春坎角
Chung Hom Kok

Annex D
Ecological Assessment

Provision of Ecological Survey Services of Proposed Public Utility Installation (Submarine Cables and Landing System) at Chung Hom Kok

Ecological Survey Report

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1. INTRODUCTION

1.1 Project Background

1.1.1 Ecosystems Ltd. was commissioned by URBIS Limited in November 2023 to conduct the services entitled "Provision of Ecological Survey Services at Chung Hom Kok Cable Landing" in support of a planning application to the Town Planning Board under section 16 of the Town Planning Ordinance (Cap. 131).

1.1.2 The purpose of the project is to implement a proposed utility installation of cable landing ducts with associated draw pits, beach manhole and shore-end part of submarine cables at a landing point on Government land near Rural Building Lot (RBL) No. 1220 and 1221, Chung Hom Kok, Hong Kong Island ("the Project Site"). The proposed installation is to facilitate the landing of the Asia Link Cable (ALC) at the cable landing station at RBL No. 1220 and a future feed-in submarine cable at RBL No. 1221. Both are under development by the Applicant of the planning application. The ALC is a regional submarine cable system under the agreement between members of the ALC consortium which will connect Hong Kong SAR China and Singapore, with branches into the Philippines, Brunei Darussalam and Hainan China.

1.1.3 The proposed installation comprises works that will be carried out in two phases. The Phase 1 Works include the implementation of the proposed cable landing ducts with associated structures and beach manhole, whilst the Phase 2 Works relate to the laying of the shore-end part of the feed-in submarine cable. It is intended that the Phase 2 Works will be constructed by a future supplier and therefore do not fall within the scope of this Ecological Survey Report.

1.2 Purpose of the Ecological Survey Report

1.2.1 This Ecological Survey Report provided an ecological impact assessment (EcoIA) on the proposed cable landing ducts with associated structures and beach manholes.

2. Relevant Legislation and Guidelines

2.1 Ordinances and Regulations

2.1.1 Ordinances and Regulations that are relevant to ecology include the following:

- Forests and Countryside Ordinance (Cap. 96) and its subsidiary legislation, the Forestry Regulations (Cap. 96A);
- Wild Animals Protection Ordinance (Cap. 170);
- Country Parks Ordinance (Cap. 208) and its subsidiary legislation;
- Environmental Impact Assessment Ordinance (Cap. 499) and the associated Technical Memorandum on Environmental Impact Assessment Process; and

- The Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) and its subsidiary legislation.

2.1.2 This Report made reference to the following guidelines and standards:

- PELB Technical Circular 1/97 / Works Branch Technical Circular 4/97, "Guidelines for Implementing the Policy on Off-site Ecological Mitigation Measures";
- EIAO Guidance Note No. 3/2010 – Flexibility and Enforceability of Mitigation Measures Proposed in an EIA Report;
- EIAO Guidance Note No. 6/2010 – Some Observations on Ecological Assessment from the Environmental Impact Assessment Ordinance Perspective;
- EIAO Guidance Note No. 7/2023 – Ecological Baseline Survey for Ecological Assessment;
- EIAO Guidance Note No. 10/2023 – Methodologies for Terrestrial and Freshwater Ecological Baseline Surveys; and
- Hong Kong Planning Standards and Guidelines (HKPSG) Chapter 10, "Conservation".

2.1.3 This study also made reference to the following Mainland legislation:

- List of State Protected Wild Animals, promulgated by the State Council 國家重點保護野生動物名錄; and

- List of State Protected Wild Plants, promulgated by the State Council 國家重點保護野生植物名錄.

2.1.4 International conventions and guidelines that are relevant to this study include the following:

- Convention on International Trade in Endangered Species of Wild Fauna and Flora ("CITES"). This Convention regulates international trade in animal and plant species considered to be at risk from such trade. The main categories of species relevant to Hong Kong are Appendices I and II. Species listed in Appendix I are species threatened with extinction that are or may be affected by trade; species listed in Appendix II are those that, while not necessarily under current threat of extinction, may become threatened unless trade is subject to strict regulation. Hong Kong's obligations under this Convention are enforced via the Protection of Endangered Species of Animals and Plants Ordinance.

- IUCN The World Conservation Union maintains, through its Species Survival Commission, a Red List of globally threatened species of wild plants and animals (see http//www.redlist.org). The Red List is considered the authoritative publication to classify species as threatened categories (i.e. critically endangered, endangered, vulnerable), or lower-risk.

- United Nations Convention on Biological Diversity. This convention requires parties to regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use. It also requires parties to promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings. The People's Republic of China (PRC) ratified the Convention on Biological Diversity on 5thJanuary 1993. The HKSAR Government has stated that it is "committed to meeting the environmental objectives" of the Convention (PELB 1996).

2.2 Species of Conservation Importance

2.2.1 In accordance with Table 3, Annex 8 of the TM-EIAO, the ecological value of species has been assessed in terms of protection status, distribution, and rarity. For faunal species, their protection status (e.g. fauna protected under the Wild Animals Protection Ordinance (except birds as all wild birds are protected under the ordinance but their conservation importance is not equal), Protection of Endangered Species of Animals and Plants Ordinance, and/or regional/global laws/conventions), species distribution (e.g. endemic), and rarity (e.g. rare or restricted, or level of concern highlighted in Fellowes *et al*. (2002)) have been considered. Similarly, floral species of conservation importance were considered with regard to their protection status (e.g. listed under the Forestry Regulations and Protection of Endangered Species of Animals and Plants Ordinance in Hong Kong, listed by IUCN or CITES, or listed as Category I or II protected species in mainland China), species distribution (e.g. endemic), and rarity (e.g. considered rare or very rare by Corlett *et al*. (2000) and regarded as rare by Yip *et al*. (2010)). However, exotic invasive species, escaped cultivars or captive species, vagrants and introduced species were excluded.

2.2.2 The following laws/regulations/conventions/books/publications are relevant to the evaluation of the conservation importance of flora and fauna species:

- Forestry Regulations (Cap. 96A) which are subsidiary legislation of the Forests and Countryside Ordinance (Cap. 96);
- Wild Animals Protection Ordinance (Cap. 170);
- Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586);
- The International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species as threatened categories (i.e. critically endangered, endangered, vulnerable) (*Species which are classified by IUCN as Near Threatened (NT), Least Concern (LC), Data Deficient (DD), or Not Evaluated (NE), and not covered by any other laws/regulations/conventions are not considered of conservation importance in the present study*);
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- Category I/II/III in List of Wild Plants under State Protection;
- Rare and Precious Plants of Hong Kong;

- China Plant Red Data Book;
- Considered 'Rare' or 'Very Rare' plant species listed by Corlett *et al*. (2000) and regarded as 'Rare' plant species by Yip *et al*. (2010);
- Threatened Species List of China's Higher Plants (Qin *et al*. 2017);
- Category I or II State Protected Wild Animals;
- PRC Wild Animal Protection Law;
- China Species Red List;
- Red List of China's Vertebrates (Jiang *et al*. (2016)); and
- Fauna species considered of concern in Fellowes *et al*. (2002).

3. APPROACH AND METHODOLOGY ON ECOLOGICAL SURVEY

3.1 Assessment Area

3.1.1 The Assessment Area for the Ecological Survey comprises land on which the proposed cable landing ducts with associated structures, catch fence and beach manhole lie, as well as areas within 500 meters (m) distance from the Project Site (**Figure 1**). To facilitate the planning application process, the Application Site which comprises a small part of the Project Site that is located within an area zoned "Coastal Protection Area" ("CPA"), for which planning permission is required, is also shown in Figure 1.

3.2 Literature Review Methodology

3.2.1 Literature review was conducted to collect ecological baseline information within the Assessment Area. The literature included Government and private sector reports, independent and Government published literature, academic studies, vegetation maps and statutory land use plans. Reviewed information included but not limited to the following:

- Outline Zoning Plan
- Historical and latest government aerial photos
- Hong Kong Biodiversity Database
- Rare and Precious Plant of Hong Kong (AFCD 2003)
- Hong Kong Biodiversity – Newsletter of AFCD
- Memoirs of Hong Kong Natural History Society
- Porcupine! – Newsletter of Department of Ecology and Biodiversity, University of Hong Kong
- Approved S16 Planning Application for Proposed Public Utility Installation (Landing Ducts and Beach Manholes for Telecommunication Cables) on Government land adjoining Rural Building Lot No. 1158, Chung Hom Kok, Stanley (Application No. A/H19/83)

3.3 Ecological Survey Methodology

3.3.1 With reference to EIAO Guidance Note 7/2023, the ecological baseline survey aims at collecting ecological data through sampling. Survey methods used should be scientifically robust and appropriate for the habitats and target taxa groups under this ecological baseline survey.

3.3.2 The ecological surveys which have been undertaken covered but not be limited to flora, fauna and any other habitats/species of conservation importance. The ecological surveys have covered different habitats according to the results after ground-truthing. The detailed methodology is stated below.

Habitat and Vegetation

3.3.3 Habitats within the Assessment Area have been mapped based on the latest government aerial photos combined with field ground-truthing. Representative areas of each habitat type were surveyed on foot. Plant species of each habitat type encountered, and their relative abundance were recorded with special attention to species of conservation importance. Nomenclature of plant species followed the latest Hong Kong Plant Database available from the website of the Hong Kong Herbarium.

Terrestrial Mammal

3.3.4 Mammal surveys (including day and night-time surveys) were carried out in representative habitats within the Assessment Area. With reference to EIAO Guidance Note No. 10/2023, as mammals in Hong Kong which are of conservation importance are mostly secretive and nocturnal, all sightings, tracks, and signs of mammals (including droppings) have been actively searched within the representative habitats of the Assessment Area. Night surveys have been conducted to survey nocturnal mammal species (e.g. bats). As it is common practice to conserve bat roost, since direct impact on bat roost would affect the species population level, attention has been paid on bat roost location. Active searches have been carried out in the potential roosting locations (e.g. cave, mine, tunnel, abandoned buildings, palm trees, etc.). Ultrasonic bat detectors have been used for locating and identifying bats after sunset. Nomenclature for mammals followed that available from the Hong Kong Biodiversity Information Hub.

