR0450	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	50
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447766127 N 103.7815784 E Woodlands HDB	**Tree ID**	TR0451	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	69

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447787956 N 103.7815283 E Woodlands HDB	**Tree ID**	TR0452	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.1	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	57
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447782453 N 103.7814946 E Woodlands HDB	**Tree ID**	TR0453	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447814546 N 103.7814665 E Woodlands HDB	**Tree ID**	TR0454	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447845069 N 103.7814617 E Woodlands HDB	**Tree ID**	TR0455	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2.1	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	21
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44774151 N 103.7814726 E Woodlands HDB	**Tree ID**	TR0456	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	3.5	**Height (m)**	22
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	20
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447658806 N 103.7814901 E Woodlands HDB	**Tree ID**	TR0457	**Species**	*Spathodea campanulata*
Date	10 05 2018	**Girth (m)**	1.5	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	25

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447719033 N 103.7815168 E Woodlands HDB	**Tree ID**	TR0458	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447717236 N 103.7816378 E Woodlands HDB	**Tree ID**	TR0459	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447778147 N 103.7816967 E Woodlands HDB	**Tree ID**	TR0460	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	3	**Height (m)**	22
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	23
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447809007 N 103.7816435 E Woodlands HDB	**Tree ID**	TR0461	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2.2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447731022 N 103.781712 E Woodlands HDB	**Tree ID**	TR0462	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44772021 N 103.7817392 E Woodlands HDB	**Tree ID**	TR0463	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447719713 N 103.7817339 E Woodlands HDB	**Tree ID**	TR0464	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447727694 N 103.7817369 E Woodlands HDB	**Tree ID**	TR0465	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447777999 N 103.7817316 E Woodlands HDB	**Tree ID**	TR0466	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.9	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	36
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447714215 N 103.7817643 E Woodlands HDB	**Tree ID**	TR0467	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44772112 N 103.7818173 E Woodlands HDB	**Tree ID**	TR0468	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447665508 N 103.78181 E Woodlands HDB	**Tree ID**	TR0469	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	3	**Height (m)**	22
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	23
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447672762 N 103.7818642 E Woodlands HDB	**Tree ID**	TR0470	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2.2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447672397 N 103.7818763 E Woodlands HDB	**Tree ID**	TR0471	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.4476481 N 103.7818827 E Woodlands HDB	**Tree ID**	TR0472	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2.8	**Height (m)**	22
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	25
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447618311 N 103.7820706 E Woodlands HDB	**Tree ID**	TR0473	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447913622 N 103.7821395 E Woodlands HDB	**Tree ID**	TR0474	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2.2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	29

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447950352 N 103.7820262 E Woodlands HDB	**Tree ID**	TR0475	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.9	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	30

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447965116 N 103.7820582 E Woodlands HDB	**Tree ID**	TR0476	**Species**	*Lindera lucida*
Date	10 05 2018	**Girth (m)**	0.1	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.03	**Taper (H/D)**	126

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.447986056 N 103.7820879 E Woodlands HDB	**Tree ID**	TR0477	**Species**	*Cyrtophyllum fragrans*
Date	10 05 2018	**Girth (m)**	3.5	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	18

Observations:
1) Poor health and vigor 2) Decay on trunk at 0.6m of height 3) Die back at canopy.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448098967 N 103.782146 E Woodlands HDB	**Tree ID**	TR0478	**Species**	*Ficus variegata*
Date	10 05 2018	**Girth (m)**	1.3	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448127923 N 103.7821933 E Woodlands HDB	**Tree ID**	TR0479	**Species**	*Cocos nucifera*
Date	10 05 2018	**Girth (m)**	1	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448091647 N 103.7822536 E Woodlands HDB	**Tree ID**	TR0480	**Species**	*Mangifera odorata*
Date	10 05 2018	**Girth (m)**	1.6	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448022373 N 103.782319 E Woodlands HDB	**Tree ID**	TR0481	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447990103 N 103.7823211 E Woodlands HDB	**Tree ID**	TR0482	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.5	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	46

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448016699 N 103.7823432 E Woodlands HDB	**Tree ID**	TR0483	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	2.1	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	33

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44797703 N 103.7823646 E Woodlands HDB	**Tree ID**	TR0484	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447997513 N 103.7823882 E Woodlands HDB	**Tree ID**	TR0485	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447920745 N 103.7824051 E Woodlands HDB	**Tree ID**	TR0486	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448100297 N 103.7824248 E Woodlands HDB	**Tree ID**	TR0487	**Species**	*Artocarpus heterophyllus*
Date	10 05 2018	**Girth (m)**	1.1	**Height (m)**	6
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	17

Observations:
1) Poor health and vigor 2) Decay on trunk 3) Die back at canopy.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448167169 N 103.7824801 E Woodlands HDB	**Tree ID**	TR0488	**Species**	*Cocos nucifera*
Date	10 05 2018	**Girth (m)**	1.2	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	31

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44805539 N 103.7825195 E Woodlands HDB	**Tree ID**	TR0489	**Species**	*Falcataria moluccana*
Date	10 05 2018	**Girth (m)**	3	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	21
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448067503 N 103.782548 E Woodlands HDB	**Tree ID**	TR0490	**Species**	*Cocos nucifera*
Date	10 05 2018	**Girth (m)**	1.4	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	27

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448007615 N 103.7825468 E Woodlands HDB	**Tree ID**	TR0491	**Species**	*Mangifera indica*
Date	10 05 2018	**Girth (m)**	2.2	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447890398 N 103.7825573 E Woodlands HDB	**Tree ID**	TR0492	**Species**	*Spathodea campanulata*
Date	10 05 2018	**Girth (m)**	1.2	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	24
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449775069 N 103.7804095 E Woodlands HDB	**Tree ID**	TR0493	**Species**	*Samanea saman*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	6
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects 3) Assessment limited by climbers & undergrowth.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449676337 N 103.7804731 E Woodlands HDB	**Tree ID**	TR0494	**Species**	*Cecropia pachystachya*
Date	31 05 2018	**Girth (m)**	3	**Height (m)**	9
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	9

Observations:
1) Good health and vigor 2) No significant defects 3) Invasive species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449643861 N 103.7804127 E Woodlands HDB	**Tree ID**	TR0495	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44963604 N 103.7803284 E Woodlands HDB	**Tree ID**	TR0496	**Species**	*Claoxylon indicum*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	21

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious 4) Assessment limited by climbers.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.449568601 N 103.7804276 E Woodlands HDB	**Tree ID**	TR0497	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44953981 N 103.7803884 E Woodlands HDB	**Tree ID**	TR0498	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449491477 N 103.7803582 E Woodlands HDB	**Tree ID**	TR0499	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449470972 N 103.7803537 E Woodlands HDB	**Tree ID**	TR0500	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449479212 N 103.7804121 E Woodlands HDB	**Tree ID**	TR0501	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	57

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449452943 N 103.7804238 E Woodlands HDB	**Tree ID**	TR0502	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44950748 N 103.7804378 E Woodlands HDB	**Tree ID**	TR0503	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2+1.2	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	52

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449384175 N 103.7805002 E Woodlands HDB	**Tree ID**	TR0504	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449368837 N 103.7802834 E Woodlands HDB	**Tree ID**	TR0505	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	2.2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	29
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449286782 N 103.7802862 E Woodlands HDB	**Tree ID**	TR0506	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449269573 N 103.7803068 E Woodlands HDB	**Tree ID**	TR0507	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	2.8	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	22

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449317012 N 103.7802742 E Woodlands HDB	**Tree ID**	TR0508	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449250939 N 103.7803128 E Woodlands HDB	**Tree ID**	TR0509	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449231983 N 103.7802905 E Woodlands HDB	**Tree ID**	TR0510	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.6	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449125951 N 103.7803463 E Woodlands HDB	**Tree ID**	TR0511	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449098216 N 103.780296 E Woodlands HDB	**Tree ID**	TR0512	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.449032603 N 103.7803007 E Woodlands HDB	**Tree ID**	TR0513	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449066668 N 103.7803307 E Woodlands HDB	**Tree ID**	TR0514	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	57
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.449009241 N 103.7803095 E Woodlands HDB	**Tree ID**	TR0515	**Species**	*Cyrtophyllum fragrans*
Date	31 05 2018	**Girth (m)**	2	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	19

Observations:
1) Average health and vigor 2) Decay on trunk & branches.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448991482 N 103.7803564 E Woodlands HDB	**Tree ID**	TR0516	**Species**	*Cyrtophyllum fragrans*
Date	31 05 2018	**Girth (m)**	3.6	**Height (m)**	15
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	13

Observations:
1) Average health and vigor 2) Decay on trunk & primary branches possible due to lightning strike 3) Die back at canopy.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448987019 N 103.7803127 E Woodlands HDB	**Tree ID**	TR0517	**Species**	*Cyrtophyllum fragrans*
Date	31 05 2018	**Girth (m)**	1.7	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	30

Observations:
1) Good health and vigor 2) No significant defects 3) Lean towards west but self-corrected.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448956495 N 103.7802918 E Woodlands HDB	**Tree ID**	TR0518	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44890476 N 103.7802459 E Woodlands HDB	**Tree ID**	TR0519	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448888122 N 103.7803454 E Woodlands HDB	**Tree ID**	TR0520	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448862934 N 103.7803588 E Woodlands HDB	**Tree ID**	TR0521	**Species**	*Dillenia suffruticosa*
Date	31 05 2018	**Girth (m)**	1.4	**Height (m)**	5
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	11

Observations:
1) Good health and vigor 2) No significant defects 3) Clusters within proximity.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448797456 N 103.7802757 E Woodlands HDB	**Tree ID**	TR0522	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448845179 N 103.7801881 E Woodlands HDB	**Tree ID**	TR0523	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448844213 N 103.7801822 E Woodlands HDB	**Tree ID**	TR0524	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448861143 N 103.7801695 E Woodlands HDB	**Tree ID**	TR0525	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448904693 N 103.7801365 E Woodlands HDB	**Tree ID**	TR0526	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448924482 N 103.7801245 E Woodlands HDB	**Tree ID**	TR0527	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448939018 N 103.7800417 E Woodlands HDB	**Tree ID**	TR0528	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448820943 N 103.7801557 E Woodlands HDB	**Tree ID**	TR0529	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.7	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	37

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448791288 N 103.7800865 E Woodlands HDB	**Tree ID**	TR0530	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	33
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448762078 N 103.7800326 E Woodlands HDB	**Tree ID**	TR0531	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448773596 N 103.7801027 E Woodlands HDB	**Tree ID**	TR0532	**Species**	*Acacia auriculiformis*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	23

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448762904 N 103.7801943 E Woodlands HDB	**Tree ID**	TR0533	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.4	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	45
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.4487587 N 103.7802527 E Woodlands HDB	**Tree ID**	TR0534	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448757848 N 103.7802547 E Woodlands HDB	**Tree ID**	TR0535	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448803418 N 103.7802653 E Woodlands HDB	**Tree ID**	TR0536	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448690393 N 103.7803659 E Woodlands HDB	**Tree ID**	TR0537	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.5	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448610709 N 103.7803863 E Woodlands HDB	**Tree ID**	TR0538	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.4	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	45
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44858394 N 103.7802746 E Woodlands HDB	**Tree ID**	TR0539	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	2.5	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	25

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448633492 N 103.7801874 E Woodlands HDB	**Tree ID**	TR0540	**Species**	*Cyrtophyllum fragrans*
Date	31 05 2018	**Girth (m)**	1.4	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	36

Observations:
1) Good health and vigor 2) No significant defects 3) Lean towards southeast but self-corrected.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448657992 N 103.7801636 E Woodlands HDB	**Tree ID**	TR0541	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	57

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448618237 N 103.7801422 E Woodlands HDB	**Tree ID**	TR0542	**Species**	*Cyrtophyllum fragrans*
Date	31 05 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44

Observations:
1) Good health and vigor 2) Decay on trunk possible due to lightning strike.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44861918 N 103.7801151 E Woodlands HDB	**Tree ID**	TR0543	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448466587 N 103.7801655 E Woodlands HDB	**Tree ID**	TR0544	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.2	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	52

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448508177 N 103.7802862 E Woodlands HDB	**Tree ID**	TR0545	**Species**	*Acacia auriculiformis*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448461075 N 103.7803074 E Woodlands HDB	**Tree ID**	TR0546	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	51
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448504135 N 103.7803957 E Woodlands HDB	**Tree ID**	TR0547	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448476412 N 103.7804178 E Woodlands HDB	**Tree ID**	TR0548	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448389339 N 103.7804928 E Woodlands HDB	**Tree ID**	TR0549	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1.1	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	57
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448391204 N 103.7805702 E Woodlands HDB	**Tree ID**	TR0550	**Species**	*Falcataria moluccana*
Date	31 05 2018	**Girth (m)**	1	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	63
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448316481 N 103.7804215 E Woodlands HDB	**Tree ID**	TR0551	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448363368 N 103.7803053 E Woodlands HDB	**Tree ID**	TR0552	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448401872 N 103.7802191 E Woodlands HDB	**Tree ID**	TR0553	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.7	**Taper (H/D)**	26

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448414481 N 103.7802247 E Woodlands HDB	**Tree ID**	TR0556	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	58
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448394866 N 103.7802025 E Woodlands HDB	**Tree ID**	TR0557	**Species**	*Acacia auriculiformis*
Date	12 06 2018	**Girth (m)**	1.2	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448306213 N 103.7802734 E Woodlands HDB	**Tree ID**	TR0558	**Species**	*Dillenia suffruticosa*
Date	12 06 2018	**Girth (m)**	1.3	**Height (m)**	5
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	12

Observations:
1) Good health and vigor 2) No significant defects.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448280985 N 103.7804955 E Woodlands HDB	**Tree ID**	TR0559	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.3	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	48
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448328833 N 103.7806035 E Woodlands HDB	**Tree ID**	TR0560	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.7	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	33
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448360834 N 103.7806121 E Woodlands HDB	**Tree ID**	TR0561	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448368359 N 103.7806254 E Woodlands HDB	**Tree ID**	TR0562	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448315059 N 103.7806821 E Woodlands HDB	**Tree ID**	TR0563	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448307349 N 103.7806806 E Woodlands HDB	**Tree ID**	TR0564	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448291931 N 103.7806533 E Woodlands HDB	**Tree ID**	TR0565	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448282206 N 103.7806458 E Woodlands HDB	**Tree ID**	TR0566	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.4	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448284005 N 103.7806792 E Woodlands HDB	**Tree ID**	TR0567	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448255421 N 103.7805531 E Woodlands HDB	**Tree ID**	TR0568	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448188181 N 103.7805207 E Woodlands HDB	**Tree ID**	TR0569	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.6	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	39

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448087186 N 103.7804242 E Woodlands HDB	**Tree ID**	TR0570	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.7	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	37

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448146779 N 103.7803557 E Woodlands HDB	**Tree ID**	TR0571	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44805759 N 103.78028 E Woodlands HDB	**Tree ID**	TR0572	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.9+1.9	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6+0.6	**Taper (H/D)**	30
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448092103 N 103.7801584 E Woodlands HDB	**Tree ID**	TR0573	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447888381 N 103.7803741 E Woodlands HDB	**Tree ID**	TR0574	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.4	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448254209 N 103.7808522 E Woodlands HDB	**Tree ID**	TR0575	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44825301 N 103.7808071 E Woodlands HDB	**Tree ID**	TR0576	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448157855 N 103.7807084 E Woodlands HDB	**Tree ID**	TR0577	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448170007 N 103.7807777 E Woodlands HDB	**Tree ID**	TR0578	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.2	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	47
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44802398 N 103.7812543 E Woodlands HDB	**Tree ID**	TR0579	**Species**	*Cecropia pachystachya*
Date	12 06 2018	**Girth (m)**	3	**Height (m)**	12
Spread (radius) (m)	5	**DBH (m)**	1.0	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) No significant defects 3) Invasive species 4) Cluster within proximity.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448003944 N 103.781356 E Woodlands HDB	**Tree ID**	TR0580	**Species**	*Cecropia pachystachya*
Date	12 06 2018	**Girth (m)**	2.5	**Height (m)**	12
Spread (radius) (m)		**DBH (m)**	0.8	**Taper (H/D)**	15

Observations:
1) Good health and vigor 2) No significant defects 3) Invasive species 4) Cluster within proximity.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447852912 N 103.7812261 E Woodlands HDB	**Tree ID**	TR0581	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	38