Avifauna

3.3.5 The avifauna of representative habitats within the Assessment Area have been surveyed in the active period of bird activities (i.e. early morning and evening (Bibby et al. 2000) using transect count method) (**Figure 2**). The presence and abundance of avifauna species at various habitats observed from survey transects have been recorded. Behaviors related to roosting (including night roosting sites, if any), breeding (e.g. nest building) and feeding observed during the surveys have been recorded, if any. Night surveys have been conducted to record nocturnal avifauna (e.g. owls). The location(s) of any encountered avifauna species of conservation importance have been recorded, along with any notable behaviors, if any. Ornithological nomenclature in this study followed that available from the Hong Kong Biodiversity Information Hub.

Herpetofauna

3.3.6 Herpetofauna surveys (including day and night survey) have been carried out and covered representative habitats within the Assessment Area (**Figure 2**). With reference to the EIAO Guidance Note No. 10/2023, the activities of amphibians and reptiles are highly seasonal, and are influenced by the variation of weather even on a daily basis due to their ectothermic and cryptic nature. The herpetofauna survey have been conducted during their active periods. Amphibians have been surveyed in daytime and after dusk, while reptiles have been surveyed in both daytime and night-time.

3.3.7 Particular attention was given to streams/watercourses or other water bodies. Herpetofauna surveys were conducted through direct observation and active searching in all potential hiding places such as among leaf litter, inside holes, under stones and logs within the Assessment Area. During the surveys, all reptiles and amphibians sighted and heard have been recorded. Auditory detection of species-specific calls has been used to survey frogs and toads during night surveys. The nomenclature followed that available from the Hong Kong Biodiversity Information Hub.

Butterfly and Odonate

3.3.8 Butterfly and Odonate surveys have been conducted by transect survey (**Figure 2**) during daytime and under fine weather when most butterflies and dragonflies were active as stated in EIAO Guidance Note NO. 10/2023, i.e. rainless or sunny and windless day. All encountered dragonflies and butterflies have been recorded by species by direct observation with binoculars and their abundance have been recorded. The nomenclature followed that available from the Hong Kong Biodiversity Information Hub.

Aquatic Fauna

3.3.9 Surveys of freshwater communities have been undertaken at streams/watercourses and other water bodies (either natural or man-made) within the Assessment Area, if any, by means of bankside observation and/or active searching. All freshwater fauna found have been identified to the lowest practicable taxonomic level and their abundance has been recorded, if any. The nomenclature for fish and invertebrates followed that available from the Hong Kong Biodiversity Information Hub.

Intertidal Fauna

3.3.10 A qualitative or walk-through survey has been undertaken to identify the intertidal flora and fauna present, and their occurrence in the Assessment Area. It could help establish an ecological profile on various intertidal habitats located within the Assessment Area. All intertidal fauna has been identified to the lowest practicable taxonomic level. Nomenclature of intertidal species followed that available from the Hong Kong Biodiversity Information Hub.

3.4 Ecological Survey Program

3.4.1 The survey program is presented in **Table 3.1**.

Table 3.1 Ecological Survey Program

Year	2023
Month	Nov
Season	Dry
Habitat and Vegetation	D
Mammal Survey	D+N
Bird Survey	D+N
Butterfly and Odonate	D
Herpetofauna	D+N
Aquatic Fauna	D+N
Intertidal Fauna	D

Abbreviations:
D: Daytime survey; N: Night-time survey.

4. Literature review on baseline ecological characters

4.1 Recognized Sites of Conservation Importance

Coastal Protection Area (CPA)

4.1.1 Areas along the southern shore of Chung Hom Kok both within and outside the Project Site are zoned "Coastal Protection Area" ("CPA") on the Approved Stanley Outline Zoning Plan (OZP) No. S/H19/16 (**Figure 1**). As stated in the explanatory statement of the OZP (S/H19/16), the CPA is intended to protect and retain the natural coastlines and the coastal natural environment, with a minimum of built development. This is a general presumption against development in the CPA. Only developments that are essential infrastructure projects with overriding public interest and/or developments that support the conservation of the existing natural landscape of the area may be permitted.

4.2 Species of Conservation Importance

4.2.1 One species of flora species of conservation importance records was found within the 500m Assessment Area, including *Artocarpus hypargyreus*.

4.2.2 Two avifauna species of conservation importance records were found within the 500m Assessment Area, including Black Kite and Pacific Reef Heron.

Table 4.1 List of Flora Species of Conservation Importance Recorded within and in the Vicinity of the Assessment Area from Reviewed Literature

Species Name[1]	Rarity and Distribution[1]	Conservation Status [2,3,4,5,6,7,8,9,10]	Location[11]	Source[11]
Artocarpus hypargyreus	Common, Shrubland	Rare and Precious Plants of Hong Kong (Near threatened in China) China Plant Red Data Book Illustrations of Rare & endangered plant in Guangdong Province Threatened Species List of China's Higher Plants (Endangered, endemic species) IUCN Red List (Vulnerable)	Shrubland within the Assessment Area	Approved S16 Planning Application for Proposed Public Utility Installation (A/H19/83)

Notes:
1. Corlett et al. (2000). Hong Kong Vascular Plants: Distribution and Status.
2. IUCN (2023). IUCN Red List Version 2022-2.
3. Qin et al. (2017). Threatened Species List of China's Higher Plants.
4. Fu & Chin (1992). China Plant Red Data Book – Rare and Endangered Plants.
5. Wu & Hu (1988). Illustration of Rare & endangered plant in Guangdong Province.
6. Hu et al. (2003). 100 Rare and Precious Plants of Hong Kong.
7. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance
8. State Forestry Administration & Ministry of Agriculture (1999). List of Wild Plants under State Protection (Part 1)
9. Convention on International Trade in Endangered Species of Wild Flora and Fauna (2021). Appendices I, II and III.
10. Cap. 96A Forests and Countryside Ordinance.
11. Approved S16 Planning Application for Proposed Public Utility Installation (Landing Ducts and Beach Manholes for Telecommunication Cables) on Government land adjoining Rural Building Lot No. 1158, Chung Hom Kok, Stanley (A/H19/83).

Table 4.2 List of Fauna Species of Conservation Importance Recorded within and in the Vicinity of the Assessment Area from Reviewed Literature

Species Name[1]	Rarity and Distribution[1]	Conservation Status [2,3,4,5,6,7]	Location[8]	Source[8]
Bird (Remark: all wild bird species are protected under Cap. 170 Wild Animals Protection Ordinance in Hong Kong [2])				
Bird				
Black Kite *Milvus migrans*	Common resident and winter visitor. Widely distributed in Hong Kong.	Fellowes et al. (2002): (RC); Cap. 170; Cap. 586; CITES Appendix II; List of Wild Animals under State Priority Conservation: Class II	Flyover within the Assessment Area	Approved S16 Planning Application for Proposed Public Utility Installation (A/H19/83)
Pacific Reef Heron *Egretta sacra*	Common resident. Widely distributed in coastal area throughout Hong Kong.	Fellowes et al. (2002): LC; Cap. 170; List of Wild Animals under State Priority Conservation: Class II	Rocky shore within in the Assessment Area	Approved S16 Planning Application for Proposed Public Utility Installation (A/H19/83)

Notes:

1. AFCD (2023). Hong Kong Biodiversity Database.
2. Cap. 170 Wild Animals Protection Ordinance
3. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
4. Fellowes *et al.* (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
   - For conservation status listed by Fellowes *et al.* (2002), letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
5. IUCN Red List of Threatened Species.
6. Jiang, Z. G., Jiang, J. P., Wang, Y. Z., Zhang, E., Zhang, Y. Y., Li, L. L., ... & Dong, L. (2016). Red list of China's vertebrates.
7. List of State Protected Wild Animals, promulgated by the State Council
8. Approved S16 Planning Application for Proposed Public Utility Installation (Landing Ducts and Beach Manholes for Telecommunication Cables) on Government land adjoining Rural Building Lot No. 1158, Chung Hom Kok, Stanley (A/H19/83)

Abbreviations:

Conservation Status in Fellowes et al. 2002: GC: Global Concern; LC = Local Concern; PGC = Potential Global Concern; PRC = Potential Regional Concern; RC = Regional Concern

5. Ecological Survey Result

5.1 Habitat and Vegetation

5.1.1 There were seven habitats identified within the Assessment Area, namely Developed Area, Rocky Shore, Sandy Shore, Sea, Shrubland, Watercourse and Woodland (**Figure 3**). The area within the Project Site contains Developed Area and Woodland, among which Developed Area is the major habitat within the Project Site. The area size or length of the respective habitats identified within the Assessment Area are tabulated in **Table 5.1**.

Table 5.1 Habitat Size within the Assessment Area

Habitat	Area Size (ha) / Length(m)		
	Project Site	Outside Project Site	Total Assessment Area
Developed Area	0.07	10.34	10.41
Rocky Shore	0.01	2.86	2.87
Sandy Shore	-	0.7	0.7
Sea	-	51.12	51.12
Shrubland	-	19.01	19.01
Watercourse	-	54.32m	54.32m
Woodland	0.04	9.99	10.03
Total	0.12	94.02	94.14

5.1.2 The Project Site comprised of developed area and woodland on precipitous slope. Part of it was concrete-paved and subject to frequent human and vehicular disturbance. The vegetated area of Project Site was dominated by exotic tree species such as *Acacia confusa* and *Leucaena leucocephala*, with some native tree species namely *Macaranga tanarius* var. *tomentosa*, *Celtis sinensis* and *Sterculia lanceolata* occasionally found. The midstorey was largely occupied by climbers such as *Bauhinia championii* and *Parthenocissus dalzielii*. Herb species such as *Miscanthus floridulus* and *Panicum maximum* were commonly found in the understorey.

Developed Area

5.1.3 Developed Area was found within the Assessment Area and comprised of roads, engineered slopes, open storage, construction sites and residential areas. It was mainly concrete-paved and subject to frequent human and vehicular disturbance. In general, this habitat was characterized by landscape species such as *Acacia confusa* and *Archontophoenix alexandrae*, with roadside vegetation occupied by *Ligustrum sinense* and *Murraya paniculate*. Disturbance-tolerant and opportunistic herb species were found prospering in limited microhabitats, namely *Bidens alba* and *Ipomoea cairica*.

Rocky Shore and Sandy Shore

5.1.4 Extensive intertidal zones comprising Rocky Shore and Sandy Shore were identified within the Assessment Area. It was mainly comprised of boulders with limited vegetation where platforms and small rock pools were commonly observed. Species recorded are mostly ruderal species such as *Ipomoea pes-caprae*, *Panicum maximum* and *Wedelia trilobata*, with coastal and pioneer tree species namely

Casuarina equisetifolia and *Hibiscus tiliaceus* occasionally colonized in the backshore.

Sea

5.1.5 Sea was found at the southern part of the Assessment Area. It is located to the immediate south of the proposed installation.

Shrubland/Grassland

5.1.6 Shrubland was found extensively on the hillslope south of Chung Hom Kok Road within the Assessment Area. The canopy of this habitat was mainly open, and the structure was simple. The dominated species were shrub or herb species such as *Melastoma sanguineum*, *Polyspora axillaris* and *Dicranopteris pedata*. Tree species such as *Sapium discolor* was also commonly found in this habitat.

Watercourse

5.1.7 One watercourse was found within the Assessment Area and it was generally modified with concrete beds and banks. Human disturbance such as sewage discharge from nearby villages was observed at the upstream section. The watercourses were sparsely vegetated, in which only limited vegetation such as *Alocasia macrorrhizos*, *Bidens alba* and *Panicum maximum* were found in concrete crevices and at the embankment.

Woodland

5.1.8 Woodland patches were found on hillsides along the coastline and Chung Hom Kok Road. Their canopy was dominated by native tree species such as *Macaranga tanarius* var. *tomentosa*, *Mallotus paniculatus*, *Schefflera heptaphyll*, as well as exotic species *Leucaena leucocephala*. The tree canopies reached 8m to 10m. The midstory and understory were both recruited with exotic herb and shrub species namely *Lantana camara* and *Wedelia trilobata*, with native species such as *Aporusa dioica*, *Desmos chinensis*, *Psychotria asiatica* and *Sterculia lanceolata* also found. The understory layer was also intertwined with climbers such as *Bauhinia championii* and *Parthenocissus dalzielii*.

Vegetation

5.1.9 A total of 215 plant species were recorded within the Assessment Area, among which 150 and 64 are known to be native and exotic to Hong Kong respectively, and the remaining 1 species is of uncertain origin (**Appendix A**). *Artocarpus hypargyreus* and *Diospyros vaccinioides* are the 2 flora species of conservation importance recorded within the Assessment Area. Locations of these species of conservation importance are shown in **Figure 3**.

5.1.10 One individual of *Artocarpus hypargyreus* was found in Shrubland on the hillslope south of Chung Hom Kok Road. *Artocarpus hypargyreus* is a tree species that is considered common in the lowland forest of Hong Kong (Corlett et al. 2000). It is recorded in Rare and Precious Plants of Hong Kong, China Plant Red Data Book and Illustrations of Rare & endangered plant in Guangdong Province. It is also listed as endangered and endemic species in Threatened Species List of China's Higher Plants, and Vulnerable in IUCN Red List.

5.1.11 A number of individuals of *Diospyros vaccinioides* were recorded in shrubland on the hillslope south of Chung Hom Kok Road. *Diospyros vaccinioides* is a shrub that is considered very common in the shrublands of Hong Kong (Corlett et al. 2000). Overexploitation of wild individuals of *Diospyros vaccinioides* for ornamental uses, especially in Taiwan, leads to its critically endangered status in the IUCN Red List (IUCN 2021). It is listed as endangered in Threatened Species List of China's Higher Plants.

5.1.12 *Casuarina equisetifolia, Dimocarpus longan, Lagerstroemia speciosa, Litchi chinensis* and *Michelia* x *alba* are exotic to Hong Kong and not considered of conservation importance, despite being considered rare/ very rare by Corlett et al. (2000), listed as Vulnerable by IUCN (2022), listed as endangered or vulnerable in Threatened Species List of China's Higher Plants, listed as vulnerable in China Plant Red Data Book, listed under Category II in the List of Wild Plants under State Protection (Part 1), listed under Cap. 96 Forests and Countryside Ordinance, and/ or Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.

5.1.13 *Dalbergia* spp. are listed under Appendix II of CITES and protected under Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance in Hong Kong as species in this genus is facing threat due to the overexploitation for its valuable wood (known as rosewood). In the current study, *Dalbergia benthamii* was recorded. The recorded *Dalbergia* are climber which is not relevant to the timber exploitation. In addition, the species are considered 'common' in Hong Kong by Corlett et al. (2000). Thus, it is not considered as species of conservation importance in the current Study.

5.2 Terrestrial and Aquatic Fauna

Avifauna

5.2.1 Twenty-one species of bird were recorded within the Assessment Area, most of which are common and widespread in Hong Kong. They were mainly recorded in Shrubland and Woodland. Three species are of conservation importance, namely Black Kite *Milvus migrans*, Greater Coucal *Centropus sinensis* and Lesser Coucal *Centropus bengalensis* outside the Project Site. Locations of these species are shown in **Figure 3**. The evaluation of these species is shown in **Table 5.11**.

Odonates and Butterflies

5.2.2 Twenty-seven butterfly species were recorded within the Assessment Area, most of which are common and widespread in Hong Kong. Most of the butterfly species were recorded in the Developed Area and Shrubland within the Assessment Area. A species of conservation importance Malayan *Megisba malaya* was recorded outside the Project Site. Locations of this species is shown in **Figure 3.** The evaluation of this species is shown in **Table 5.11**.

5.2.3 Three odonates species which are common and widespread in Hong Kong were recorded within the Assessment Area. They were mainly recorded in the Developed Area and Shrubland. No species of conservation importance was recorded.

Herpetofauna

5.2.4 Four species of reptile were recorded within the Assessment Area, most of which are common and widespread in Hong Kong. A species of conservation importance Chinese Cobra *Naja atra* was recorded in the Shrubland outside the Project Site. Locations of this species is shown in **Figure 3.** The evaluation of this species is shown in **Table 5.11**.

5.2.5 A species of amphibian was recorded within the Assessment Area. It is common and widespread in Hong Kong. No species of amphibian recorded is of conservation importance.

Mammals

5.2.6 Five species of mammal were recorded within the Assessment Area, of which three bat species are of conservation importance in Hong Kong. They are Chinese Pipistrelle *Hypsugo pulveratus,* Japanese Pipistrelle *Pipistrellus abramus* and Least Pipistrelle *Pipistrellus tenuis***.** Only Japanese Pipistrelle was recorded within the Project Site. Owing to the high mobility of bats to transit among habitats, multiples of acoustics records may be generated from the same bat among various habitats, hence acoustics records is used to represent the presence of bat among different habitats within the Assessment Area**.** The evaluation of these species is shown in **Table 5.11**.

Aquatic Fauna

5.2.7 A watercourse and three species of aquatic fauna were observed within the Assessment Area. While the actual length of the watercourse cannot be determined using aerial photos and is not in proximity to the Project Site, the length of the watercourse is for indicative purposes only. A low species richness and abundance of aquatic species was observed from the survey. With species that can tolerate brackish water, this watercourse is assumed to be connected to the sea.

5.2.8 Through literature review, two watercourses were identified in the western side of the Project Site. With limited accessibility (steep slopes) to the watercourse shown in past study, aquatic fauna survey was incapable of being carried out. Hence, the two watercourses are excluded from the present study.

Intertidal Fauna

5.2.9 Qualitative Walk-through: Within the Assessment Area, qualitative walk-through survey was conducted along the accessible shorelines of the survey locations, to record organisms including highly mobile fauna such as crab encountered with their relative abundance.

5.2.10 The results of the qualitative survey showed that the shorelines along the survey locations comprised both Rocky Shore and Sandy Shore. A total of 25 intertidal species were recorded within the Assessment Area (Appendix I). All recorded intertidal species are common in Hong Kong and no species of conservation importance were recorded. Rock oyster *Saccostrea cucullate* was the dominated species in the Rocky Shore habitat while *Ligia exotica* was the dominated species found in the Sandy Shore habitat.

5.3 Evaluation of Habitats and Species of Conservation Importance

5.3.1 There were seven habitats identified within the Assessment Area, namely Developed Area, Rocky Shore, Sandy Shore, Sea, Shrubland, Watercourse and Woodland (Figure 2). The area within the Project Site contains Developed Area and Woodland, among which Developed Area is the major habitat within the Project Site. The ecological importance of the habitats and wildlife identified within the Assessment Area during the survey are evaluated in accordance with the TM-EIAO Annex 8 criteria and presented in **Tables 5.2** to **5.9**.

5.3.2 A total of 2 flora, 3 avifauna, 1 butterfly, 1 reptile, and 3 mammal species of conservation importance were identified in the Assessment Area. With reference to Table 6, Annex 8 of the TM-EIAO, the ecological value of species was assessed in terms of protection status (e.g. fauna protected under WAPO (except birds), and flora and fauna protected under regional/global legislation/conventions), species distribution (e.g. endemic), and rarity (e.g. rare or restricted). Flora and fauna species of conservation importance recorded within the Assessment Area are evaluated according to the TM-EIAO in **Table 5.10** and **5.11**.