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447850316 N 103.7811908 E Woodlands HDB	**Tree ID**	TR0582	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447809237 N 103.7811488 E Woodlands HDB	**Tree ID**	TR0583	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447815951 N 103.7812022 E Woodlands HDB	**Tree ID**	TR0584	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.2	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447854811 N 103.7811057 E Woodlands HDB	**Tree ID**	TR0585	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.9	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	33
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447894263 N 103.781117 E Woodlands HDB	**Tree ID**	TR0586	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447825814 N 103.7813682 E Woodlands HDB	**Tree ID**	TR0587	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.4+1.5	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.8+0.5	**Taper (H/D)**	29+46

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447787831 N 103.7813312 E Woodlands HDB	**Tree ID**	TR0588	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.6	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	24
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44776751 N 103.7813374 E Woodlands HDB	**Tree ID**	TR0589	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447648372 N 103.7816433 E Woodlands HDB	**Tree ID**	TR0590	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.5	**Height (m)**	22
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	46
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447594459 N 103.7816666 E Woodlands HDB	**Tree ID**	TR0591	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447560707 N 103.7817028 E Woodlands HDB	**Tree ID**	TR0592	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.4	**Height (m)**	20
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	45
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447580646 N 103.7818491 E Woodlands HDB	**Tree ID**	TR0593	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.2	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	29
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447503575 N 103.7818688 E Woodlands HDB	**Tree ID**	TR0594	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.6	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	18
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447519771 N 103.7818479 E Woodlands HDB	**Tree ID**	TR0595	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.1	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	30
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447439271 N 103.7818751 E Woodlands HDB	**Tree ID**	TR0596	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.4+1.2	**Height (m)**	20
Spread (radius) (m)	4+3	**DBH (m)**	0.8+0.4	**Taper (H/D)**	26+52
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447487831 N 103.7816097 E Woodlands HDB	**Tree ID**	TR0597	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.2	**Height (m)**	22
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447537787 N 103.7815339 E Woodlands HDB	**Tree ID**	TR0598	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447624812 N 103.7813165 E Woodlands HDB	**Tree ID**	TR0599	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	35
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447698737 N 103.7807948 E Woodlands HDB	**Tree ID**	TR0600	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.7	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	33
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447895078 N 103.7808781 E Woodlands HDB	**Tree ID**	TR0600A	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	1.5	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.5	**Taper (H/D)**	38
Observations: Annex 5, Expendable Species.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447710256 N 103.7807402 E Woodlands HDB	**Tree ID**	TR0601	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	2.7+1.8	**Height (m)**	20
Spread (radius) (m)	5+4	**DBH (m)**	0.8+0.6	**Taper (H/D)**	23+35
Observations: 1) Annex 5, Expendable Species 2) Cluster x2.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447459616 N 103.7809833 E Woodlands HDB	**Tree ID**	TR0602	**Species**	*Acacia auriculiformis*
Date	12 06 2018	**Girth (m)**	1.4	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	36
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447361526 N 103.7809826 E Woodlands HDB	**Tree ID**	TR0603	**Species**	*Acacia auriculiformis*
Date	12 06 2018	**Girth (m)**	1.1	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	43

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447323034 N 103.7809457 E Woodlands HDB	**Tree ID**	TR0604	**Species**	*Spathodea campanulata*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447398061 N 103.7810574 E Woodlands HDB	**Tree ID**	TR0605	**Species**	*Acacia auriculiformis*
Date	12 06 2018	**Girth (m)**	1.6	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	28
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447423672 N 103.7811655 E Woodlands HDB	**Tree ID**	TR0606	**Species**	*Falcataria moluccana*
Date	12 06 2018	**Girth (m)**	3.4	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.1	**Taper (H/D)**	18
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447402634 N 103.7811526 E Woodlands HDB	**Tree ID**	TR0607	**Species**	*Spathodea campanulata*
Date	12 06 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34
Observations: Annex 5, Expendable Species.					
					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447304604 N 103.7812397 E Woodlands HDB	**Tree ID**	TR0608	**Species**	*Spathodea campanulata*
Date	12 06 2018	**Girth (m)**	1.8	**Height (m)**	12
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	21
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447419461 N 103.7812698 E Woodlands HDB	**Tree ID**	TR0609	**Species**	*Cecropia pachystachya*
Date	12 06 2018	**Girth (m)**	1.6	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	28
Observations: 1) Good health and vigor 2) No significant defects 3) Invasive species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447379118 N 103.7814592 E Woodlands HDB	**Tree ID**	TR0610	**Species**	*Acacia auriculiformis*
Date	12 06 2018	**Girth (m)**	1.6	**Height (m)**	14
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	21

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447310686 N 103.7815158 E Woodlands HDB	**Tree ID**	TR0611	**Species**	*Spathodea campanulata*
Date	12 06 2018	**Girth (m)**	2.1	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	15

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447316782 N 103.7814231 E Woodlands HDB	**Tree ID**	TR0612	**Species**	*Spathodea campanulata*
Date	14 06 2018	**Girth (m)**	1.2	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44799209 N 103.7797616 E Woodlands HDB	**Tree ID**	TR0612A	**Species**	*Cecropia pachystachya*
Date	14 06 2018	**Girth (m)**	2	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	14
Observations: 1) Good health and vigor 2) No significant defects 3) Invasive species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447958025 N 103.7797757 E Woodlands HDB	**Tree ID**	TR0612B	**Species**	*Cecropia pachystachya*
Date	14 06 2018	**Girth (m)**	1.8	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16
Observations: 1) Good health and vigor 2) No significant defects 3) Invasive species.					
 					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447877207 N 103.7798606 E Woodlands HDB	**Tree ID**	TR0612C	**Species**	*Cecropia pachystachya*
Date	14 06 2018	**Girth (m)**	2	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	14

Observations:
1) Good health and vigor 2) No significant defects 3) Invasive species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447322013 N 103.7814184 E Woodlands HDB	**Tree ID**	TR0613	**Species**	*Acacia auriculiformis*
Date	14 06 2018	**Girth (m)**	2	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	16

Observations:
Annex 5, Expendable Species.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447220437 N 103.7814618 E Woodlands HDB	**Tree ID**	TR0614	**Species**	*Acacia auriculiformis*
Date	14 06 2018	**Girth (m)**	1.1	**Height (m)**	12
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447232474 N 103.7814955 E Woodlands HDB	**Tree ID**	TR0615	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447078848 N 103.7814493 E Woodlands HDB	**Tree ID**	TR0616	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	1.9	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	30
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447102354 N 103.7814532 E Woodlands HDB	**Tree ID**	TR0617	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	1.7	**Height (m)**	9
Spread (radius) (m)	4	**DBH (m)**	0.5	**Taper (H/D)**	17
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447097713 N 103.7814842 E Woodlands HDB	**Tree ID**	TR0618	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	2.1	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	27
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447095901 N 103.7814195 E Woodlands HDB	**Tree ID**	TR0619	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44708507 N 103.7812092 E Woodlands HDB	**Tree ID**	TR0620	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	1.2	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	21
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447081406 N 103.7811198 E Woodlands HDB	**Tree ID**	TR0621	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	2.4	**Height (m)**	20
Spread (radius) (m)	4	**DBH (m)**	0.8	**Taper (H/D)**	26

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.447152917 N 103.7810478 E Woodlands HDB	**Tree ID**	TR0622	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	2.6	**Height (m)**	20
Spread (radius) (m)	5	**DBH (m)**	0.8	**Taper (H/D)**	24

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448187246 N 103.7828776 E Woodlands HDB	**Tree ID**	TR0623	**Species**	*Acacia auriculiformis*
Date	14 06 2018	**Girth (m)**	1.3	**Height (m)**	2
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	5
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448222159 N 103.782808 E Woodlands HDB	**Tree ID**	TR0624	**Species**	*Acacia auriculiformis*
Date	14 06 2018	**Girth (m)**	2.1	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	15

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448103494 N 103.7828414 E Woodlands HDB	**Tree ID**	TR0625	**Species**	*Acacia auriculiformis*
Date	14 06 2018	**Girth (m)**	1.2	**Height (m)**	10
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	26
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.447996654 N 103.7827919 E Woodlands HDB	**Tree ID**	TR0626	**Species**	*Ficus microcarpa*
Date	14 06 2018	**Girth (m)**	Cluster	**Height (m)**	8
Spread (radius) (m)	6	**DBH (m)**	NA	**Taper (H/D)**	NA

Observations:
1) Good health and vigor 2) No significant defects 3) Growing on dead wood stump.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448384507 N 103.7829336 E Woodlands HDB	**Tree ID**	TR0627	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.3	**Height (m)**	9
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	22

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448418835 N 103.783112 E Woodlands HDB	**Tree ID**	TR0628	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.3	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	19

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44847117 N 103.7831499 E Woodlands HDB	**Tree ID**	TR0629	**Species**	*Artocarpus heterophyllus*
Date	14 06 2018	**Girth (m)**	1.9	**Height (m)**	10
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	17

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.44851785 N 103.7831779 E Woodlands HDB	**Tree ID**	TR0630	**Species**	*Durio zibethinus*
Date	14 06 2018	**Girth (m)**	2.2	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.7	**Taper (H/D)**	23

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448550141 N 103.7831009 E Woodlands HDB	**Tree ID**	TR0631	**Species**	*Nephelium lappaceum*
Date	14 06 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44

Observations:
1) Good health and vigor 2) Pocket decay on trunk & branches 3) Root flare obvious.









Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered (planted).

Recommendations: To remove the tree.

Location	1.448510716 N 103.7832951 E Woodlands HDB	**Tree ID**	TR0632	**Species**	*Falcataria moluccana*
Date	14 06 2018	**Girth (m)**	1.3	**Height (m)**	18
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	44
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448460514 N 103.783308 E Woodlands HDB	**Tree ID**	TR0633	**Species**	*Nephelium lappaceum*
Date	14 06 2018	**Girth (m)**	1.4	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	18

Observations:
1) Good health and vigor 2) Pocket decay on branches 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Critically endangered (planted).

Recommendations: To remove the tree.

Location	1.448390736 N 103.7833239 E Woodlands HDB	**Tree ID**	TR0634	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.3	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	34

Observations:
Annex 5, Expendable Species.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448320997 N 103.78343 E Woodlands HDB	**Tree ID**	TR0635	**Species**	*Macaranga gigantea*
Date	14 06 2018	**Girth (m)**	1.2	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	37

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44822973 N 103.7834258 E Woodlands HDB	**Tree ID**	TR0636	**Species**	*Cyathea latebrosa*
Date	14 06 2018	**Girth (m)**	0.3	**Height (m)**	4
Spread (radius) (m)	1.5	**DBH (m)**	0.1	**Taper (H/D)**	42

Observations:
1) Good health and vigor 2) No significant defects.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Vulnerable.

Recommendations: To remove the tree.

Location	1.448233996 N 103.7834108 E Woodlands HDB	**Tree ID**	TR0637	**Species**	*Alstonia angustiloba*
Date	14 06 2018	**Girth (m)**	1	**Height (m)**	8
Spread (radius) (m)	3	**DBH (m)**	0.3	**Taper (H/D)**	25

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.





Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448124011 N 103.7833714 E Woodlands HDB	**Tree ID**	TR0638	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	2	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	25

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448271336 N 103.783251 E Woodlands HDB	**Tree ID**	TR0639	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.4	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	36

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448215949 N 103.7831818 E Woodlands HDB	**Tree ID**	TR0640	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.44816879 N 103.7831648 E Woodlands HDB	**Tree ID**	TR0641	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
Annex 5, Expendable Species.






Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448104713 N 103.7833903 E Woodlands HDB	**Tree ID**	TR0642	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.8	**Height (m)**	18
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	31
Observations: Annex 5, Expendable Species.					
   					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448277827 N 103.7835151 E Woodlands HDB	**Tree ID**	TR0643	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.8	**Height (m)**	16
Spread (radius) (m)	4	**DBH (m)**	0.6	**Taper (H/D)**	28
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448321337 N 103.7835649 E Woodlands HDB	**Tree ID**	TR0644	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	1.2	**Height (m)**	16
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	42
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Location	1.448349029 N 103.7836279 E Woodlands HDB	**Tree ID**	TR0645	**Species**	*Andira inermis*
Date	14 06 2018	**Girth (m)**	2.8	**Height (m)**	16
Spread (radius) (m)	5	**DBH (m)**	0.9	**Taper (H/D)**	18

Observations:
Annex 5, Expendable Species.







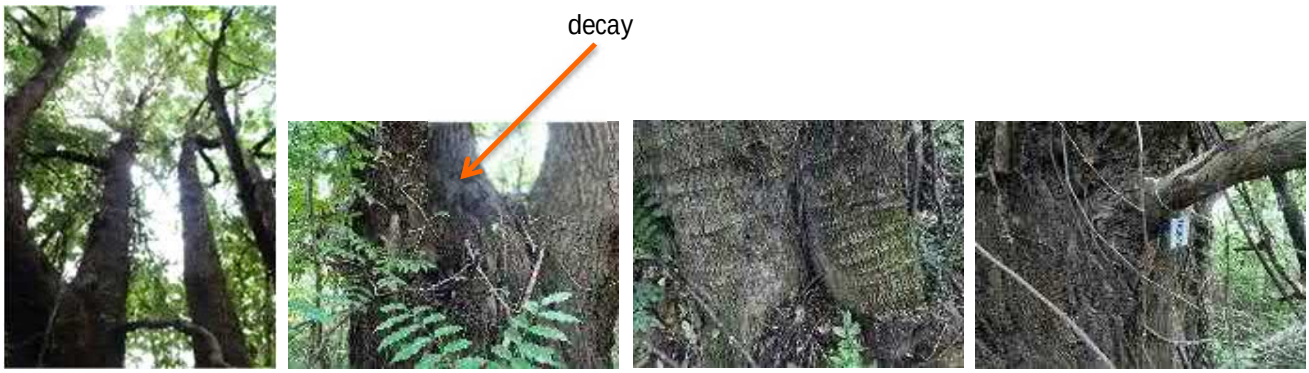
Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Exotic.

Recommendations: To remove the tree.

Location	1.448496953 N 103.783612 E Woodlands HDB	**Tree ID**	TR0646	**Species**	*Cyrtophyllum fragrans*
Date	14 06 2018	**Girth (m)**	5	**Height (m)**	20
Spread (radius) (m)	6	**DBH (m)**	1.6	**Taper (H/D)**	13

Observations:
1) Good health and vigor 2) Decay on trunk facing southwest.



Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.448520951 N 103.7834505 E Woodlands HDB	**Tree ID**	TR0647	**Species**	*Macaranga gigantea*
Date	14 06 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40

Observations:
1) Good health and vigor 2) No significant defects 3) Root flare obvious.







Impacts of Construction: Directly affected by proposed development.

Assessment:
1. Tree is directly affected by proposed development.
2. Singapore Red Data Status: Common.

Recommendations: To remove the tree.

Location	1.44849345 N 103.7834575 E Woodlands HDB	**Tree ID**	TR0648	**Species**	*Macaranga hypoleuca*
Date	14 06 2018	**Girth (m)**	1.1	**Height (m)**	15
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	43
Observations: 1) Good health and vigor 2) No significant defects 3) Root flare obvious.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Common.					
Recommendations: To remove the tree.					

Location	1.448476149 N 103.7834211 E Woodlands HDB	**Tree ID**	TR0649	**Species**	*Acacia auriculiformis*
Date	14 06 2018	**Girth (m)**	1.1	**Height (m)**	14
Spread (radius) (m)	3	**DBH (m)**	0.4	**Taper (H/D)**	40
Observations: Annex 5, Expendable Species.					
  					
Impacts of Construction: Directly affected by proposed development.					
Assessment: 1. Tree is directly affected by proposed development. 2. Singapore Red Data Status: Exotic.					
Recommendations: To remove the tree.					