Table 5.2 Evaluation of Project Site

Criterion	**Description**
	Project Site
Naturalness	Mostly man-made habitat and involved small scale of Woodland and Rocky Shore
Size (ha)	0.012 ha
Diversity	Very Low to Low species diversity
Rarity	2 species of conservation importance including Malayan and Japanese Pipistrelle
Re-creatability	-
Fragmentation	N/A
Ecological linkage	No significant linkages with other habitats of ecological importance
Potential value	Very Low
Nursery/ breeding ground	Not known as significant nursery or breeding ground
Age	N/A
Abundance/ richness of wildlife	Low abundance and diversity of wildlife
Overall ecological value	Low

Table 5.3 Evaluation of Developed Area

Criterion	**Description**
	Developed Area
Naturalness	Entirely man-made habitat
Size (ha)	10.41 ha
Diversity	Low species diversity
Rarity	4 species of conservation importance including Black Kite; Chinese Pipistrelle, Japanese Pipistrelle, Least Pipistrelle
Re-creatability	Readily re-creatable
Fragmentation	N/A
Ecological linkage	No significant linkages with other habitats of ecological importance
Potential value	Low
Nursery/ breeding ground	Not known as significant nursery or breeding ground
Age	N/A
Abundance/ richness of wildlife	Low abundance and diversity of wildlife
Overall ecological value	Very Low

Table 5.4 Evaluation of Rocky Shore

Criterion	**Description**
	Rocky Shore
Naturalness	Natural
Size (ha)	2.87 ha
Diversity	Low species diversity
Rarity	No species of conservation importance was recorded
Re-creatability	-
Fragmentation	N/A
Ecological linkage	Connected to the marine environment
Potential value	Low
Nursery/ breeding ground	Not known as significant nursery or breeding ground
Age	-
Abundance/ richness of wildlife	Very Low abundance of wildlife
Overall ecological value	Low

Table 5.5 Evaluation of Sandy Shore

Criterion	**Description**
	Sandy Shore
Naturalness	Natural
Size (ha)	0.7 ha
Diversity	Very Low species diversity
Rarity	No species of conservation importance was recorded
Re-creatability	-
Fragmentation	N/A
Ecological linkage	Connected to the marine environment
Potential value	Low
Nursery/ breeding ground	Not known as significant nursery or breeding ground
Age	-
Abundance/ richness of wildlife	Very Low abundance of wildlife
Overall ecological value	Low

Table 5.6 Evaluation of Sea

Criterion	**Description**
	Sea
Naturalness	Natural
Size (ha)	51.12 ha
Diversity	Very Low species diversity
Rarity	1 species of conservation importance was recorded: Black Kite
Re-creatability	-
Fragmentation	N/A
Ecological linkage	Connected to the marine environment
Potential value	Low
Nursery/ breeding ground	Not known as significant nursery or breeding ground
Age	-
Abundance/ richness of wildlife	Very Low abundance of wildlife
Overall ecological value	Low

Table 5.7 Evaluation of Shrubland

Criterion	**Description**
	Shrubland
Naturalness	Natural
Size (ha)	19.01 ha
Diversity	Low to Medium species diversity
Rarity	2 flora species of conservation importance including *Artocarpus hypargyreus* and *Diospyros vaccinoides;* 6 fauna species of conservation importance including Black Kite; Greater Coucal, Lesser Coucal; Malayan; Chinese Cobra; Japanese Pipistrelle, Least Pipistrelle
Re-creatability	Hard to re-create
Fragmentation	N/A
Ecological linkage	Connected to nearby Woodland
Potential value	Low to Medium
Nursery/ breeding ground	Not known as significant nursery or breeding ground
Age	N/A
Abundance/ richness of wildlife	Low to Medium abundance of wildlife
Overall ecological value	Low to Medium

Table 5.8 Evaluation of Watercourse

Criterion	**Description**
	Watercourse
Naturalness	Natural with anthropogenic disturbance
Length (m)	54.32m
Diversity	Very low species diversity
Rarity	No species of conservation importance recorded
Re-creatability	Hard to re-create
Fragmentation	N/A
Ecological linkage	Connected to the sea
Potential value	Low to Medium
Nursery/ breeding ground	Not known as significant nursery or breeding ground
Age	N/A
Abundance/ richness of wildlife	Low abundance of wildlife
Overall ecological value	Low

Table 5.9 Evaluation of Woodland

Criterion	**Description**
	Woodland
Naturalness	Natural(high anthropogenic disturbance near Project Site)
Size (ha)	10.03 Ha
Diversity	Low to Medium species diversity
Rarity	6 species of conservation importance including Black Kite, Greater Coucal; Malayan; Chinese Pipistrelle, Japanese Pipistrelle, Lesser Yellow Bat
Re-creatability	-
Fragmentation	N/A
Ecological linkage	Connected to nearby Woodland/ Shrubland habitat
Potential value	Low to Medium
Nursery/ breeding ground	Not known as significant nursery or breeding ground
Age	N/A
Abundance/ richness of wildlife	Low to Medium species richness and abundance of wildlife
Overall ecological value	Low to Medium (Low for woodland near Project Site Area)

Table 5.10 Evaluation of Flora Species of Conservation Importance

SPECIES NAME[1]	LOCATION	CONSERVATION/PROTECTION STATUS[2 3 4 5 6 7 8 9 10]	DISTRIBUTION[1]	RARITY[1]
Artocarpus hypargyreus	Shrubland outside Project Site	Rare and Precious Plants of Hong Kong (Near threatened in China) China Plant Red Data Book Illustrations of Rare & endangered plant in Guangdong Province Threatened Species List of China's Higher Plants (Endangered, endemic species) IUCN Red List (Vulnerable)	Shrubland	Common
Diospyros vaccinoides	Shrubland outside Project Site	Threatened Species List of China's Higher Plants (Endangered)[3] IUCN Red List (Critically endangered) [2]	Shrubland	Very Common

Notes:
1. Corlett et al. (2000). Hong Kong Vascular Plants: Distribution and Status.
2. IUCN (2023). IUCN Red List Version 2022-2.
3. Qin et al. (2017). Threatened Species List of China's Higher Plants.
4. Fu & Chin (1992). China Plant Red Data Book – Rare and Endangered Plants.
5. Wu & Hu (1988). Illustration of Rare & endangered plant in Guangdong Province.
6. Hu et al. (2003). 100 Rare and Precious Plants of Hong Kong.
7. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance
8. State Forestry Administration & Ministry of Agriculture (1999). List of Wild Plants under State Protection (Part 1)
9. Convention on International Trade in Endangered Species of Wild Flora and Fauna (2021). Appendices I, II and III.
10. Cap. 96A Forests and Countryside Ordinance.

Table 5.11 Evaluation of Fauna Species of Conservation Importance

SPECIES NAME [1]	RARITY AND DISTRIBUTION IN HONG KONG [1]	CONSERVATION STATUS [3,4,5]	LOCATION
Avifauna			
Black Kite *Milvus migrans*	Common resident and winter visitor. Widely distributed in Hong Kong.	Fellowes et al. (2002): (RC) Cap. 170 Cap. 586 CITES Appendix II; List of Wild Animals under State Priority Conservation: Class II	Developed Area, Sea and Shrubland outside Project Site
Greater Coucal *Centropus sinensis*	Common resident. Widely distributed in Hong Kong.	Cap. 170; List of Wild Animals under State Priority Conservation: Class II	Shrubland and Woodland outside Project Site
Lesser Coucal *Centropus bengalensis*	Uncommon resident. Widely distributed in Hong Kong.	Cap. 170; List of Wild Animals under State Priority Conservation: Class II	Shrubland outside Project Site
Butterfly			
Malayan *Megisba malaya*	Very Rare. North Lantau Island	Fellowes et al. (2002): LC	Shrubland and Woodland outside Project Site
Reptile			
Chinese Cobra *Naja atra*	Common and widely distributed in Hong Kong.	IUCN Red List: VU; Fellowes et al. (2002): PRC; Cap. 586; Red List of China's Vertebrates: VU; CITES: Appendix II	Shrubland outside Project Site
Mammal			
Chinese Pipistrelle *Hypsugo pulveratus*	Only several records in the countryside areas at Ting Kau, Ma On Shan and Lin Ma Hang, and several records of stray individuals inside buildings.	Fellowes et al. (2002): (LC); Cap. 170	Developed Area and Woodland outside Project Site
Japanese Pipistrelle *Pipistrellus abramus*	Widely distributed throughout Hong Kong.	Cap. 170	Developed Area and Woodland within Project Site; Developed Area, Shrubland and Woodland outside Project Site
Least Pipistrelle *Pipistrellus tenuis*	Uncommon. Ten-something records found in Nam Chung, Sheung Wo Hang, Lin Ma Hang, Plover Cove Country Park, Yuen Long, Shek Pik, Deep Water Bay, Ho Pui and Ho Chung.	Cap. 170	Developed Area, Watercourse and Woodland outside Project Site

Remark: all wild bird species are protected under Cap. 170 Wild Animals Protection Ordinance in Hong Kong 2

Notes:

- AFCD (2023). Hong Kong Biodiversity Database.
- Cap. 170 Wild Animals Protection Ordinance.
- Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
- Convention on International Trade in Endangered Species of Wild Flora and Fauna. Appendices I, II and III.
- Fellowes et al. (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
- For conservation status listed by Fellowes et al. (2002), letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence. Afcd (2016)
- IUCN Red List of Threatened Species.
- Jiang, Z. G., Jiang, J. P., Wang, Y. Z., Zhang, E., Zhang, Y. Y., Li, L. L., ... & Dong, L. (2016). Red list of China's vertebrates.
- List of State Protected Wild Animals, promulgated by the State Council
- Abbreviations:
- Conservation Status in Fellowes et al. (2002): PRC = Potential Regional Concern; RC = Regional Concern

6. Impact Identification and Impact Assessment

6.1 Project Description

6.1.1 The project consists of works which will be carried out in two phases, including 1) the Phase 1 Works which comprise land-based installation of the proposed cable landing ducts with associated structures and beach manhole in the terrestrial area; and 2) the Phase 2 Works which include shore-end and offshore cable laying, of which the Project Site encompasses only the buried shore-end part of the submarine cable in the beach area.

6.1.2 The Phase 1 Works comprise land-based works only and are above the tidal high-water mark. It is intended that the Phase 2 Works will be constructed by a supplier appointed by the ALC consortium which are not within the scope of the present study and will not be discussed in the following sections.

6.1.3 The proposed beach manhole on the rocky shore of Chung Hom Kok forming part of the Phase 1 Works will facilitate the landing of the ALC by connecting it to the cable landing station at Lot RBL No. 1220 via the proposed cable landing ducts and associated structures. This cable landing station is currently under development by the Applicant of the subject planning application.

6.1.4 A large part of the proposed cable ducting alignment will be laid along the existing access road (which leads towards Chung Hom Kok Road) from the Applicant's cable landing station. Draw pits are proposed along the alignment to facilitate change of direction and underground ducting beneath the access road. Minor roadworks may be required to facilitate the installation. A precautionary catch fence will be installed in the vicinity of the alignment on the soil slope in response to request by the adjacent cable landing facility operator.

6.1.5 The major ecological impacts associated with the proposed works include:

- Direct habitat loss, either permanent or temporary;
- Disturbance impacts to surrounding habitats and fauna during construction;
- Water quality impact due to works and runoff from land; and
- Disturbance impacts to surrounding fauna, habitats and recognized sites of conservation importance during operation.

6.2 Construction Phase – Direct Impacts

Habitat Loss

6.2.1 Direct impact of the implementation of proposed cable landing ducts with associated draw pits, catch fence and beach manhole would be the loss of habitats including Developed Area and Woodland. The estimated loss of various types of habitats is shown in **Table. 6.1.**

Table 6.1 Estimated Size of Habitats Affected by the Project

Habitats	Habitat loss area (ha)	Ecological value
Developed Area	0.07	Very Low
Rocky Shore	0.01	Low
Sandy Shore	-	Low
Sea	-	Low
Shrubland	-	Low to Medium
Watercourse	-	Low
Woodland	0.04	Low

6.2.2 Direct impact on terrestrial habitats will be imposed by aboveground works of the installation of the proposed cable landing ducts with associated draw pits, catch fence and beach manhole. Most of the works will be located in the existing Developed Area. A catch fence will be installed in the woodland area alongside the present footpath, with a diameter of +/- 1.5m works area. The direct impact of the construction phase, given the very limited scale of the proposed works, is considered to be **Insignificant** due to their low ecological values.

6.2.3 The proposed beach manhole will be installed on the Rocky Shore to the immediate south of the Woodland area. No Woodland area will be occupied by the beach manhole. Besides, as the Woodland area within the Project Site has already been disturbed and scattered with anthropogenic litter, and that no large-scale clearance would be required during the construction phase, the direct impact on the Woodland habitats is considered to be **Insignificant**.

6.3 Construction Phase – Indirect Impacts

Water Quality

6.3.1 The seawater quality of its vicinity will be prone to disturbance by the works and surface runoff from land during construction phase. However, the ecological value of the Sea within the Assessment Area was ranked as Low because of its very low diversity and abundance. Due to the nature and small scale of the works, it is expected that the impact from surface runoff would be transient, hence the potential impact due to surface runoff to the sea is considered as **Minor**. To avoid contamination of seawater, construction runoff should be controlled by implementation of mitigation measures such as good site practice.

Construction Disturbance (Noise, Light, Dust and Other Human Activities)

6.3.2 Indirect impacts on the habitats and associated fauna would be induced from the temporary increase in human disturbance during the construction phase. Noise and dust generated from construction activities within the Project Site for the proposed works might temporarily reduce the utilization of adjacent habitats by wildlife during the construction phase. Especially for birds and mammals, as they are sensitive to noise and light. Noise and light generated at night from the construction site would interfere with birds and mammals nearby that are sensitive to these disturbances. Night works should also be prohibited.

6.3.3 The habitats in the immediate surrounding of the Project Site for the proposed works are Developed Area and Woodland. Developed Area and Woodland are considered of very low and low ecological value respectively. The potential impact to these habitats and associated wildlife due to construction disturbance is considered **Insignificant**. The indirect impact due to noise, dust and other human activities can further be minimized by implementation of good site practice and other mitigation measures.

6.4 Operational Phase – Direct Impacts

Overall Habitat loss

6.4.1 During the operational phase, direct impacts within the Project Site would be the permanent occupation of habitats, and in this case, it will be similar to the size specified in the assessment for the construction phase. It is considered as **Insignificant**, and no additional habitat lose will be anticipated during the operational phase.

6.5 Operational Phase – Indirect Impacts

6.5.1 Potential indirect impacts during the operational phase include disturbance to wildlife and habitat in the surrounding area arising from increased human disturbance due to maintenance and management of the proposed facilities. However, given the nature and scale of the proposed facilities, frequent maintenance and management are not expected. Hence, the indirect impacts to wildlife are considered **Insignificant**.

6.5.2 The proposed Catch Fence alongside the present footpath might occupy a small scale of land within the woodland. However, the area size of the catch fence only contributed to a small part of the total Woodland, the potential impacts to the ecosystems are considered **Minor**.

6.5.3 The proposed Beach Manhole in the Coastal Protection Area might occupy a small scale of land within the Rocky Shore area. However, the area size of the Beach Manholes only contributed to <1% of the total Rocky Shore area, the potential impacts to the ecosystems are considered **Minor**.

6.6 Potential Impacts on Recognized Sites of Conservation Importance and Species of Conservation Importance

6.6.1 A small proportion of the Assessment Area falls within the Coastal Protection Area (CPA). However, the proposed works will be small-scale, which will not affect the ecological integrity of the Coastal Protection Area. As such, the significance of ecological impact to the recognized sites of conservation importance is considered **Insignificant.**

6.6.2 The recorded individuals plant species of conservation importance i.e. *Artocarpus hypargyreus* and *Diospyros vaccinoides* were recorded outside the Project Site. Potential impacts to these species are not expected. On the other hand, all the recorded bat species flied through the Project Site and other habitats within the Assessment Area, but no bat roosts were recorded. As bats are very mobile animals, they can readily use the same type of or similar habitat nearby and none of them

exhibited fidelity to the habitats where they were found. Hence, no direct impact will be exerted on them, and the potential impacts on bats are considered **Minor**.

6.6.3 A butterfly species of conservation importance, Malayan, was recorded outside the Project Site. However, this butterfly species is mobile and can also be found in other habitats outside the Project Site. Given that the construction works will be small-scale and a temporary nature, without the implementation of mitigation measures, the potential impact to these species will be **Insignificant**. Measures will further be recommended to reduce the construction disturbance (e.g. uses of quiet machinery). With the adoption of these measures, it is expected that the disturbance impact to fauna utilizing the habitats near the works area will remain **Insignificant**.

6.6.4 Some bird, butterfly and reptile species of conservation importance were recorded outside the Project Site. However, the construction works will be small-scale and short-term. With the implementation of mitigation measures, the potential impact to these species will be **Insignificant**. Measures will further be recommended to reduce the construction disturbance (e.g. uses of quiet machinery). With the adoption of these measures, it is expected that the disturbance impact to fauna utilizing the habitats near the works area, could be reduced to Insignificant.

7. Mitigation

7.1 General

7.1.1 Mitigation measures will follow the hierarchy detailed in Annex 16 of TM-EIAO, following the order of priority: avoidance, minimization and compensation. Wherever possible, on-site mitigation measures are preferred over off-site mitigations.

7.2 Impact Avoidance

7.2.1 Recognized sites of conservation importance within the 500m Assessment Area include a Coastal Protection Area (CPA) which will be directly affected by this Project. In the subsequent stages of the Project, any adjustment in the Assessment Area for the proposed works shall take into consideration of the locations of these recognized sites of conservation importance.

7.3 Impact Minimization

7.3.1 With the Project Site area and Assessment Area, the proposed cable landing ducts and associated draw pits, catch fence and beach manhole will only involve small-scale land-based work. Only a small scale of woodland area and rocky shore area would be affected. This would greatly reduce the potential construction disturbance to the fauna in nearby habitats.

7.3.2 Good site practice listed as follows would be implemented to minimize potential impacts due to noise, dust and runoff to the surrounding environment, including:

- Regular checking should be undertaken to ensure that the work site boundaries are not exceeded and that no damage occurs to surrounding areas;
- Implementation of mitigation measures specified in ProPECC PN 1/94 to control site runoff and drainage at all work sites during construction;
- Implementation of noise control measures at all construction sites to reduce impacts of construction noise to wildlife habitats adjacent works areas;
- Implementation of dust control measures at all construction sites to minimize dust nuisance to adjacent wildlife habitats during construction activities;
- Construction debris and spoil should be covered up and/ or properly disposed of as soon as possible to avoid being washed into nearby waterbodies by rain;
- Construction effluent, site run-off and sewage should be properly collected and/ or treated;
- Dusty materials remaining after a stockpile is removed should be wetted with water;
- All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet; and
- Supervisory staff should be assigned to station on site to closely supervise and monitor the works.

8. Residual Impacts

8.1.1 The residual environmental impacts refer to the net environmental impacts after the implementation of mitigation measures. Residual impacts would include net loss of 0.07ha Developed Area, 0.04ha Woodland and 0.01ha of Rocky Shore. However, due to the small scale and the proposed works as well as the mitigation measures, the residual ecological impact is considered acceptable.

9. Monitoring and Audit Requirements

9.1.1 Regular site audit will be conducted to ensure the implementation of the proposed good site practice during the construction phase. No specific ecological monitoring is required.

10. Conclusion

10.1.1 Literature review and a one-month ecological survey were conducted to describe the ecological baseline condition of the Project Site and the Assessment Area. The proposed works would only bring minor and acceptable ecological impacts to habitats and species of conservation importance, mainly due to the small scale of the proposed works. With the proposed mitigation measures, the residual ecological impact is considered acceptable.

List of Abbreviations

AFCD - Agriculture, Fisheries and Conservation Department

ALC - Asia Link Cable

BMH - Beach Manhole

CITES - Convention on International Trade in Endangered Species of Wild Fauna and Flora

CPA - Coastal Protection Area

D - Daytime survey

DA – Developed Area

EcoIA - Ecological Impact Assessment

EIAO - Environmental Impact Assessment Ordinance

IUCN - The International Union for Conservation of Nature

N - Night-time survey

OZP - Outline Zoning Plan

PRC - The People's Republic of China

Project Site – Government land near Rural Building Lot (RBL) No. 1220 and 1221, Chung Hom Kok, Hong Kong Island

RS – Rocky Shore

SH – Shrubland

SE - Sea

SS - Sandy Shore

TM - Technical Memorandum

WAT - Watercourse

WO - Woodland

Figure 1 Recognized Sites of Conservation Importance in vicinity to the Assessment Area