Appendix P

Baseline Water Quality Laboratory Results

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Co. Reg No. : 201422686C

TEST REPORT

Our Reference No.	:	**R181419/1**	Date Received	: 26/04/2018
Project Code / Ref.	:	-	Date Commenced	: 26/04/2018
			Date Reported	: 09/05/2018
Customer Ref. No.	:	60568492		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Ms Liang Liang		
Sample Description	:	7 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R181419/1

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 26/04/2018						
			WQ 1	WQ 2	WQ 3	WQ 4	WQ 6	WQ 7	WQ 8
Total Nitrogen	mg/L	APHA 4500-N (C)	2.32	1.29	1.50	1.50	1.60	2.11	1.76
Total Phosphorus	mg/L	APHA 4500-P (H)	0.13	0.11	0.11	0.13	0.14	0.078	0.25
Nitrate as NO_3-N	mg/L	APHA 4500-NO_3 (I)	0.73	0.079	0.098	0.098	0.60	1.14	<0.015
Nitrite as NO_2-N	mg/L	APHA 4500-NO_3 (I)	0.32	0.059	0.073	0.060	0.010*	0.026	<0.02
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	0.54	0.48	0.48	0.65	0.018	0.61	1.01
Total Dissolved Solids	mg/L	APHA 2540C	467	19,970	19,617	20,202	100	294	3,021
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.060	0.085	0.086	0.11	0.011	0.034	0.13
Total Suspended Solids	mg/L	APHA 2540D	11.7	37.7	38.0	25.7	88.0	28.3	10.3
Chemical Oxygen Demand (COD)	mg O_2/L	HACH Method 8000	27	<20	<20	<20	53	21	50
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	<2	<2	<2	<2	<2	<2	<2
Total Organic Carbon (TOC)	mg/L	APHA 5310B	4.27	4.58	4.15	6.68	5.24	6.31	9.24
Chloride as Cl	mg/L	APHA 4110B	128	10,405	9,856	10,204	3.03	75.8	121
Oil & Grease (Total) by FTIR	mg/L	APHA 5520C/ F	0.54	0.36	0.32	0.26	0.28	0.24	<0.1
Enterococcus	cfu/100ml	APHA 9230C	2,700	700	400	400	200	200	7,300
Chlorophyll-a	mg/m^3	APHA 10200H (2)	<5	22.0	24.5	15.2	5.39	<5	<5
Arsenic as As	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5
Copper as Cu	ug/L	APHA 3125B	<5	7.94	6.61	7.88	<5	<5	<5
Iron as Fe	ug/L	APHA 3125B	<5	<5	7.74	35.5	23.1	<5	258
Mercury as Hg	ug/L	APHA 3125B	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel as Ni	ug/L	APHA 3125B	13.1	8.26	9.96	9.05	<5	<5	<5
Lead as Pb	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5
Zinc as Zn	ug/L	APHA 3125B	6.93	7.28	8.44	8.89	9.61	<5	5.11

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.

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TEST REPORT

Our Reference No.	:	**R181457**	Date Received	: 30/04/2018
Project Code / Ref.	:	-	Date Commenced	: 30/04/2018
			Date Reported	: 22/05/2018
Customer Ref. No.	:	60568492		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Ms Liang Liang		
Sample Description	:	6 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R181457

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 30/04/2018					
			WQ 1	WQ 2	WQ 3	WQ 4	WQ 6	WQ 9
Turbidity	NTU	APHA 2130B	1.9	0.20	2.9	4.6	0.60	1.0
Total Nitrogen as TN	mg/L	APHA 4500-N (C)	1.98	1.61	1.78	1.11	0.50	0.63
Total Phosphorus as TP	mg/L	APHA 4500-P (H)	0.085	0.51	<0.025	<0.025	0.072	0.070
Nitrate as NO_3	mg/L	APHA 4500-NO_3 (I)	4.43	1.77	1.50	0.64	0.93	1.61
Nitrite as NO_2	mg/L	APHA 4500-NO_3 (I)	0.45	0.31	0.22	0.31	0.038	0.074
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	0.53	0.63	0.83	0.97	0.22	0.16
Total Dissolved Solids	mg/L	APHA 2540C	214	6,278	14,350	20,246	306	177
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.041	0.037	<0.01	<0.01	0.032	0.024
Total Suspended Solids	mg/L	APHA 2540D	10.7	21.0	20.7	26.3	<10	<10
Chemical Oxygen Demand (COD)	mg O_2/L	HACH Method 8000	<20	<20	<20	<20	<20	<20
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	<2	<2	2.39	<2	<2	<2
Total Organic Carbon (TOC)	mg/L	APHA 5310B	2.49	3.44	3.03	2.45	1.81	1.94
Chloride as Cl	mg/L	APHA 4110B	9.70	3,240	7,965	11,260	16.8	11.6
Oil & Grease by FTIR	mg/L	APHA 5520C / F	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Enterococcus	cfu/100ml	APHA 9230C	1,000	400	200	100	200	500
Chlorophyll-a	mg/L	APHA 10200H (2)	-	<5	24.3	20.9	<5	<5
Arsenic as As	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5
Copper as Cu	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5
Iron as Fe	ug/L	APHA 3125B	10.9	6.29	11.0	<5	5.94	31.1
Mercury as Hg	ug/L	APHA 3125B	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel as Ni	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5
Lead as Pb	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5
Zinc as Zn	ug/L	APHA 3125B	<5	7.92	6.06	17.5	<5	<5

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.
3. No Sample was received for "WQ 1" to be test for Chlorophyll-a.

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TEST REPORT

Our Reference No.	:	**R181682/1**	Date Received	: 16/05/2018
Project Code / Ref.	:	-	Date Commenced	: 16/05/2018
			Date Reported	: 31/05/2018
Customer Ref. No.	:	60568492		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Ms Liang Liang		
Sample Description	:	2 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R181682/1

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 16/05/2018	
			WQ 5	WQ 10
Total Nitrogen	mg/L	APHA 4500-N (C)	1.69	3.14
Total Phosphorus	mg/L	APHA 4500-P (H)	0.077	0.024
Nitrate as NO_3-N	mg/L	APHA 4500-NO_3 (I)	0.15	0.017
Nitrite as NO_2-N	mg/L	APHA 4500-NO_3 (I)	0.14	<0.02
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	0.49	2.74
Total Dissolved Solids	mg/L	APHA 2540C	24,314	345
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.041	0.013
Total Suspended Solids	mg/L	APHA 2540D	42.7	53.0
Chemical Oxygen Demand (COD)	mg O_2/L	HACH Method 8000	<20	<20
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	6.36	<2
Total Organic Carbon (TOC)	mg/L	APHA 5310B	3.52	1.91
Chloride as Cl	mg/L	APHA 4110B	13,772	97.4
Oil & Grease (Total) by FTIR	mg/L	APHA 5520C	<0.1	<0.1
Enterococcus	cfu/100ml	APHA 9230C	60	2,000
Chlorophyll-a	mg/m^3	APHA 10200H (2)	63.5	<5
Arsenic as As	ug/L	APHA 3125B	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5
Copper as Cu	ug/L	APHA 3125B	<5	<5
Iron as Fe	ug/L	APHA 3125B	204	1,647
Mercury as Hg	ug/L	APHA 3125B	0.46	0.32
Nickel as Ni	ug/L	APHA 3125B	5.33	<5
Lead as Pb	ug/L	APHA 3125B	<5	<5
Zinc as Zn	ug/L	APHA 3125B	9.53	17.9

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.

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TEST REPORT

Our Reference No.	:	**R183788**	Date Received	: 12/09/2018
Project Code / Ref.	:	-	Date Commenced	: 12/09/2018
			Date Reported	: 28/09/2018
Customer Ref. No.	:	-		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Dr. Nguyen Hoai Thanh		
Sample Description	:	8 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R183788

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 12/09/2018							
			WQ2	WQ3	WQ4	WQ5	WQ7	WQ8	WQ9	WQ10
Total Suspended Solids, TSS	mg/L	APHA 2540D	29.0	55.3	44.0	61.3	3.33	37.0	53.3	10.0
Total Dissolved Solids, TDS	mg/L	APHA 2540C	8,383	21,134	25,765	25,920	308	13,681	171	222
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	2.39	3.11	3.91	2.31	<2	<2	2.79	2.71
Chemical Oxygen Demand, COD	mg/L	APHA 5210B	<20	<20	<20	<20	<20	<20	<20	<20
Total Organic Carbon (TOC)	mg/L	APHA 5310B	3.36	3.46	2.79	2.97	1.31	6.22	3.14	2.19
Total Nitrogen as TN	mg/L	APHA 4500-N (C)	1.70	1.64	1.29	1.27	1.95	1.90	3.93	1.27
Nitrate as NO_3	mg/L	APHA 4500-NO_3 (I)	1.00	0.80	0.58	0.57	4.54	0.10	0.045	2.92
Nitrite as NO_2	mg/L	APHA 4500-NO_3 (I)	0.61	0.34	0.44	0.45	0.040	0.035	<0.02	0.17
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	0.62	0.58	0.18	0.23	0.84	1.43	3.65	0.087
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.031	0.067	0.039	0.042	0.012	0.016	<0.01	0.019
Total Phosphorus as TP	mg/L	APHA 4500-P (H)	0.13	0.11	0.071	0.063	0.037	0.055	<0.025	0.053
Oil & Grease (Total) by FTIR	mg/L	APHA 5520C	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloride as Cl	mg/L	APHA 4110B	3,906	12,049	14,360	12,780	76.3	7,077	153	19.5
Enterococcus	cfu/100ml	APHA 9230C	310	82	80	6	110	300	2,500	21,000
Chlorophyll-a	mg/m^3	APHA 10200H (2)	14.2	50.5	88.6	90.6	<5	<5	6.49	6.70
Arsenic as As	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5	<5
Copper as Cu	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5	<5
Iron as Fe	ug/L	APHA 3125B	24.4	11.7	9.56	13.2	29.4	25.1	17.2	89.6
Mercury as Hg	ug/L	APHA 3112B	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel as Ni	ug/L	APHA 3125B	7.20	6.54	<5	<5	<5	<5	<5	<5
Lead as Pb	ug/L	APHA 3125B	<5	<5	<5	<5	<5	<5	<5	<5
Zinc as Zn	ug/L	APHA 3125B	24.3	13.7	5.33	7.32	<5	7.21	<5	17.5

Note:

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TEST REPORT

Our Reference No.	:	**R183932**	Date Received	: 21/09/2018
Project Code / Ref.	:	-	Date Commenced	: 21/09/2018
			Date Reported	: 08/10/2018
Customer Ref. No.	:	-		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Dr. Nguyen Hoai Thanh		
Sample Description	:	3 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R183932

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 20/09/2018		
			WQ4	WQ5 Flood	WQ5 Ebb
Total Suspended Solids, TSS	mg/L	APHA 2540D	49.0	46.7	56.7
Total Dissolved Solids, TDS	mg/L	APHA 2540C	20,976	21,656	23,184
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	3.77	3.43	3.01
Chemical Oxygen Demand, COD	mg/L	APHA 5210B	<20	<20	<20
Total Organic Carbon (TOC)	mg/L	APHA 5310B	2.86	2.92	2.91
Total Nitrogen as TN	mg/L	APHA 4500-N (C)	1.98	1.87	1.76
Nitrate as NO_3	mg/L	APHA 4500-NO_3 (I)	1.44	1.35	1.11
Nitrite as NO_2	mg/L	APHA 4500-NO_3 (I)	0.42	0.44	0.46
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	1.20	1.09	0.74
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.15	0.14	0.12
Total Phosphorus as TP	mg/L	APHA 4500-P (H)	0.21	0.19	0.17
Oil & Grease (Total) by FTIR	mg/L	APHA 5520C	<0.1	<0.1	0.32
Chloride as Cl	mg/L	APHA 4110B	10,101	10,892	11,440
Enterococcus	cfu/100ml	APHA 9230C	270	240	14
Chlorophyll-a	mg/m^3	APHA 10200H (2)	18.8	23.2	28.0
Arsenic as As	ug/L	APHA 3125B	<5	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5	<5
Copper as Cu	ug/L	APHA 3125B	<5	<5	<5
Iron as Fe	ug/L	APHA 3125B	13.4	9.22	13.3
Mercury as Hg	ug/L	APHA 3112B	<0.1	<0.1	<0.1
Nickel as Ni	ug/L	APHA 3125B	6.67	6.61	6.19
Lead as Pb	ug/L	APHA 3125B	<5	<5	<5
Zinc as Zn	ug/L	APHA 3125B	10.0	6.93	5.33

Note:

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TEST REPORT

Our Reference No.	:	**R181889/1**	Date Received	: 01/06/2018
Project Code / Ref.	:	-	Date Commenced	: 01/06/2018
			Date Reported	: 20/06/2018
Customer Ref. No.	:	60568492		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Ms Liang Liang		
Sample Description	:	3 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R181889/1

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 01/06/2018		
			WQ1	WQ2	WQ6
Total Nitrogen	mg/L	APHA 4500-N (C)	1.01	1.11	0.37
Total Phosphorus	mg/L	APHA 4500-P (H)	0.11	0.12	0.18
Nitrate as NO_3-N	mg/L	APHA 4500-NO_3 (I)	0.80	0.68	0.055
Nitrite as NO_2-N	mg/L	APHA 4500-NO_3 (I)	<0.02	0.18	0.057
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	0.011	0.012	<0.01
Total Dissolved Solids	mg/L	APHA 2540C	88.0	139	364
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.045	0.043	0.10
Total Suspended Solids	mg/L	APHA 2540D	14.3	<10	<10
Chemical Oxygen Demand (COD)	mg O_2/L	HACH Method 8000	<20	22	<20
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	<2	<2	<2
Total Organic Carbon (TOC)	mg/L	APHA 5310B	4.68	4.82	4.51
Chloride as Cl	mg/L	APHA 4110B	4.07	23.3	51.6
Oil & Grease (Total) by FTIR	mg/L	APHA 5520C	<0.1	<0.1	<0.1
Enterococcus	cfu/100ml	APHA 9230C	1,300	1,700	510
Chlorophyll-a	mg/m^3	APHA 10200H (2)	<5	<5	<5
Arsenic as As	ug/L	APHA 3125B	<5	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5	<5
Copper as Cu	ug/L	APHA 3125B	<5	<5	7.13
Iron as Fe	ug/L	APHA 3125B	1,473	668	1,217
Mercury as Hg	ug/L	APHA 3125B	<0.1	<0.1	<0.1
Nickel as Ni	ug/L	APHA 3125B	<5	<5	<5
Lead as Pb	ug/L	APHA 3125B	<5	<5	<5
Zinc as Zn	ug/L	APHA 3125B	55.9	40.3	10.3

Note:

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TEST REPORT

Our Reference No.	:	**R182589/1**	Date Received	: 13/06/2018
Project Code / Ref.	:	-	Date Commenced	: 13/06/2018
			Date Reported	: 03/07/2018
Customer Ref. No.	:	60568492		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Ms Liang Liang		
Sample Description	:	4 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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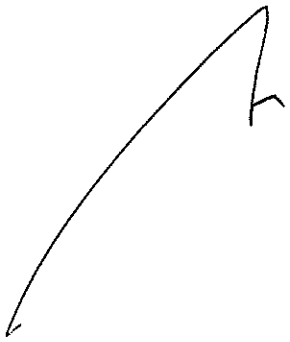
R182589/1

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 13/06/2018			
			WQ 7	WQ 8	WQ 9	WQ 10
Total Nitrogen	mg/L	APHA 4500-N (C)	1.76	1.30	3.39	3.40
Total Phosphorus	mg/L	APHA 4500-P (H)	0.11	0.12	0.15	0.085
Nitrate as NO_3-N	mg/L	APHA 4500-NO_3 (I)	1.09	0.069	1.30	<0.01
Nitrite as NO_2-N	mg/L	APHA 4500-NO_3 (I)	<0.02	0.087	0.27	<0.02
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	0.52	0.79	0.74	3.01
Total Dissolved Solids	mg/L	APHA 2540C	101	1,111	122	374
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.023	0.023	0.031	0.022
Total Suspended Solids	mg/L	APHA 2540D	<10	25.3	<10	30.0
Chemical Oxygen Demand (COD)	mg O_2/L	HACH Method 8000	<20	39	46	<20
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	<2	<2	4.89	<2
Total Organic Carbon (TOC)	mg/L	APHA 5310B	3.86	4.48	10.3	2.85
Chloride as Cl	mg/L	APHA 4110B	6.06	412	13.5	118
Oil & Grease (Total) by FTIR	mg/L	APHA 5520C	<0.1	<0.1	<0.1	<0.1
Enterococcus	cfu/100ml	APHA 9230C	200	1,600	2,200	800
Chlorophyll-a	mg/m^3	APHA 10200H (2)	<5	9.64	<5	8.86
Arsenic as As	ug/L	APHA 3125B	<5	<5	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5	<5	<5
Copper as Cu	ug/L	APHA 3125B	17.8	<5	7.05	<5
Iron as Fe	ug/L	APHA 3125B	1,030	217	123	28.3
Mercury as Hg	ug/L	APHA 3125B	0.11	0.13	<0.1	0.12
Nickel as Ni	ug/L	APHA 3125B	<5	<5	<5	11.8
Lead as Pb	ug/L	APHA 3125B	<5	<5	<5	<5
Zinc as Zn	ug/L	APHA 3125B	41.2	5.25	53.7	<5

Note:

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2. "<" = Less than. The data reported is less than Detection Limit of the test.