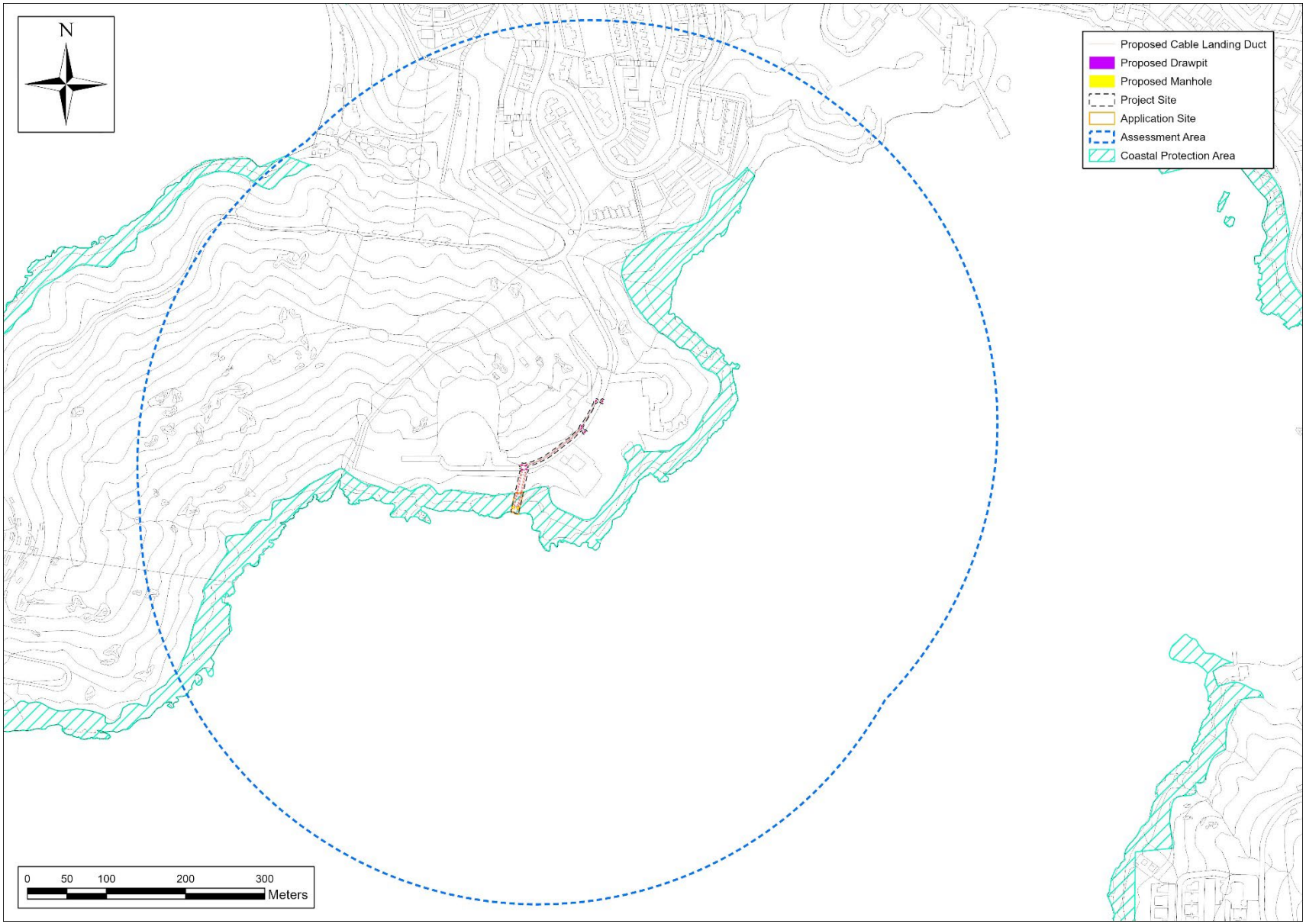

N
Proposed Cable Landing Duct
Proposed Drawpit
Proposed Manhole
Project Site
Application Site
Assessment Area
Coastal Protection Area
0 50 100 200 300
Meters

Figure 2 Survey Transects within Project Site and Assessment Area

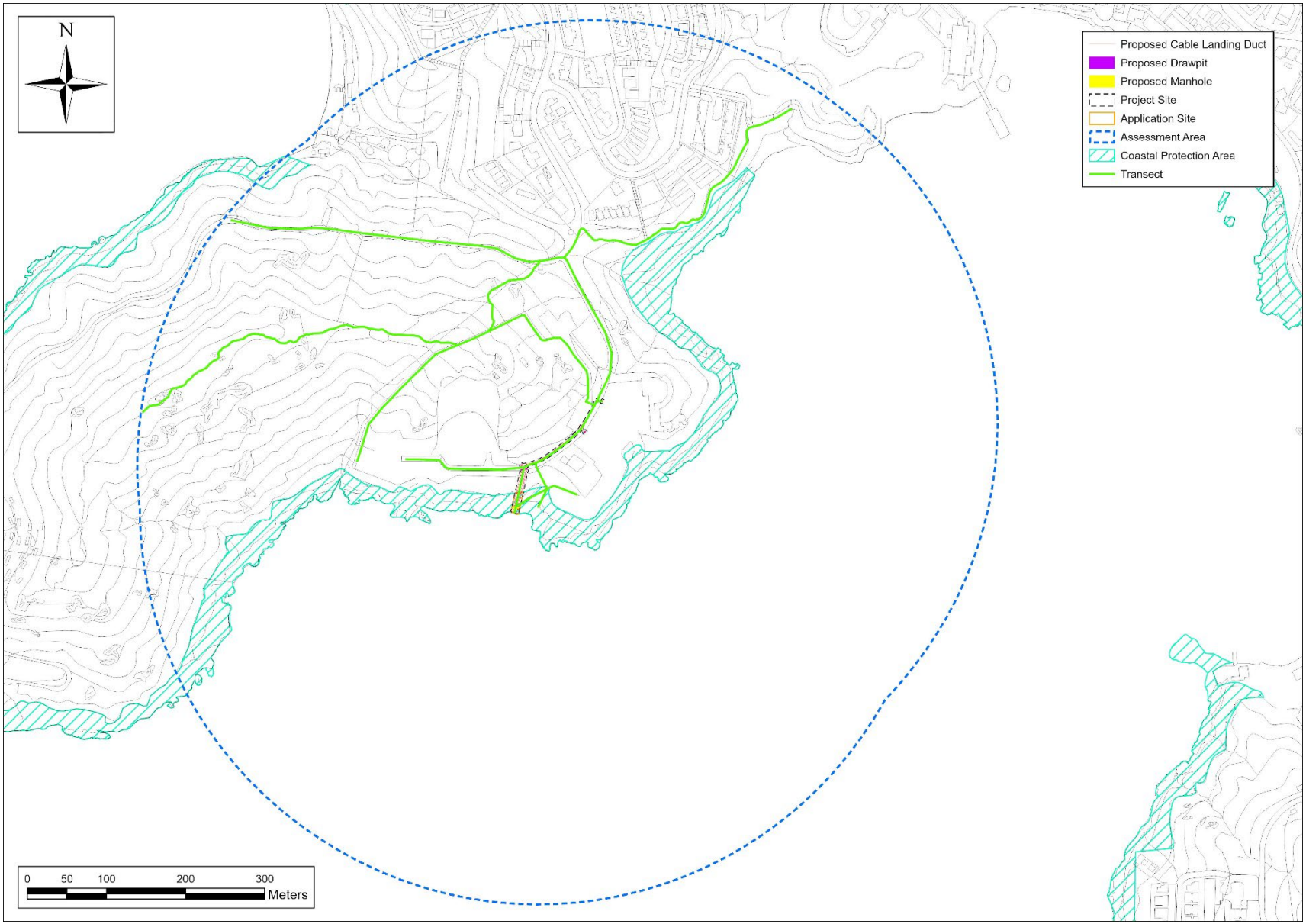

N
Proposed Cable Landing Duct
Proposed Drawpit
Proposed Manhole
Project Site
Application Site
Assessment Area
Coastal Protection Area
Transect
0 50 100 200 300
Meters

Figure 3 Habitats and Locations of Species of Conservation Importance within Assessment Area

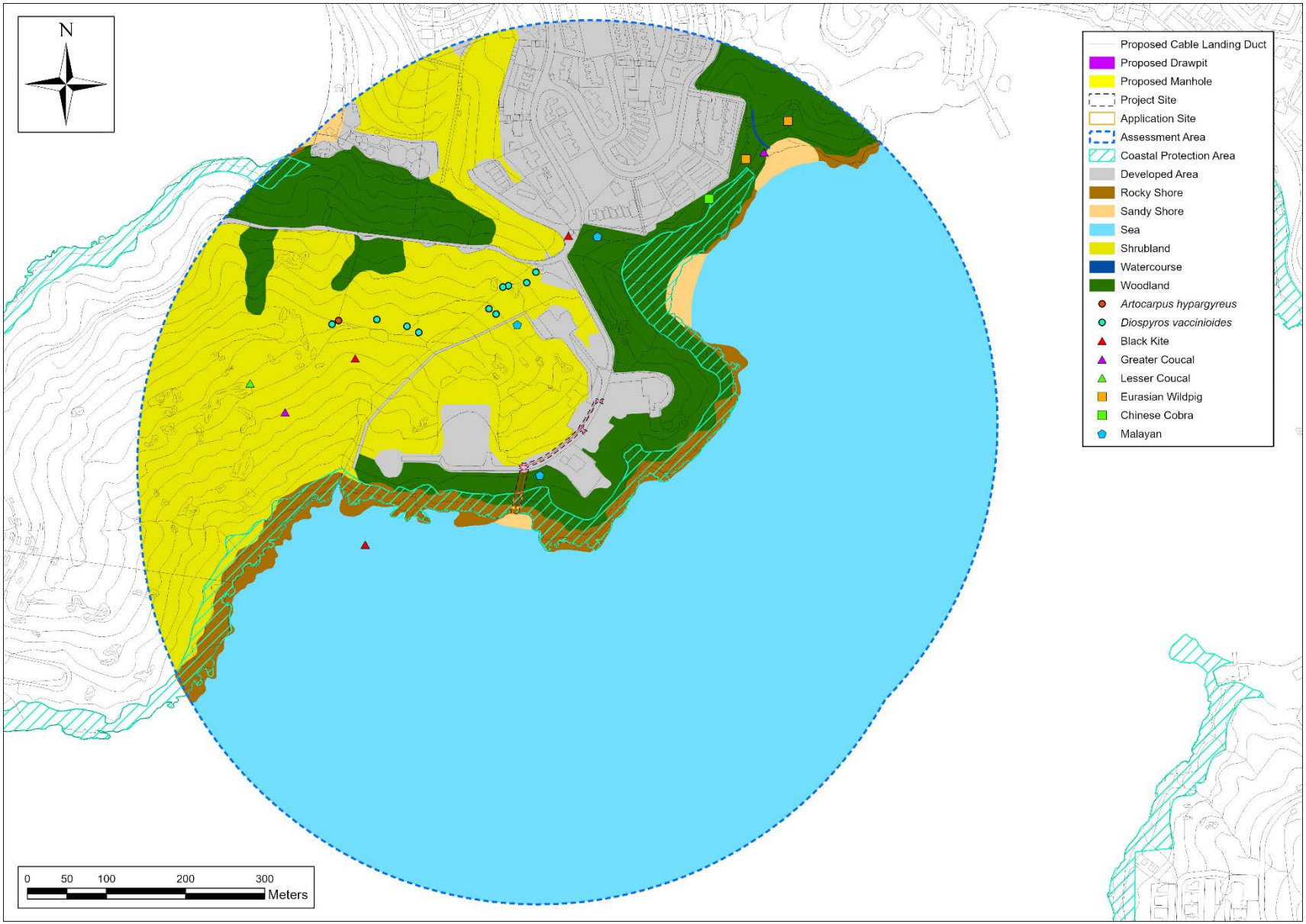

N
Proposed Cable Landing Duct
Proposed Drawpit
Proposed Manhole
Project Site
Application Site
Assessment Area
Coastal Protection Area
Developed Area
Rocky Shore
Sandy Shore
Sea
Shrubland
Watercourse
Woodland
Artocarpus hypargyreus
Diospyros vaccinioides
Black Kite
Greater Coucal
Lesser Coucal
Eurasian Wildpig
Chinese Cobra
Malayan
0 50 100 200 300
Meters

Figure 4 Representative Photos of habitats within Assessment Area

Figure 4 Representative Photos of habitats within Assessment Area

Developed Area

Rocky Shore

Sandy Shore

Sea

Shrubland

Watercourse

Woodland

Figure 5a Representative Photos of Flora Species of Conservation Importance within Assessment Area

Figure 5a Representative Photos of Flora Species of Conservation Importance within Assessment Area

Artocarpus hypargyreus

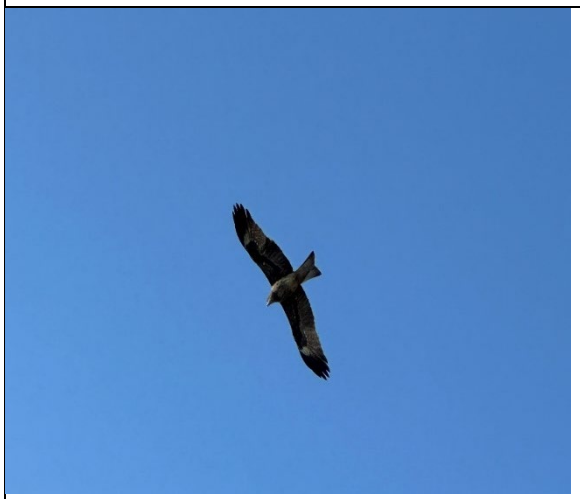
Diospyros vaccinioides

Figure 5b Representative Photos of Fauna Species of Conservation Importance within Assessment Area

Figure 5b Representative Photos of Fauna Species of Conservation Importance within Assessment Area

Chinese Cobra

Greater Coucal



Black Kite

Malayan

Appendix A – I

Appendix A Plant Species Recorded within the Assessment Area

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Abrus precatorius	Climber	Native	Common					O			
Acacia auriculiformis	Tree	Exotic	-	-			S		O		
Acacia confusa	Tree	Exotic	-		S	O	O	O	O		S
Acacia mangium	Tree	Exotic	-						S		
Acronychia pedunculata	Tree	Native	Very common					S	S		
Adenosma glutinosum	Herb	Native	Very common					S	S		
Adiantum flabellulatum	Herb	Native	Very common						S		
Agave americana	Herb	Exotic	-				S				
Ageratum conyzoides	Herb	Exotic	Common				O		S		S
Aglaia odorata	Shrub	Exotic	-				O		S		
Alangium chinense	Tree	Native	Common				S		S		
Albizia corniculata	Climber	Native	Common						S		
Alocasia macrorrhizos	Herb	Native	Very common				O		S		O
Alpinia zerumbet	Herb	native	Very common						S		
Alyxia sinensis	Climber	native	Common						S		
Antirhea chinensis	Tree	Native	Very common					S	S		
Aporusa dioica	Tree	Native	Very common					S	O	S	
Araucaria heterophylla	Tree	Exotic	-	IUCN Red List (Vulnerable)			O		S		
Archidendron lucidum	Tree	native	Common			S		S	S		
Archontophoenix alexandrae	Tree	Exotic	-				O		S		
Ardisia crenata	Shrub	Native	Common					S	S		

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Artocarpus hypargyreus	**Tree**	**Native**	**Common**	**Rare and Precious Plants of Hong Kong (Near threatened in China)** **China Plant Red Data Book** **Illustrations of Rare & endangered plant in Guangdong Province** **Threatened Species List of China's Higher Plants (Endangered, endemic species)** **IUCN Red List (Vulnerable)**				**S**			
Aster baccharoides	Herb	Native	Very common				S		S	S	
Atalantia buxifolia	Shrub	Native	Common						S		
Baeckea frutescens	Tree	Native	Very common					O			
Bambusa sp.	Herb	-	-			O	O	S	S		
Bauhinia championii	Climber	Native	Common		S	C	S		O		
Bauhinia purpurea	Tree	Exotic	-				O		S		
Bauhinia variegata	Tree	Exotic	-				O		S		
Berchemia floribunda	Climber	Native	Common						S		
Bidens alba	Herb	Exotic	Very common		O		C	S	S	O	S
Bischofia javanica	Tree	Native	Common						O		
Blechnum orientale	Herb	Native	Very common					S			S
Bombax ceiba	Tree	Exotic	-						S		
Bougainvillea spectabilis	Climber	Exotic	-						O		
Breynia fruticosa	Shrub	Native	Very common					S	S		
Bridelia tomentosa	Shrub	Native	Very common					S	O	C	
Brucea javanica	Shrub	Native	Common				S		S		
Caesalpinia crista	Climber	Native	Very common					S	S		
Calliandra haematocephala	Shrub	Exotic	-						C		

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Callicarpa kochiana	Shrub	Native	Common						S		
Cansjera rheedii	Climber	Native	Restricted					S	S		
Carica papaya	Tree	Exotic	-				O				
Caryota mitis	Tree	Exotic	-				O		S		
Cassytha filiformis	Climber	Native	Very common				S		S		
Casuarina equisetifolia	Tree	Exotic	Rare					O	S		O
Catharanthus roseus	Shrub	Exotic	-				S				
Celastrus aculeatus	Climber	Native	-			S		S			
Celtis biondii	Tree	Native	Restricted						S		
Celtis sinensis	Tree	Native	Common		S	O	S	S	O	S	
Celtis timorensis	Tree	Native	Restricted						S		
Cinnamomum camphora	Tree	Native	Common				S		S		
Cinnamomum parthenoxylon	Tree	Native	Common						S		
Citrus maxima	Tree	Exotic	-				S				
Cleistocalyx nervosum	Tree	Native	Common						S		
Clerodendrum cyrtophyllum	Shrub	Native	Common						S		
Cocculus orbiculatus	Climber	Native	Common						S		
Cocos nucifera	Tree	Exotic	-						S		
Codiaeum variegatum	Shrub	Exotic	-								
Cratoxylum cochinchinense	Tree	native	Very common					O	O	O	
Cuscuta chinensis	Herb	Native	Common						S		
Cyclea hypoglauca	Climber	Native	Common						S		
Cyclosorus parasiticus	Herb	Native	Very common			S					

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Cynodon dactylon	Herb	native	Very common				S				
Cyrtococcum patens	Herb	Native	Very common						S		
Dalbergia benthamii	Climber	Native	Common	Cap. 586 CITES Appendix II				S	O		
Daphniphyllum pentandrum	Tree	Native	Common					O			
Delonix regia	Tree	Exotic	-				S				
Dendrotrophe varians	Climber	Native	Very common						S		
Desmodium heterocarpon	Shrub	Native	Very common				S				
Desmos chinensis	Shrub	Native	Common						O		
Dianella ensifolia	Herb	Native	Very common					S	S		
Dicranopteris pedata	Herb	native	Very common				**S**	**C**			**S**
Dimocarpus longan	Tree	Exotic	Restricted	China Plant Red Data Book (Vulnerable) Wild plant under State protection (category II) Threatened Species List of China's Higher Plants (Vulnerable)			S		S	O	
Diospyros morrisiana	Tree	Native	Very common						S		
Diospyros vaccinioides	**Shrub**	**Native**	**Very common**	**Threatened Species List of China's Higher Plants (Endangered)** **IUCN Red List (Critically endangered)**				**O**			
Diplospora dubia	Tree	Native	Common					S			
Duhaldea cappa	Herb	Native	Common					S			
Duranta erecta	Climber	Exotic	-				S	S			
Dypsis lutescens	Shrub	Exotic	-				S				
Embelia ribes	Climber	Native	Common					**S**	**S**		
Emilia sonchifolia	Herb	Native	Very common				S				
Epipremnum aureum	Climber	Exotic	-						O		
Eucalyptus torelliana	Tree	Exotic	-					S			
Eurya nitida	Shrub	Native	Very common					S	S		

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Ficus elastica	Tree	Exotic	-				S				
Ficus hirta	Shrub	Native	Common						S		
Ficus hispida	Shrub	Native	Very common			S		S	O		
Ficus microcarpa	Tree	Native	Common		S	O	S	S	C		S
Ficus variegata var. *chlorocarpa*	Tree	Native	Common			S			S		
Ficus variolosa	Tree	Native	Very common					O	S		
Ficus virens var. *sublanceolata*	Tree	Native	Common						O		
Garcinia oblongifolia	Tree	Native	Very common					S	S		
Gardenia jasminoides	Shrub	Native	Common					O	S		
Glochidion eriocarpum	Shrub	Native	Very common					S	S		
Glochidion lanceolarium	Tree	Native	Common						S		
Gnetum luofuense	Climber	Native	Very common			S			S		
Hedyotis auricularia	Herb	Native	Common					S	S		
Helicteres angustifolia	Shrub	Native	Very common				S	O	S		
Heterosmilax japonica	Climber	Native	Common		O	O			S		
Hibiscus rosa-sinensis	Shrub	Exotic	-				S				
Hibiscus tiliaceus	Tree	Native	Very common				S		S		S
Holmskioldia sanguinea	Shrub	Exotic	-						S		
Homalium cochinchinensis	Tree	Native	Common						S		
Hylocereus undatus	Herb	Exotic	-				O		S		
Hyptis suaveolens	Herb	Exotic	-		O						
Ilex asprella	Shrub	Native	Very common						S		
Ilex championii	Tree	Native	Restricted			S		S			