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TEST REPORT

Our Reference No.	:	**R182748/1**	Date Received	: 27/06/2018
Project Code / Ref.	:	-	Date Commenced	: 27/06/2018
			Date Reported	: 16/07/2018
Customer Ref. No.	:	60568492		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Ms Liang Liang		
Sample Description	:	2 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R182748/1

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 27/06/2018	
			WQ 3	WQ 4
Total Nitrogen	mg/L	APHA 4500-N (C)	0.71	0.76
Total Phosphorus	mg/L	APHA 4500-P (H)	0.048	0.046
Nitrate as NO_3-N	mg/L	APHA 4500-NO_3 (I)	0.23	0.23
Nitrite as NO_2-N	mg/L	APHA 4500-NO_3 (I)	<0.02	<0.02
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	0.055	0.078
Total Dissolved Solids	mg/L	APHA 2540C	606	473
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.019	0.020
Total Suspended Solids	mg/L	APHA 2540D	32.7	44.7
Chemical Oxygen Demand (COD)	mg O_2/L	HACH Method 8000	38	40
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	<2	<2
Total Organic Carbon (TOC)	mg/L	APHA 5310B	3.55	3.64
Chloride as Cl	mg/L	APHA 4110B	233	178
Oil & Grease (Total) by FTIR	mg/L	APHA 5520C	<0.1	<0.1
Enterococcus	cfu/100ml	APHA 9230C	18,000	26,000
Chlorophyll-a	mg/m^3	APHA 10200H (2)	<5	<5
Arsenic as As	ug/L	APHA 3125B	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5
Copper as Cu	ug/L	APHA 3125B	5.76	10.8
Iron as Fe	ug/L	APHA 3125B	901	1,592
Mercury as Hg	ug/L	APHA 3125B	0.25	0.33
Nickel as Ni	ug/L	APHA 3125B	<5	<5
Lead as Pb	ug/L	APHA 3125B	<5	<5
Zinc as Zn	ug/L	APHA 3125B	41.5	78.2

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.

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TEST REPORT

Our Reference No.	:	**R183662**	Date Received	: 04/09/2018
Project Code / Ref.	:	-	Date Commenced	: 04/09/2018
			Date Reported	: 17/09/2018
Customer Ref. No.	:	-		
Customer Name	:	AECOM Singapore Pte Ltd		
Customer Address	:	300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	:	Dr. Nguyen Hoai Thanh		
Sample Description	:	4 Water Samples		
RESULTS:		Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R183662

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 04/09/2018			
			WQ2 NF	WQ3 NF	WQ6-1	WQ6-3
Total Suspended Solids, TSS	mg/L	APHA 2540D	15.3	11.3	13.0	4.67
Total Dissolved Solids, TDS	mg/L	APHA 2540C	85.0	374	339	323
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	<2	<2	<2	<2
Chemical Oxygen Demand, COD	mg/L	APHA 5210B	<20	27	<20	36
Total Organic Carbon (TOC)	mg/L	APHA 5310B	3.49	4.08	2.68	7.37
Total Nitrogen as TN	mg/L	APHA 4500-N (C)	0.85	1.24	1.40	0.70
Nitrate as NO_3	mg/L	APHA 4500-NO_3 (I)	1.53	2.05	0.13	0.18
Nitrite as NO_2	mg/L	APHA 4500-NO_3 (I)	0.095	0.13	0.028	0.033
Ammonia as NH_4-N	mg/L	APHA 4500-NH_3 (H)	0.13	0.19	1.31	0.031
Orthophosphates as PO_4-P	mg/L	APHA 4500-P (G)	0.017	0.022	0.030	0.048
Total Phosphorus as TP	mg/L	APHA 4500-P (H)	0.037	0.046	0.070	0.099
Oil & Grease (Total) by FTIR	mg/L	APHA 5520C	<0.1	<0.1	<0.1	<0.1
Chloride as Cl	mg/L	APHA 4110B	15.7	145	34.2	63.7
Enterococcus	cfu/100ml	APHA 9230C	6,500	7,100	150	34,000
Chlorophyll-a	mg/m^3	APHA 10200H (2)	<5	6.37	<5	<5
Arsenic as As	ug/L	APHA 3125B	<5	<5	<5	<5
Cadmium as Cd	ug/L	APHA 3125B	<5	<5	<5	<5
Chromium as Cr	ug/L	APHA 3125B	<5	<5	<5	<5
Copper as Cu	ug/L	APHA 3125B	5.13	<5	<5	<5
Iron as Fe	ug/L	APHA 3125B	46.8	49.5	<5	464
Mercury as Hg	ug/L	APHA 3112B	<0.1	<0.1	<0.1	<0.1
Nickel as Ni	ug/L	APHA 3125B	<5	<5	<5	<5
Lead as Pb	ug/L	APHA 3125B	<5	<5	<5	<5
Zinc as Zn	ug/L	APHA 3125B	34.4	33.1	6.45	9.44

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.



Appendix Q

Model Results and Evaluation Framework

Disclaimer: All maps are to be used solely for this EIS, and not for any other purpose. All maps are not to scale and are for illustrative purposes only.

This appendix provides the model setup parameters which applied for hydrodynamic modelling of this EIS. The simulation result is presented in this appendix as the discussion of the model result has been presented in the main EIS document. The evaluation framework for sensitive receptors such as mangrove and aquatic life have been described in respective section.

Q1 SWMM Modelling

The Storm Water Management Model (SWMM) by US Environmental Protection Agency was used to simulate the hydrological conditions of the catchments surrounding the study area.

Q1.2 Model Result

For hydrological modelling, simulated total discharges of Sungei Cina for existing and proposed catchment area were presented in Figure Q-1 and Figure Q-2.

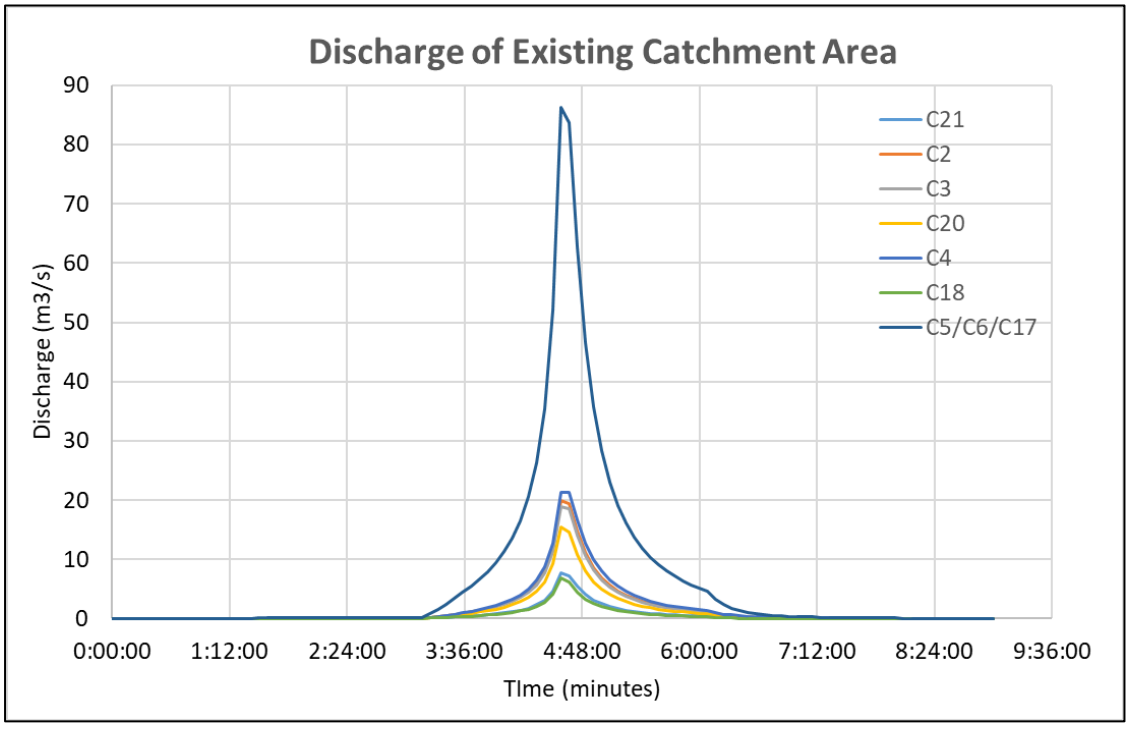


Figure Q-1: Graph of Discharges Flow of Current Catchment Area

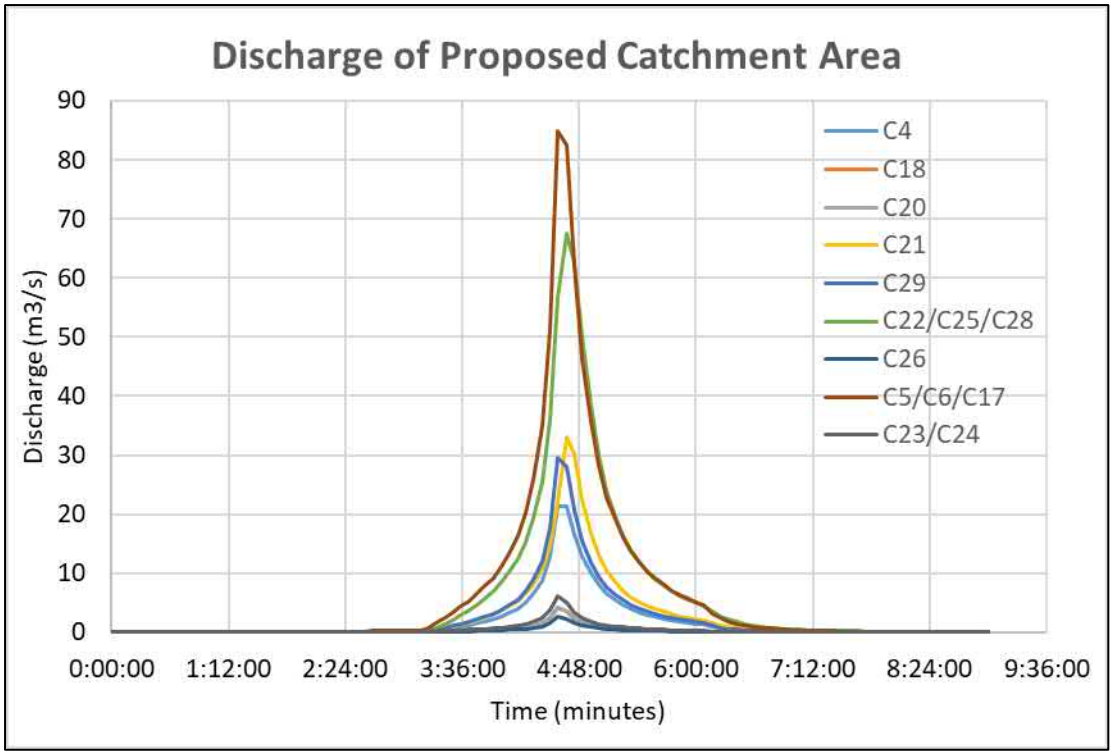


Figure Q-2: Graph of Discharges Flow of Future Catchment Area

Q2 Delft3D Modelling

Delft3D is a numerical software developed by Deltares. It is 2D/3D modelling system to investigate hydrodynamics, sediment transport and morphology, water quality for fluvial, estuarine and coastal environments. The model simulates multi-dimensional hydrodynamic processes and calculates non-steadyflow and transport phenomena that result from tidal and meteorological forcing on a culvilinear, boundary fitted grid.

The Delft3D hydrodynamic model includes the following standard features:

- Tidal forcing;
- The effect of the Earth's rotation (Coriolis force);
- Density driven flows (pressure gradients terms in the momentum equations);
- Advection-diffusion solver included to compute density gradients with an optional facility to treat very sharp gradients in the vertical;
- Space and time varying wind and atmospheric pressure;
- Advanced turbulence models to account for the vertical turbulent viscosity and diffusivity based on the eddy viscosity concept;

Q2.1 Model Setup

Q2.1.1 Boundary Condition

For strait boundary, one open boundary is placed at East of Johor Strait and one close boundary of Singapore-Johor Causeway Link. The model was extended from East Johor Strait to upstream weir of Sungei Cina so one river boundary is set at end of upstream weir of Sungei Cina.

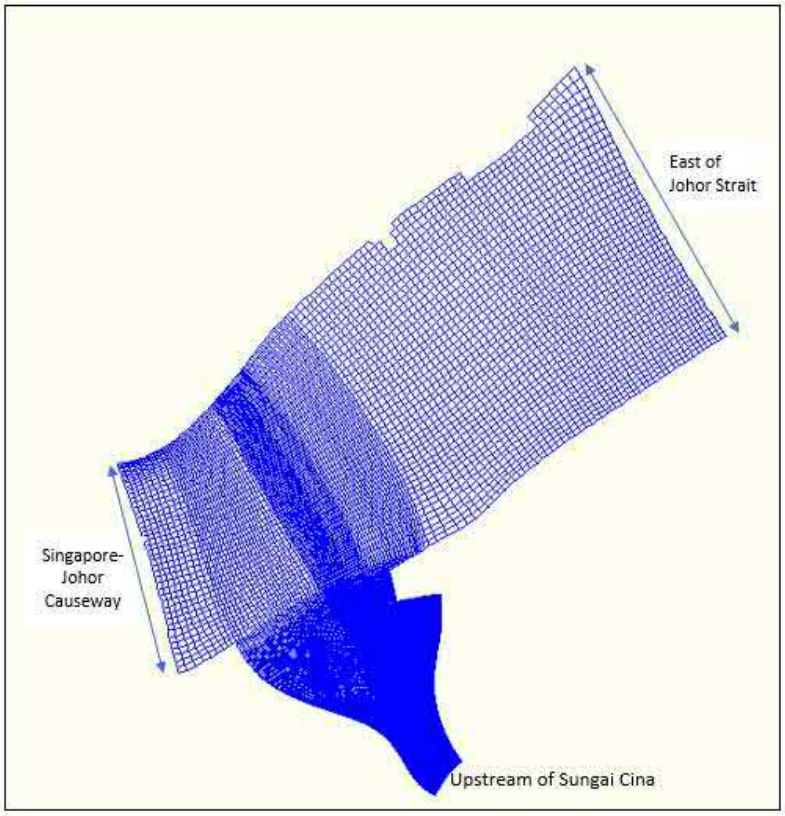


Figure Q-3: Grid Boundary Condition

Q2.1.2 Simulation Scenario and Period

Four tide scenarios were running simulation for Existing and Proposed Condition as shown in Figure Q-4. The duration of 19 days of tidal cycle at Singapore Strait starts from 1 July 2018 to 19 July 2018. Simulation duration for Neap and Spring Tides are as follows:

- Neap Low Tides: 7 July 2018 19:00 – 8 July 2018 4:00
- Neap High Tides: 8 July 2018 14:00 – 8 July 2018 23:00
- Spring Low Tides: 14 July 2018 1:05 – 14 July 2018 10:05
- Spring High Tides: 14 July 2018 19:50 – 15 July 2018 4:50

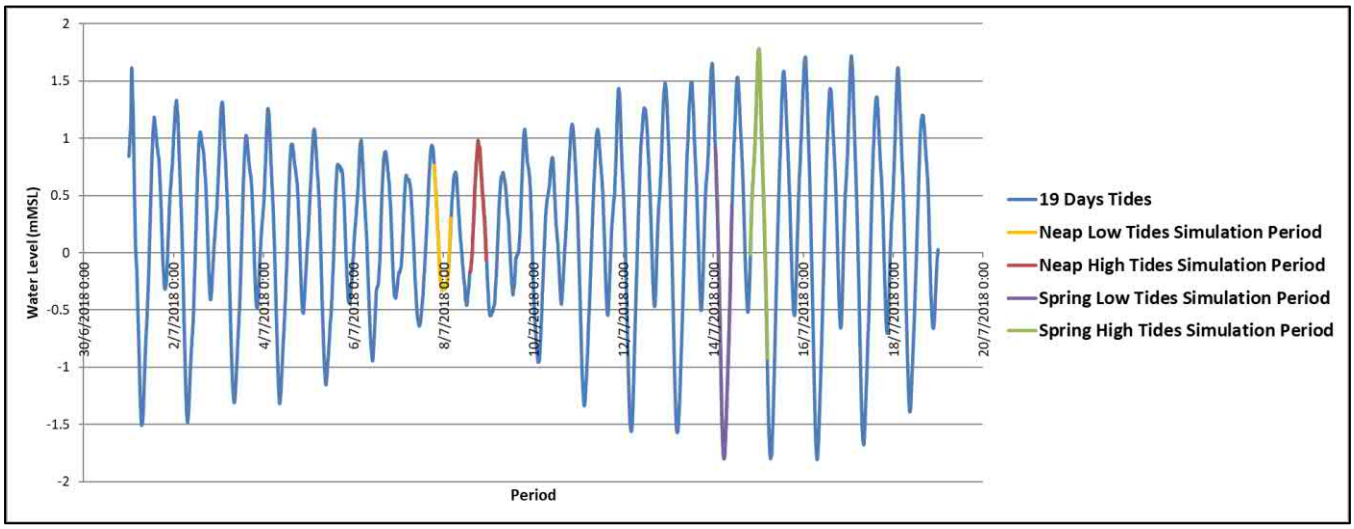


Figure Q-4: Tidal level for Singapore Strait

Q2.1.3 Model Input Parameters

The parameters applied for hydrodynamics model for this EIS are summarised in Table Q-1.

Table Q-1: Model parameters

Input Parameters	Description
Time Step	0.05 min
Horizontal eddy viscosity	0.28
Horizontal eddy diffusivity	1
Bed roughness	Varying in domain

Q2.2 Model Result

Q2.2.1 Construction Phase – Impact on TSS Concentration

The extreme scenario for simulation for TSS Concentration during return period of 5-year storm was Neap High Tide and the result is showed in Figure Q-5.

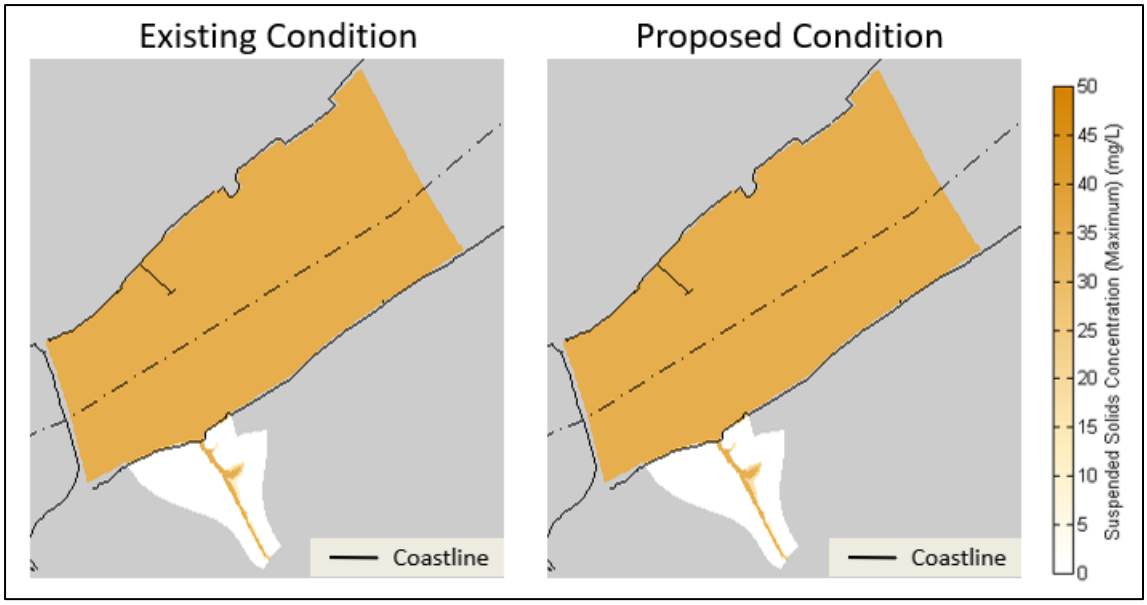


Figure Q-5: Difference of Maximum TSS concentration for Existing and Proposed Condition (the alignment of International Border: sourced from OneMap, 2021)

Q2.2.1.1 Mangroves

Tolerance to Suspended Sediments

A study carried out in Cairns, Australia, demonstrated that 80% of suspended sediments brought in to the mangroves from coastal waters at spring flood tide were trapped in the mangroves (Furukawa *et al.* 1997). Sediment particles are carried in suspension into mangrove forests during high tide where they are maintained in suspension due to the turbulence caused by mangrove structures. The particles settle in the mangroves only around low tide, when water turbulence is reduced and when water velocity is not large enough to carry the particles back to the estuary (Kathiresan 2003, Wolanski 1995). However, the vertical accretion of suspended particles also depends on concentration and rare events such as tropical cyclones or floods in nearby rivers (Furukawa *et al.* 1997).

Further observations at Cocoa Creek, a mangrove creek system near Townsville, Australia suggest a complex but strong relationship existing between tidal hydrodynamics, sediment transport and geomorphology (Bryce *et al.* 2003). Given this complexity, there are no clear estimates of thresholds for sediment fluxes in mangroves. However, mangroves can be considered to be fully tolerant to the range of suspended sediment loads that may be generated outside the work area from construction activities.

Tolerance to Sedimentation

Mangroves are able to withstand gradual sediment accumulation, as this is part of their natural, dynamic state. However, acute increases in sedimentation due to natural or anthropogenic dumping of material can result in burial of pneumatophores, reducing their ability to supply oxygen to the root system (Wolanski 1995). The most sensitive components of the mangrove ecosystem to sedimentation impacts are seedlings and pneumatophores, as both have a relatively small vertical extent, and may therefore be partially or fully buried by high sedimentation rates within a short period of time.

In simple terms, there are two main types of mangrove root structures: those with stilt roots (e.g. Rhizophora) and those with pneumatophores (e.g. Avicennia). Mangrove root structures with pneumatophores are normally located on the outer fringe of the mangrove forest with higher tidal range and are thus at higher risk of sediment ingress. Some field data regarding tolerance levels of mangroves to levels of sedimentation are available. A study by Terrados et al. (1997) showed that

sediment burial of 8cm and above retarded growth and increased mortality of Rhizophora apiculate seedlings as a result of altered oxygen supply to the hypocotyl root system. Experimental field work in Thailand carried out by Thampanya et al. (2002) on seedlings of Avicennia officinalis, Rhizophora mucronata and Sonneratia caseolaris showed that Avicennia officinalis was five times more sensitive to burial than Sonneratia caseolaris, whilst Rhizophora mucronata showed no significant difference between the control and burial treatments (0, 4, 8, 16, 24 and 32 cm). There was 100% mortality in Avicennia officinalis after 225 days at 32 cm burial, and almost 90% mortality at 24cm. These figures are consistent with the fact that the pneumatophores of Avicennia typically extend 10cm but can reach 30 cm or more above ground level, such that it requires extensive and prolonged sedimentation to have any effect on respiration.

Tolerance to Salinity

Degree of salinity can be categorised into oligohaline waters of low salinity (0.5 - 5 ppt), mesohaline waters of intermediate salinity (5 - 18 ppt) and polyhaline waters of high salinity (18 - 30 ppt). The term of brackish water refers to oligohaline to weakly mesohaline waters. Specific readings of salinity within a mangrove may range from 0.5 - 35 ppt (Ng and Sivasothi, 1999). Wide range of salinity may due to tidal flow as when sea floods the mangrove, salinity is polyhaline seawater.

When sea recedes, tide pools become hypersaline (> 30 ppt) especially during long exposure during lower low water springs. The influence of freshwater runoff becomes significant particularly during monsoons in the mangrove. Small streams in mangroves are oligohaline and may even freshwater. The effect of freshwater inflow is considerable for narrow mangroves.

According to Ng and Sivasothi (1999), within Straits of Johor and Singapore, the pattern of salinity of the sea does exhibit two maximas (March/April and October/November) and two minimas (January and July/August), ranging between 28.5 and 32 ppt.

Q2.2.1.2 Fisheries Tolerance to Suspended Sediments

According to water quality guideline for freshwater fisheries of Canadian Council Ministers Environment (1994), the suspended solids should not exceed 10mg/L when background suspended solids concentration equal to or less than 100mg/L. Suspended solids should not exceed 10% of background concentration when background concentration are greater than 100mg/L.

Manitoba Department of Environment suggests that the maximum acceptable concentration for nonfilterable residue is 25 mg/L.

Lloyd (1985) concluded that an increase in turbidity of 25 NTU in shallow, clearwater systems may potentially reduce stream primary productivity by 13-50% or more, and be associated with an increase in suspended sediment concentration of approximately 25 – 100 mg/L. A 5 NTU increase in turbidity in clear water systems may reduce the primary productivity by 3 – 13% or more and be associated with an increase in suspended sediment concentration of approximately 5 – 25 mg/L.

Based on literature review as above, the suspended sediment thresholds for aquatic life were listed in Table Q-2.

Table Q-2: Criteria of TSS concentration limit for aquatic life

Severity	Description
No Impact	Excess TSS <5 mg/L
Slight Impact	5 mg/L <Excess TSS <10 mg/L
Minor Impact	10 mg/L <Excess TSS <25 mg/L
Moderate Impact	25 mg/L <Excess TSS <400 mg/L
Major Impact	Excess TSS > 400 mg/L

Q2.2.2 Operational Phase – Impact on Water Level

Figure Q-6 shows the water level of Existing Condition during peak flow of four tide scenarios. Figure Q-7 shows the water level of Proposed Condition (Option 1) during peak flow of four tide scenarios.

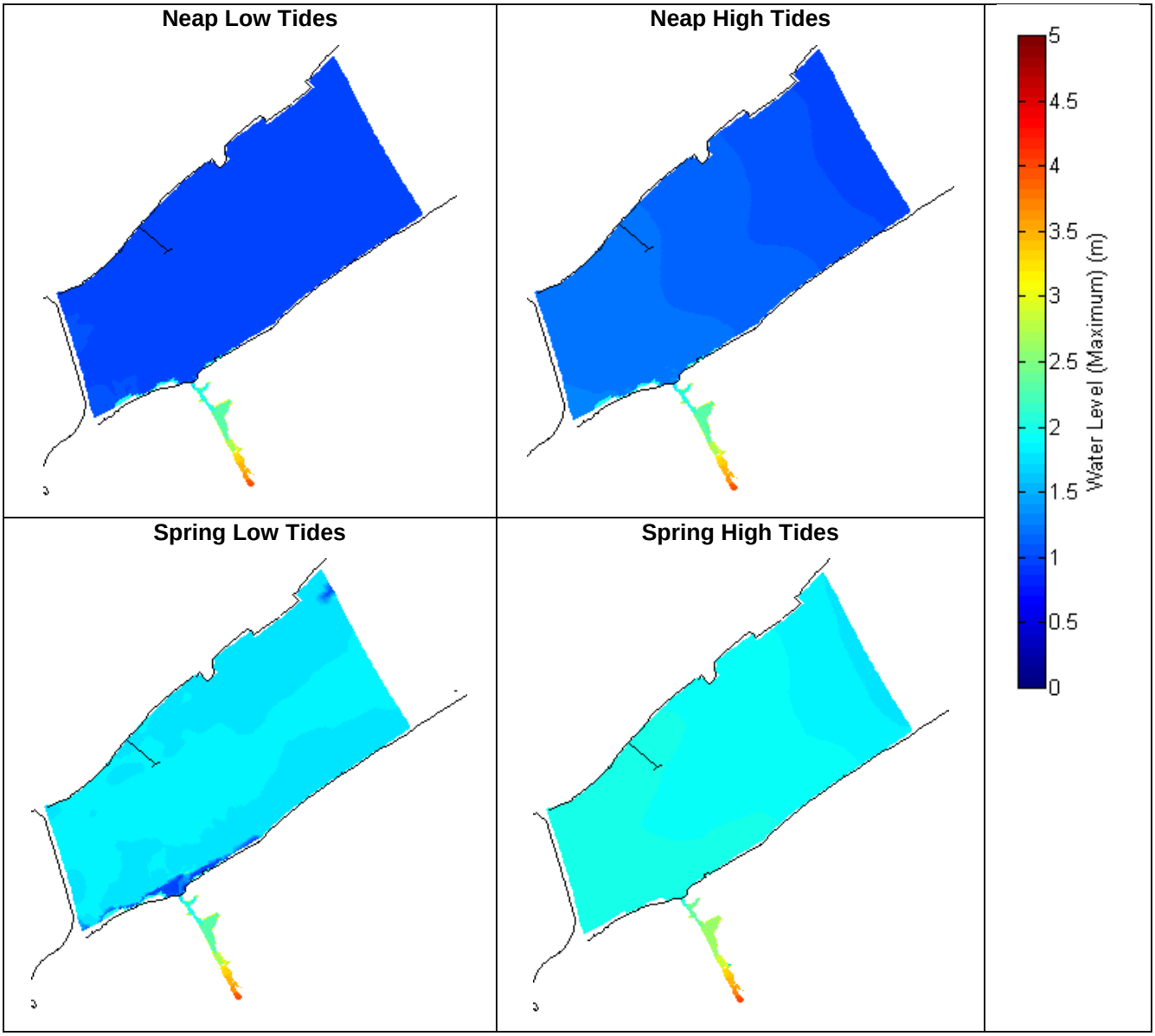


Figure Q-6: Maximum Water Level for Existing Condition

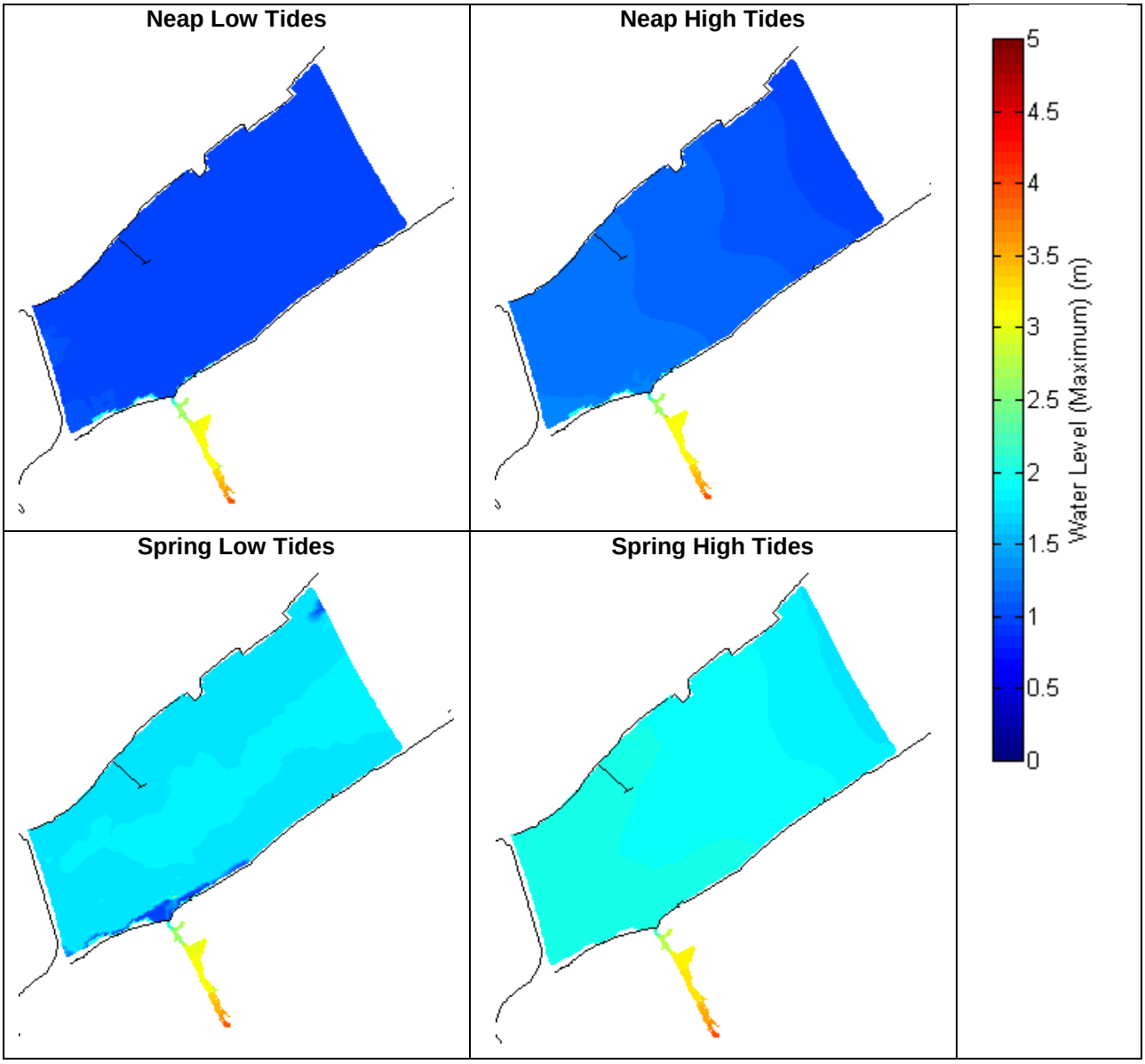


Figure Q-7: Maximum Water Level for Proposed Condition (Option 1)

The water level assessment for Neap High Tide and Spring High Tide for Option 2 is presented in Figure Q-8. Overflow assessment for Existing and Proposed condition are tabulated in Table Q-3 and Table Q-4.

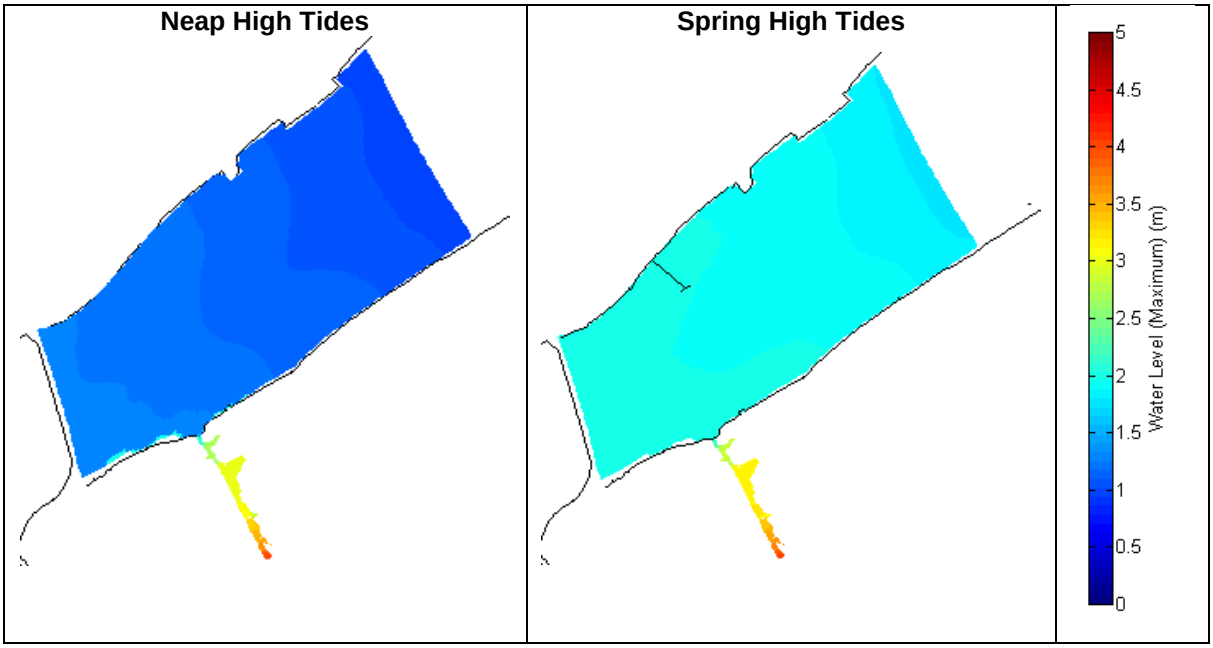


Figure Q-8: Maximum Water Level for Proposed Condition (Option 2)

Table Q-3: Overflow Condition during Spring High Tides under Existing Condition

Points	Overflow during Spring High Tides under Existing Condition					
	Water Level at Peak Discharge (mMSL)	Depth of left bank (mMSL)	Depth of right bank (mMSL)	Water Level at left bank (m)	Water Level at right bank (m)	Remark
L1	3.79	-4.72	-4.62	-0.93	-0.83	No overflow
S1	3.39	-2.93	-3	0.46	0.39	Overflow at both river banks
L2	2.85	-4.52	-4.23	-1.67	-1.38	No overflow
S2	2.84	-3.04	-2.59	-0.20	0.25	Overflow to right pathway only
L3	2.51	-3.2	-4.39	-0.69	-1.88	No overflow
L4	1.87	-2.46	-2.68	-0.59	-0.81	No overflow
L5	1.86	N/A	N/A	N/A	N/A	At sea area

Table Q-4: Overflow Condition during Spring High Tides under Proposed Condition

Points	Overflow during Spring High Tides under Existing Condition					
	Water Level at Peak Discharge (mMSL)	Depth of left bank (m)	Depth of right bank (m)	Increased Water Level at left bank (m)	Increased Water Level at right bank (m)	Remark
L1	3.80	-4.72	-4.62	-0.92	-0.82	No overflow
S1	3.41	-2.93	-3	0.48	0.41	Overflow at both river banks
L2	2.93	-4.52	-4.23	-1.59	-1.30	No overflow
S2	3.26	-3.04	-2.82	0.22	0.44	Overflow to the right pathway and left bank
L3	2.75	-3.2	-4.39	-0.45	-1.64	No overflow
L4	1.97	-2.46	-2.68	-0.49	-0.71	No overflow
L5	1.89	N/A	N/A	N/A	N/A	At sea area

Q2.2.3 Operational Phase – Impact on Depth Averaged Velocity

Figure Q-9 presents the maximum depth averaged velocity for Existing and Proposed Condition (Option 1) during Neap High Tide. Major changes of velocity during peak flow are at the river mouth area of Sungei Cina. Although there is not specific tolerance limits relevant to current speeds and directions, there are common practice principles that for expert assessment of the risk of impact, without the need to resort to navigation simulations as following:

- Avoidance of the creation of strong eddies
- Avoidance of the creation of shear zones
- Avoidance of increases of current speeds above 2.5knots (equivalent to 1.28m/s) in berthing areas
- Avoidance of increases of current speeds above 3.5knots (equivalent to 1.80m/s) in navigation areas
- Avoidance of reduction in slackwater duration.

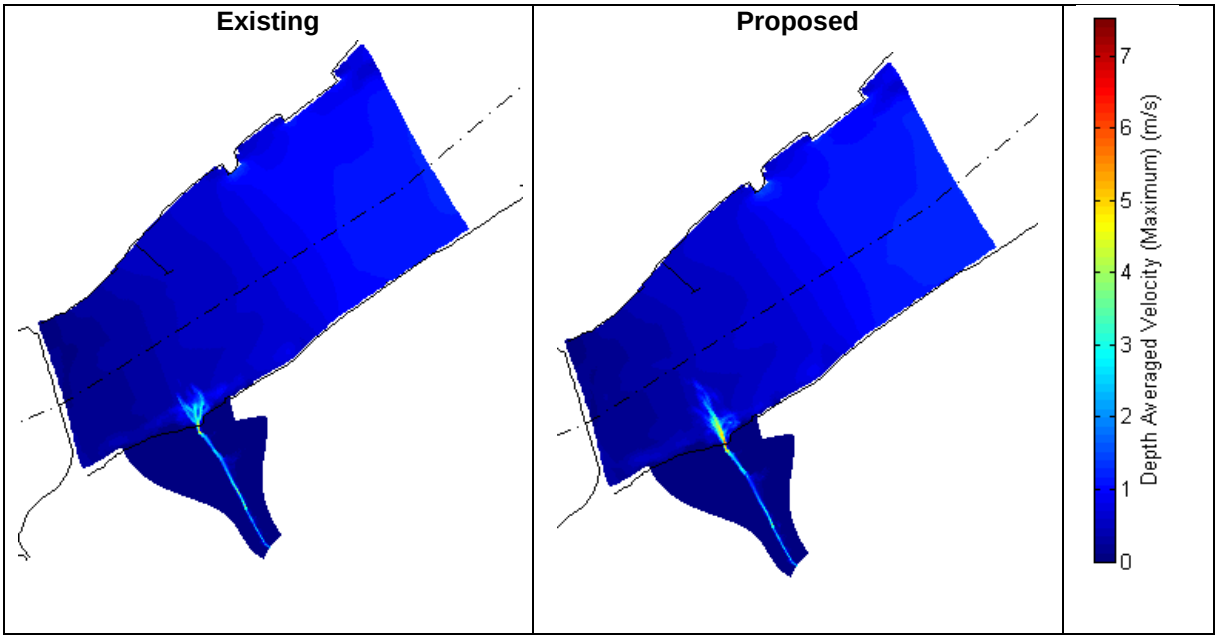


Figure Q-9: Maximum Depth Averaged Velocity for Existing and Proposed Condition (the alignment of International Border: sourced from OneMap, 2021)

Q2.2.4 Operational Phase – Impact on Salinity Concentration

Figure Q-10 shows the maximum salinity for Existing and Proposed Condition during peak flow for Neap High Tide scenario.

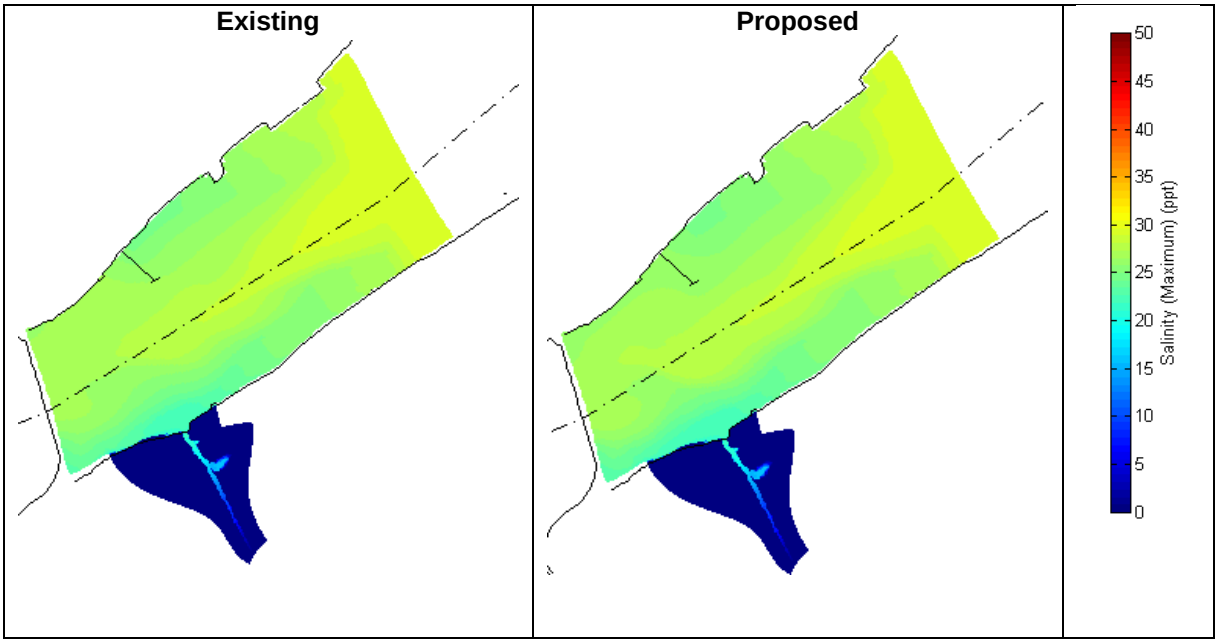


Figure Q-10: Maximum Salinity for Existing and Proposed Condition during Neap High Tide (the alignment of International Border: sourced from OneMap, 2021)

Appendix **R**

Baseline Groundwater Quality Laboratory Results

Marchwood Laboratory Services Pte Ltd
116 Tuas South Ave 2
West Point Bizhub
Singapore 637163
Tel: +65 6790 0118
Fax: +65 6790 0091
www.mls.sg
Co. Reg No. : 201422686C

TEST REPORT

Our Reference No.	: **R181864**	Date Received	: 31/05/2018
Project Code / Ref.	: -	Date Commenced	: 31/05/2018
		Date Reported	: 07/06/2018
Customer Ref. No.	: -		
Customer Name	: AECOM Singapore Pte Ltd		
Customer Address	: 300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	: Mr. Tom Stallard		
Sample Description	: 4 Water Samples		
RESULTS:	Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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2) The results in this report only apply to the sample received/analysed.
3) MLS agrees to use reasonable diligence in the performance of the service.
4) The results reported herein have been performed in accordance with the terms of accreditation under the Singapore Accreditation Council.

R181864

RESULTS:

Test Parameter	Unit	Test Method	MW-01	MW-02	MW-03	MW-04
			31/05/2018	31/05/2018	31/05/2018,1446 hrs	31/05/2018
Sulfate as SO_4	mg/L	APHA 4110B	2.19	388	10.9	7.43
Chloride as Cl	mg/L	APHA 4110B	33.3	4580	77.1	2.96
Calcium as Ca	mg/L	APHA 3120B	157	123	204	4.73
Magnesium as Mg	mg/L	APHA 3120B	10.6	247	63.7	0.58
Bicarbonate Alkalinity as $CaCO_3$	mg/L	APHA 2320B / 4500-CO_2 (D)	399	531	2,917	11.0
Sodium as Na	mg/L	APHA 3120B	14.4	2,432	186	3.52
Potassium as K	mg/L	APHA 3120B	25.2	178	292	1.69
Carbonate Alkalinity as $CaCO_3$	mg/L	APHA 2320B / 4500-CO_2 (D)	0.12	2.74	2.74	<0.1

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.

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Co. Reg No. : 201422686C

TEST REPORT

Our Reference No.	: **R181419/2**	Date Received	: 26/04/2018
Project Code / Ref.	: -	Date Commenced	: 26/04/2018
		Date Reported	: 09/05/2018
Customer Ref. No.	: 60568492		
Customer Name	: AECOM Singapore Pte Ltd		
Customer Address	: 300 Beach Road #03-00 The Concourse Singapore 199555		
Attention To	: Ms Liang Liang		
Sample Description	: 7 Water Samples		
RESULTS:	Refer to Page 2		

Tan Thuan Piang
Laboratory Manager

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R181419/2

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 26/04/2018			
			WQ 1	WQ 2	WQ 3	WQ 4
Sulfate as SO_4	mg/L	APHA 4110B	32.0	1,187	1,143	1,063
Chloride as Cl	mg/L	APHA 4110B	128	10,405	9,856	10,204
Calcium as Ca	mg/L	APHA 3120B	50.4	245	234	244
Magnesium as Mg	mg/L	APHA 3120B	9.01	661	638	667
Bicarbonate Alkalinity as $CaCO_3$	mg/L	APHA 2320B / 4500-CO_2 (D)	99.6	118	116	114
Sodium as Na	mg/L	APHA 3120B	368	5,183	4,986	5,236
Potassium as K	mg/L	APHA 3120B	15.3	312	298	317
Carbonate Alkalinity as $CaCO_3$	mg/L	APHA 2320B / 4500-CO_2 (D)	0.36	0.31	0.31	0.29

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.

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www.mls.sg
Co. Reg No. : 201422686C

TEST REPORT

Our Reference No. : **R181682/2**
Project Code / Ref. : -

Customer Ref. No. : 60568492
Customer Name : AECOM Singapore Pte Ltd
Customer Address : 300 Beach Road
#03-00 The Concourse
Singapore 199555

Attention To : Ms Liang Liang

Sample Description : 2 Water Samples

Date Received : 16/05/2018
Date Commenced : 16/05/2018
Date Reported : 31/05/2018

RESULTS:

Test Parameter	Unit	Test Method	Sampling Date: 16/05/2018	
			WQ5	WQ10
Sulfate as SO_4	mg/L	APHA 4110B	1,576	3.30
Chloride as Cl	mg/L	APHA 4110B	13,772	97.4
Calcium as Ca	mg/L	APHA 3120B	286	26.7
Magnesium as Mg	mg/L	APHA 3120B	857	7.58
Bicarbonate Alkalinity as $CaCO_3$	mg/L	APHA 2320B / 4500-CO_2 (D)	105	102
Sodium as Na	mg/L	APHA 3120B	6,016	49.8
Potassium as K	mg/L	APHA 3120B	360	5.12
Carbonate Alkalinity as $CaCO_3$	mg/L	APHA 2320B / 4500-CO_2 (D)	0.086	0.26

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.

Tan Thuan Piang
Laboratory Manager

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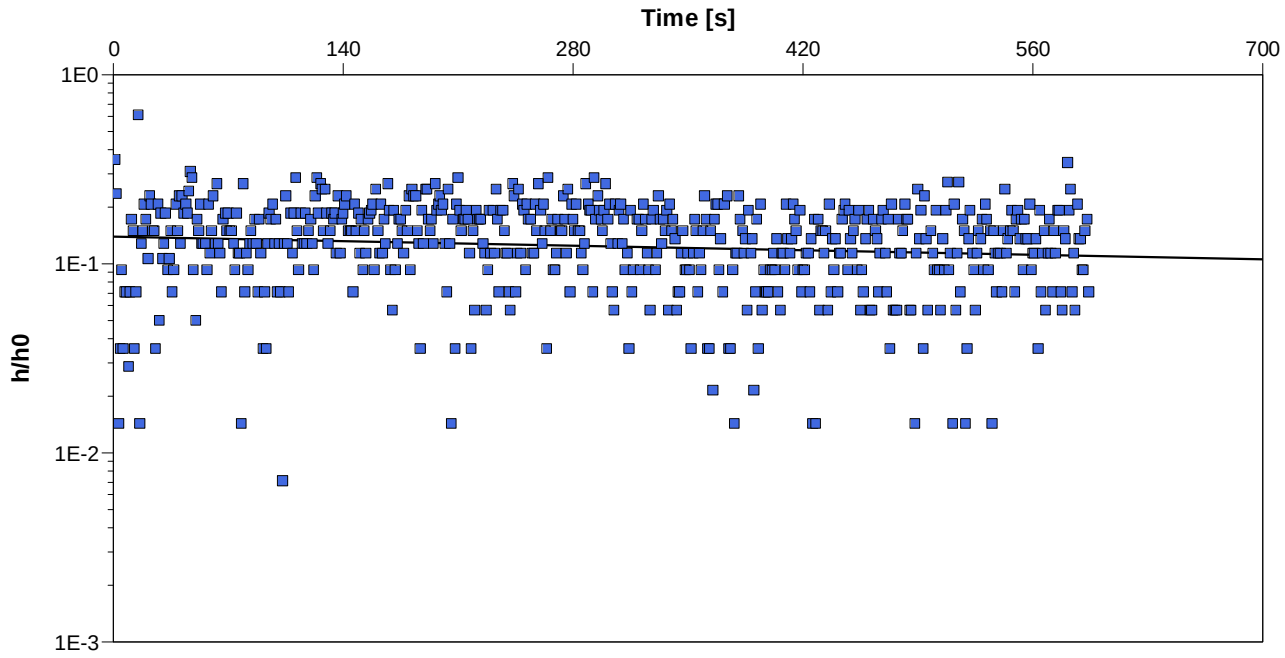
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Appendix S

Slug Test Analysis Report

	Slug Test Analysis Report
	Project: Woodlands
	Number: 60568492
	Client: Housing & Development Board

Location: Singapore	Slug Test: MW1	Test Well: MW1
Test Conducted by: Thomas Stallard		Test Date: 1/06/2018
Analysis Performed by: Graham Hawkes	MW1	Analysis Date: 28/06/2018
Aquifer Thickness: 10.00 m		

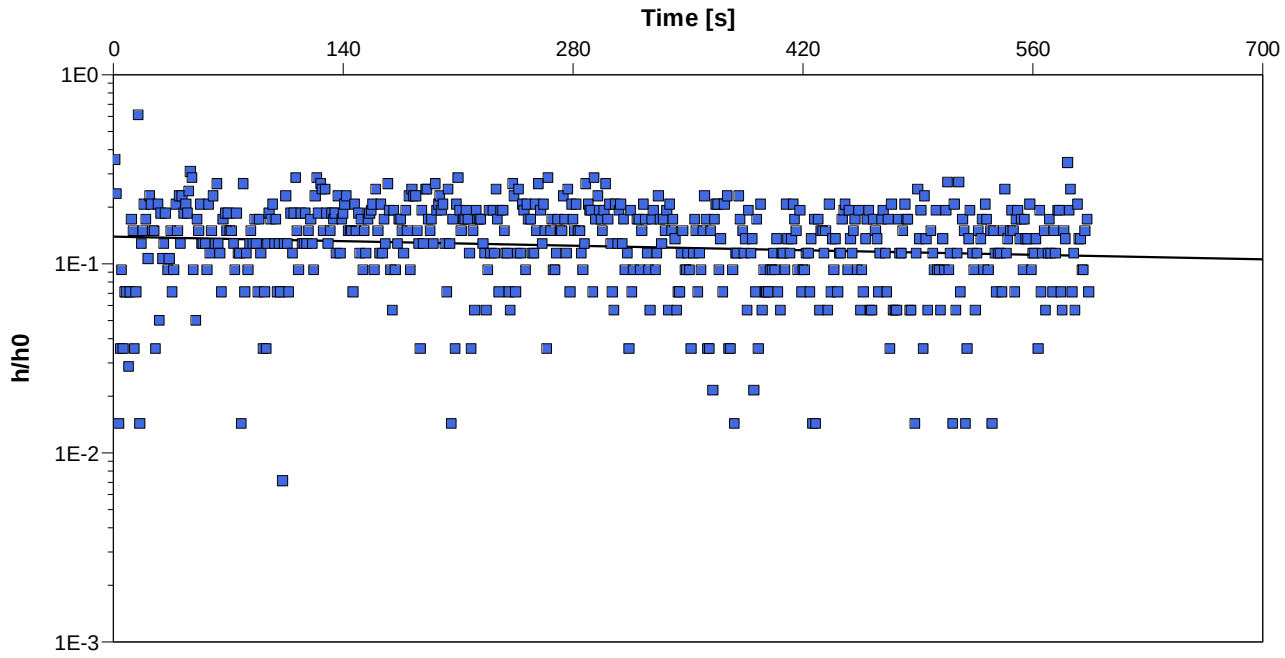


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]	
MW1	1.06×10^{-2}	

	Slug Test Analysis Report
	Project: Woodlands
	Number: 60568492
	Client: Housing & Development Board

Location: Singapore	Slug Test: MW1	Test Well: MW1
Test Conducted by: Thomas Stallard		Test Date: 1/06/2018
Analysis Performed by: Graham Hawkes	MW1	Analysis Date: 28/06/2018
Aquifer Thickness: 10.00 m		

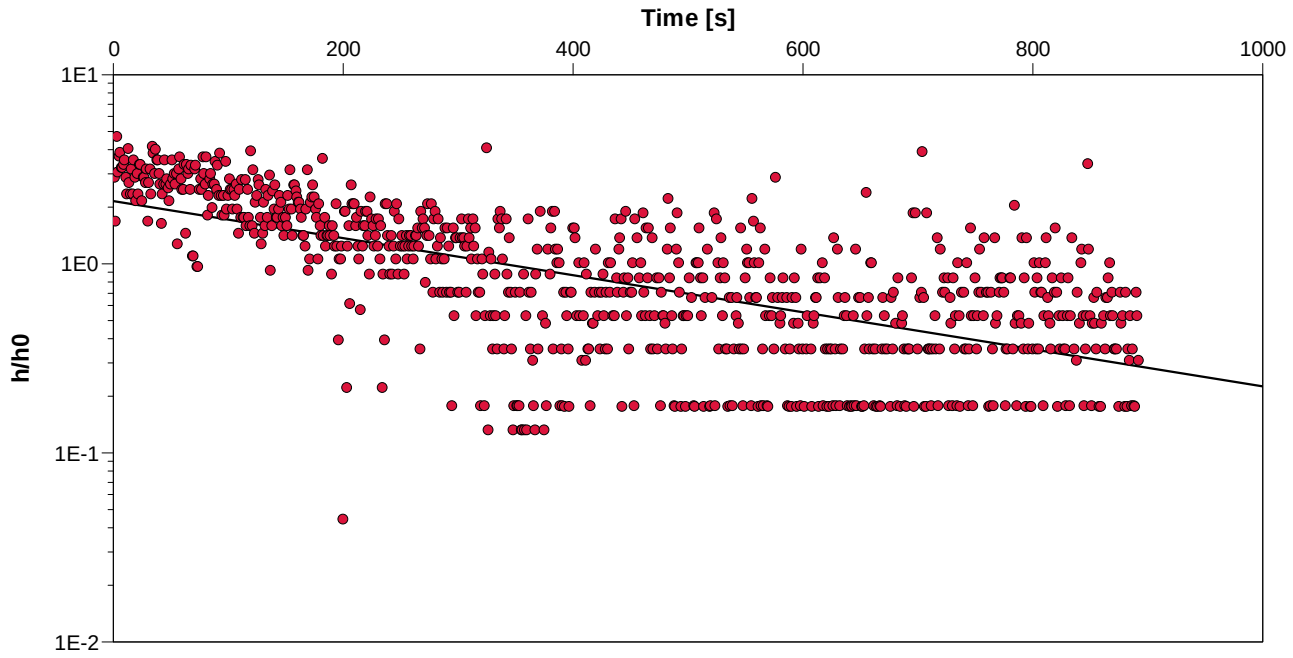


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]	
MW1	1.37×10^{-2}	

	Slug Test Analysis Report
	Project: Woodlands
	Number: 60568492
	Client: Housing & Development Board

Location: Singapore	Slug Test: MW2	Test Well: MW2
Test Conducted by: Thomas Stallard		Test Date: 1/06/2018
Analysis Performed by: Graham Hawkes	MW2	Analysis Date: 28/06/2018
Aquifer Thickness: 10.00 m		

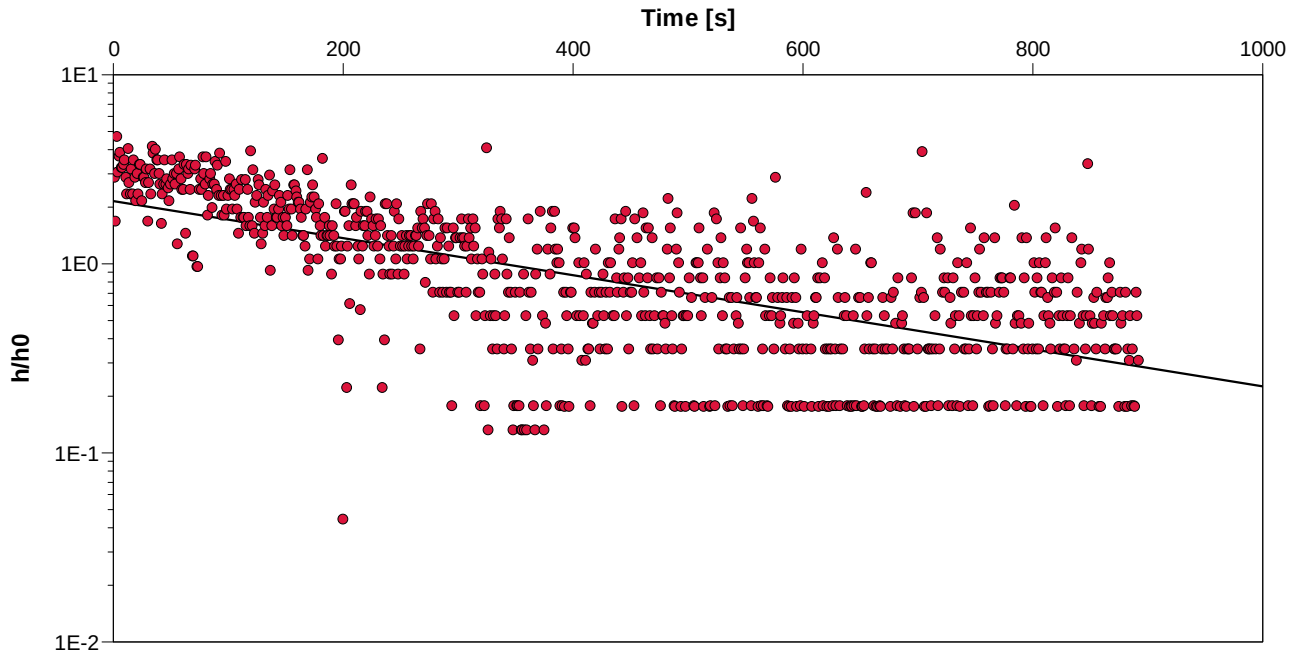


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]	
MW2	5.68×10^{-2}	

	Slug Test Analysis Report
	Project: Woodlands
	Number: 60568492
	Client: Housing & Development Board

Location: Singapore	Slug Test: MW2	Test Well: MW2
Test Conducted by: Thomas Stallard		Test Date: 1/06/2018
Analysis Performed by: Graham Hawkes	MW2	Analysis Date: 28/06/2018
Aquifer Thickness: 10.00 m		

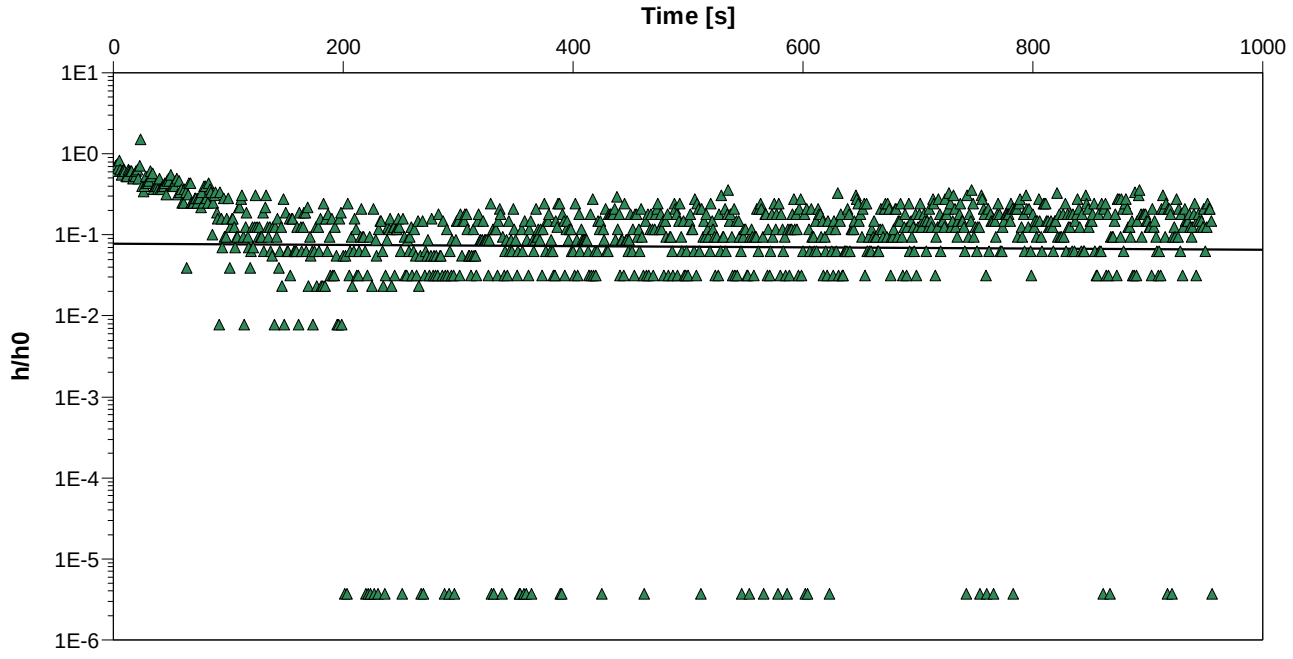


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]	
MW2	7.34×10^{-2}	

	Slug Test Analysis Report
	Project: Woodlands
	Number: 60568492
	Client: Housing & Development Board

Location: Singapore	Slug Test: MW3	Test Well: MW3
Test Conducted by: Thomas Stallard		Test Date: 1/06/2018
Analysis Performed by: Graham Hawkes	MW3	Analysis Date: 28/06/2018
Aquifer Thickness: 10.00 m		

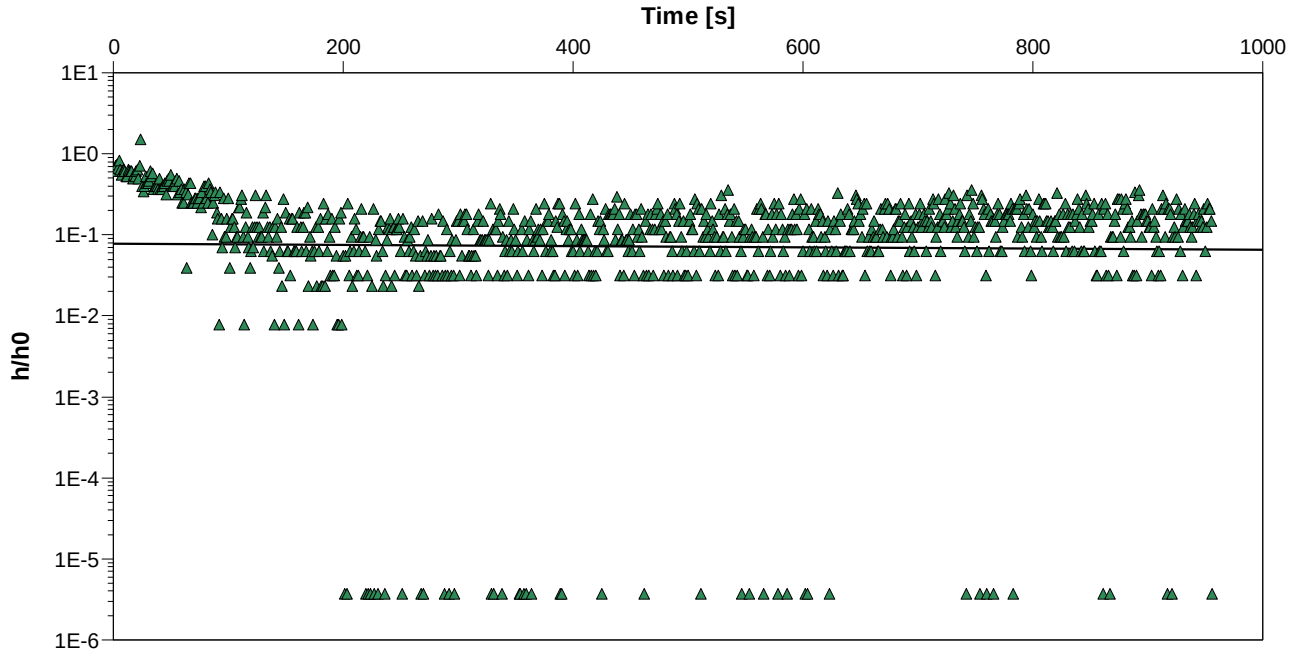


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]	
MW3	3.58×10^{-3}	

	Slug Test Analysis Report
	Project: Woodlands
	Number: 60568492
	Client: Housing & Development Board

Location: Singapore	Slug Test: MW3	Test Well: MW3
Test Conducted by: Thomas Stallard		Test Date: 1/06/2018
Analysis Performed by: Graham Hawkes	MW3	Analysis Date: 28/06/2018
Aquifer Thickness: 10.00 m		

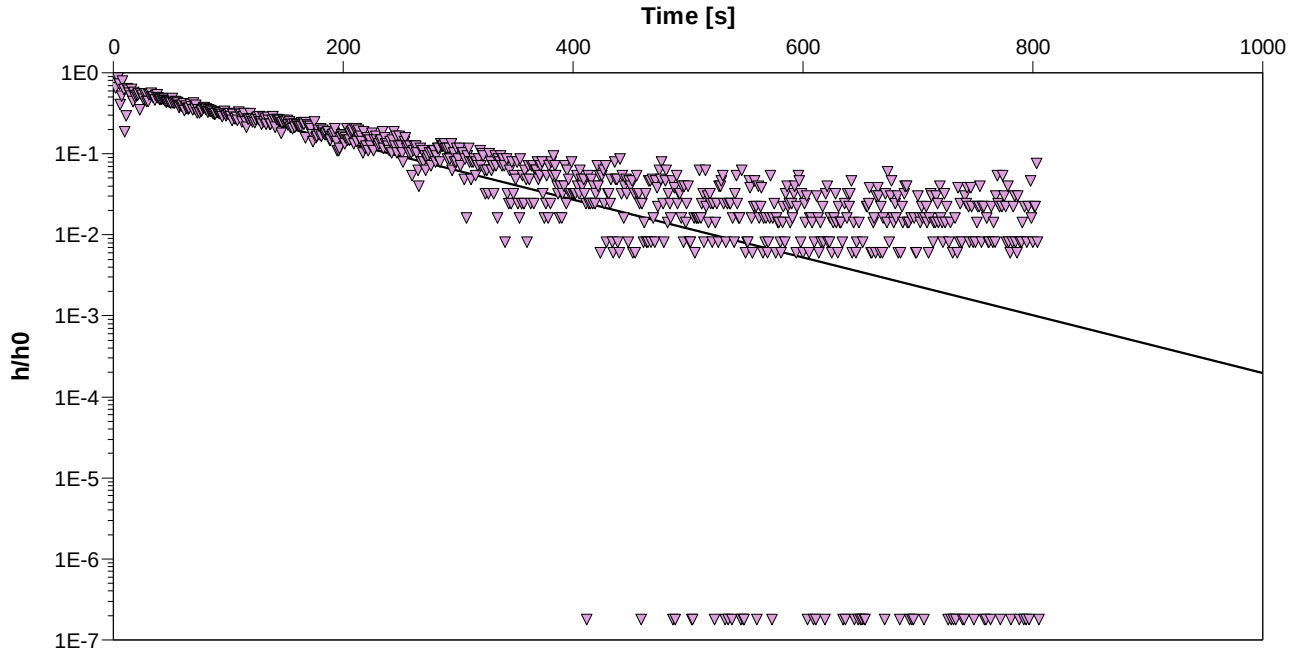


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]	
MW3	4.63×10^{-3}	

	Slug Test Analysis Report
	Project: Woodlands
	Number: 60568492
	Client: Housing & Development Board

Location: Singapore	Slug Test: MW4	Test Well: MW4
Test Conducted by: Thomas Stallard		Test Date: 1/06/2018
Analysis Performed by:	New analysis 1	Analysis Date: 28/06/2018
Aquifer Thickness: 10.00 m		

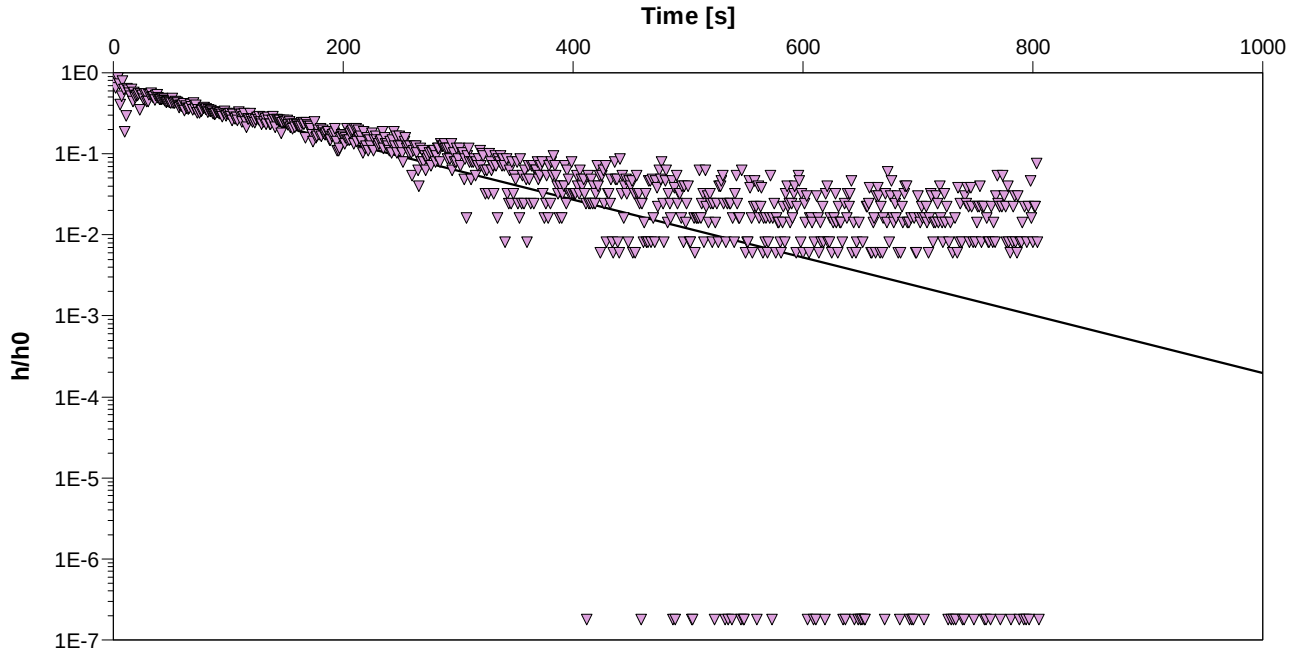


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]	
MW4	3.06×10^{-2}	

	Slug Test Analysis Report
	Project: Woodlands
	Number: 60568492
	Client: Housing & Development Board

Location: Singapore	Slug Test: MW4	Test Well: MW4
Test Conducted by: Thomas Stallard		Test Date: 1/06/2018
Analysis Performed by:	New analysis 1	Analysis Date: 28/06/2018
Aquifer Thickness: 10.00 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]	
MW4	3.58×10^{-2}	

Appendix T

Groundwater Monitoring Well Log

MONITORING WELL LOG BH/MW1

PROJECT NUMBER	60568492	**DATE**	17 May 2018
PROJECT NAME	EIS at Woodlands North Coast	**BLANK**	0 to 0.3; 4 to 10 m
LOCATION	Woodlands North Coast, Singapore	**SCREEN**	0.3 to 4 m
DRILLING METHOD	Solid-Stem Auger	**GRAVEL PACK**	0.3 to 10 m
SAMPLING METHOD	Grab	**SANITARY SEAL/BENTONITE**	0 to 0.3 m
SURFACE ELEVATION	104.750 m	**WATER FIRST NOTICED**	0.800 m bgs
WELL HEAD/TOC	- m	**STABILIZED WATER LEVEL**	0.986 m bgs
LOGGED BY	GIE	**NORTHING**	47347.05
COMMENTS	NA	**EASTING**	22210.57

SAMPLE ID	PID (ppm)	ANALYSED	DEPTH (m BGS)	GRAPHIC LOG	USCS CLASS	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
			0.5		FILL	FILL MATERIAL- Sandy SILT, yellowish brown and reddish brown	0.50	Bentonite
			1.0		CL	KALLANG FORMATION - Peaty CLAY, dark grey, very soft	1.50	
			1.5		CLS	BUKIT TIMAH GRANITE FORMATION - Sandy CLAY, grey and brown, firm		Screen
			4.0		SC	BUKIT TIMAH GRANITE FORMATION - Clayey SAND, reddishbrown and yellowish brown, medium dense, residual	4.00	Filter Pack
			10.0			Total Depth: 10.00 m	10.00	Bottom Cap

WOODLANDS NORTH COAST EIS.GPJ 6/18/18

MONITORING WELL LOG BH/MW2

PROJECT NUMBER	60568492	**DATE**	17 May 2018
PROJECT NAME	EIS at Woodlands North Coast	**BLANK**	0 to 0.2; 4.2 to 10 m
LOCATION	Woodlands North Coast, Singapore	**SCREEN**	0.2 to 4.2 m
DRILLING METHOD	Solid-Stem Auger	**GRAVEL PACK**	0.2 to 10 m
SAMPLING METHOD	Grab	**SANITARY SEAL/BENTONITE**	0 to 0.2 m
SURFACE ELEVATION	102.850 m	**WATER FIRST NOTICED**	1.200 m bgs
WELL HEAD/TOC	- m	**STABILIZED WATER LEVEL**	0.200 m bgs
LOGGED BY	GIE	**NORTHING**	47591.36
COMMENTS	NA	**EASTING**	22061.53

SAMPLE ID	PID (ppm)	ANALYSED	DEPTH (m BGS)	GRAPHIC LOG	USCS CLASS	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
			0.0		FILL	FILL MATERIAL - Sandy SILT, grey and yellowish brown, soft		Bentonite
			0.5		CL	KALLANG FORMATION - Peaty CLAY with decayed wood, dark grey and brown, very soft to soft	0.40	
			1.0					
			1.5		CLS	BUKIT TIMAH GRANITE FORMATION - Sandy CLAY, grey and brown, soft to firm, residual soil	1.50	
			2.0					Screen
			2.5					
			3.0					
			3.5					
			4.0					
			4.5		SC	BUKIT TIMAH GRANITE FORMATION - Clayey SAND, reddish brown and yellowish brown, medium dense, residual soil	4.50	
			5.0					Filter Pack
			5.5					
			6.0					
			6.5					
			7.0					
			7.5					
			8.0					
			8.5					
			9.0					
			9.5					
			10.0				10.00	Bottom Cap
						Total Depth: 10.00 m		

WOODLANDS NORTH COAST EIS.GPJ 6/18/18

MONITORING WELL LOG BH/MW3

PROJECT NUMBER	60568492	**DATE**	19 May 2018
PROJECT NAME	EIS at Woodlands North Coast	**BLANK**	0 to 4.5; 9 to 10 m
LOCATION	Woodlands North Coast, Singapore	**SCREEN**	4.5 to 9 m
DRILLING METHOD	Solid-Stem Auger	**GRAVEL PACK**	5 to 10 m
SAMPLING METHOD	Grab	**SANITARY SEAL/BENTONITE**	4.5 to 5 m
SURFACE ELEVATION	111.920 m	**WATER FIRST NOTICED**	6.000 m bgs
WELL HEAD/TOC	- m	**STABILIZED WATER LEVEL**	2.900 m bgs
LOGGED BY	GIE	**NORTHING**	47963.47
COMMENTS	NA	**EASTING**	22056.34

SAMPLE ID	PID (ppm)	ANALYSED	DEPTH (m BGS)	GRAPHIC LOG	USCS CLASS	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
			0.5		FILL	FILL MATERIAL - Sandy SILT, yellowish brown, firm		Bentonite
			1.0		CLS	BUKIT TIMAH GRANITE FORMATION - Sandy CLAY, reddish brown and light grey, soft to firm, residual soil	1.00	
			1.5					
			2.0					
			2.5					
			3.0					
			3.5					
			4.0					
			4.5					
			5.0		SC	BUKIT TIMAH GRANITE FORMATION - Clayey SAND, reddish brown and brown, loose to medium dense, residual soil	5.00	Filter Pack
			5.5					
			6.0					
			6.5					
			7.0					Screen
			7.5					
			8.0					
			8.5					
			9.0					
			9.5					
			10.0			Total Depth: 10.00 m	10.00	Bottom Cap

WOODLANDS NORTH COAST EIS.GPJ 6/18/18

MONITORING WELL LOG BH/MW4

PROJECT NUMBER	60568492	**DATE**	15 May 2018
PROJECT NAME	EIS at Woodlands North Coast	**BLANK**	0 to 4.5; 9 to 10 m
LOCATION	Woodlands North Coast, Singapore	**SCREEN**	4.5 to 9 m
DRILLING METHOD	Solid-Stem Auger	**GRAVEL PACK**	4.5 to 10 m
SAMPLING METHOD	Grab	**SANITARY SEAL/BENTONITE**	4 to 4.5 m
SURFACE ELEVATION	120.380 m	**WATER FIRST NOTICED**	5.500 m bgs
WELL HEAD/TOC	- m	**STABILIZED WATER LEVEL**	1.730 m bgs
LOGGED BY	GIE	**NORTHING**	47691.8
COMMENTS	NA	**EASTING**	22549.61

SAMPLE ID	PID (ppm)	ANALYSED	DEPTH (m BGS)	GRAPHIC LOG	USCS CLASS	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
			0.5		FILL	FILL MATERIAL - Sandy SILT, yellowish brown and reddish brown, firm		Bentonite
			1.0					
			1.5		CLS	BUKIT TIMAH GRANITE FORMATION - Sandy CLAY, reddish brown and light grey color, soft to firm, residual soil	1.50	
			2.0					
			2.5					
			3.0					
			3.5					
			4.0					
			4.5					
			5.0					Filter Pack
			5.5		SM	BUKIT TIMAH GRANITE FORMATION - Silty SAND, reddish brown and grey, loose to medium dense, residual soil	5.50	
			6.0					
			6.5					Screen
			7.0					
			7.5					
			8.0					
			8.5					
			9.0					
			9.5					
			10.0			Total Depth: 10.00 m	10.00	Bottom Cap

WOODLANDS NORTH COAST EIS.GPJ 6/18/18