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Ilex pubescens	Shrub	Native	Very common					S	S		
Ipomoea cairica	Climber	Exotic	Very common				O		S		
Ipomoea pes-caprae	Herb	Native	Common			O					C
Itea chinensis	Shrub	Native	Very common						S		
Ixora chinensis	Shrub	Native	Restricted				O				
Juniperus chinensis	Tree	Exotic	-				S				
Kalanchoe pinnata	Herb	Exotic	Common				S				
Lagerstroemia speciosa	Tree	Exotic	-	Cap.96			S				
Lantana camara	Shrub	Exotic	Very common			O			O		
Leucaena leucocephala	Tree	Exotic	Common		C	S	O	S	C	O	
Ligustrum sinense	Tree	Native	Common				C		S		
Liriope spicata	Herb	Native	Very common					S	S		
Litsea glutinosa	Tree	Native	Very common		S	O	S	S	O	S	
Litsea monopetala	Tree	Native	Restricted				S				
Litsea rotundifolia var. *oblongifolia*	Shrub	Native	Very common					O	S		
Livistona chinensis	Tree	Exotic	-				S		S		
Lophatherum gracile	Herb	Native	Very common						S		
Lophostemon confertus	Tree	Exotic	-			S	S		S		
Lygodium japonicum	Herb	Native	Very common					S	S		
Lygodium scandens	Herb	Native	Common			O					S
Macaranga tanarius var. *tomentosa*	Tree	Native	Common		S	C	S	S	C	S	S
Mallotus paniculatus	Tree	Native	Very common		S	O	S	S	C		
Melaleuca cajuputi subsp. *cumingiana*	Tree	Exotic	-				S				

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Melastoma malabathricum	Shrub	Native	Common					O			
Melastoma sanguineum	Shrub	Native	Common					C	S		
Melia azedarach	Tree	Exotic	Common			O	S	S	S		
Melinis repens	Herb	Exotic	Very common				O	S	S		
Melodinus suaveolens	Climber	Native	Common					S	S		
Microcos nervosa	Shrub	Native	Common						S		
Mikania micrantha	Herb	Exotic	Very common		O	O	O	S	S		
Millettia reticulata	Climber	Native	Common					S	S		
Millettia speciosa	Climber	Native	Common					O			
Mimosa pudica	Herb	Exotic	Very common				S				
Miscanthus floridulus	Herb	Native	Common		O			S	S		S
Miscanthus sinensis	Herb	Native	Very common				S	S	S		
Morinda parvifolia	Climber	Native	Very common						S		
Murraya paniculata	Tree	Exotic	-				O	S	S		
Mussaenda pubescens	Climber	Native	Very common					S	S		
Osmanthus fragrans	Tree	Exotic	-				S				
Paederia scandens	Climber	Native	Very common					S	S		
Pandanus austrosinensis	Herb	Native	-					S			
Panicum maximum	Herb	Exotic	Common		O	S	S	S	S	O	S
Parthenocissus dalzielii	Climber	Exotic	-		O				O		
Passiflora foetida	Climber	Exotic	Very common				S		S		
Phoenix loureiroi	Tree	Native	Common				O		S		
Phyllanthus cochinchinensis	Shrub	Native	Very common						S		
Phyllanthus emblica	Tree	Native	Very common					S	S		

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Phyllanthus reticulatus	Shrub	Native	Common				S	O	S		
Pilea microphylla	Herb	Exotic	Very common				S				
Pinus elliottii	Tree	Exotic	-					O			
Polyspora axillaris	Shrub	Native	Very common					C	O		
Psychotria asiatica	Tree	Native	Very common					S	O		
Psychotria serpens	Climber	Native	Very common						S		
Pteris ensiformis	Herb	Native	Common						S		
Pteris semipinnata	Herb	Native	Very common					S	S		
Pteris vittata	Herb	Native	Very common						S		
Reevesia thyrsoidea	Tree	Native	Common						S		
Rhaphiolepis indica	Shrub	Native	Very common					C	S		
Rhapis excelsa	Shrub	Native	Common				O		S		
Rhodomyrtus tomentosa	Shrub	Native	Very common					S	S		
Rhus chinensis	Tree	Native	Common					S			
Rhus hypoleuca	Shrub	Native	Common				S		S		
Rhus succedanea	Shrub	Native	Common			O		C	S		
Ricinus communis	Shrub	Exotic	Restricted				S	S	O		
Rourea microphylla	Climber	Native	Common					S	S		
Rubus reflexus	Climber	Native	Very common					S	S		
Sageretia thea	Shrub	Native	Very common						S		
Sansevieria trifasciata	Herb	Exotic	-				O				
Sapium discolor	Tree	Native	Very common				S	C	S		
Schefflera arboricola	Climber	Exotic	-				S		S		
Schefflera heptaphylla	Tree	Native	Very common			S		S	C	S	
Schima superba	Tree	Native	Common						S		

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	WO	DA	SH	WO	WAT	RS
Scleria ciliaris	Herb	Native	Very common					S			
Senna surattensis	Shrub	Exotic	-				S				
Smilax china	Climber	Native	Very common		O	O			S		
Smilax glabra	Climber	Native	Very common					O			
Solanum torvum	Shrub	Exotic	Common			S	S		S		S
Stachytarpheta jamaicensis	Shrub	Exotic	Common				S	S	S		
Stephania longa	Climber	Native	Common						S		
Sterculia lanceolata	Tree	Native	Very common		S	O	S	S	O	S	
Strophanthus divaricatus	Climber	Native	Common					S	S		
Strychnos angustiflora	Climber	Native	Common						S		
Syzygium buxifolium	Shrub	Native	Common					S			
Syzygium hancei	Tree	Native	Common						S		
Syzygium jambos	Tree	Exotic	Common				S		S		
Syzygium levinei	Tree	Native	Common				S				
Tadehagi triquetrum	Shrub	Native	Very common				S	S	S		
Tetracera asiatica	Climber	Native	Very common					S	S		
Tetradium glabrifolium	Tree	Native	Common					O	S		
Thunbergia grandiflora	Climber	Exotic	Common						S		
Trema tomentosa	Shrub	Native	Common				S	S	O		
Tylophora ovata	Climber	Native	Common						S		
Urena lobata	Herb	Native	Common						S		
Vernicia montana	Tree	Exotic	-						S		
Vernonia cinerea	Herb	Native	Very common						S		
Vitex negundo	Shrub	Native	Common						S		

Scientific name	Growth form	Origin	Rarity in Hong Kong [1]	Protection/Conservation status [2 3 4 5 6 7 8 9 10]	Relative Abundance						
					Project Site		Assessment Area				
					DA	**WO**	**DA**	**SH**	**WO**	**WAT**	**RS**
Vitex quinata	Tree	Native	Common					S	S		
Wedelia trilobata	Herb	Exotic	Common		O	S	S	S	O	O	O
Wikstroemia indica	Shrub	Native	Common							S	
Youngia japonica	Herb	Native	Very common						S		
Zanthoxylum avicennae	Tree	Native	Common			O		S	C		
Zanthoxylum nitidum	Climber	Native	Very common					S	S		
Zanthoxylum piperitum	Shrub	Exotic	-				O		S		
					18	31	80	93	161	15	16

Notes:
1. Corlett et al. (2000). Hong Kong vascular plants: distribution and status.
2. International Union of Conservation for Nature. (2022). The IUCN Red List of Threatened Species. Version 2021-3.
3. Convention on International Trade in Endangered Species of Wild Flora and Fauna (2020). Appendices I, II and III.
4. Qin et al. (2017). Threatened Species List of China's Higher Plants.
5. Fu & Chin (1992). China Plant Red Data Book – Rare and Endangered Plants.
6. Wu et al. (1988). Illustration of Rare & endangered plant in Guangdong Province.
7. Hu et al. (2003). Rare and Precious Plants of Hong Kong.
8. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
9. State Forestry Administration & Ministry of Agriculture. (1999). List of Wild Plants under State Protection (Part 1).
10. Cap. 96 Forests and Countryside Ordinance.

- **Species in bold are considered of conservation importance.**
- * *Casuarina equisetifolia, Dimocarpus longan, Lagerstroemia speciosa, Litchi chinensis* and *Michelia* x *alba* are exotic to Hong Kong and not considered of conservation importance, despite being considered rare/ very rare by Corlett *et al.* (2000), listed as Vulnerable by IUCN (2022), listed as endangered or vulnerable in Threatened Species List of China's Higher Plants, listed as vulnerable in China Plant Red Data Book, listed under Category II in the List of Wild Plants under State Protection (Part 1), listed under Cap. 96 Forests and Countryside Ordinance, and/ or Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
- ^ *Dalbergia* spp. are listed under Appendix II of CITES and protected under Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance in Hong Kong as species in this genus is facing threat due to the overexploitation for its valuable wood (known as rosewood). In the current study, *Dalbergia benthamii* was recorded. As the recorded Dalbergia are climber which is not relevant to the timber exploitation. In addition, the species are considered 'common' in Hong Kong by Corlett *et al.* (2000). Thus, they are not considered as species of conservation importance in the current Study.

Abbreviations:
- Habitats: DA: Developed Area, RS: Rocky Shore, SE: Sea, SH: Shrubland, SS: Sandy Shore, WAT: Watercourse, WO: Woodland
- Relative abundance: C = Common; O = Occasional; S = Scarce

Appendix B Avifauna Species Recorded within the Assessment Area

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitat						
				Project Site		Assessment Area				
				DA	WO	DA	RS	SE	SH	WO
Black Kite	***Milvus migrans***	**Common resident and winter visitor. Widely distributed in Hong Kong.**	**Fellowes et al. (2002): (RC); Cap. 170; Cap. 586; List of Wild Animals under State Priority Conservation: Class II; CITES: Appendix II**			**1**		**2**	**8**	
Black-collared Starling	*Gracupica nigricollis*	Common resident. Widely distributed in Hong Kong.	-			2				3
Blue Rock Thrush	*Monticola solitarius*	Locally common passage migrant and winter visitor. Widely distributed in hillside grassland throughout Hong Kong.	-						1	
Blue Whistling Thrush	*Myophonus caeruleus*	Common resident. Widely distributed in shrubland and woodland throughout Hong Kong.	-							1
Chinese Blackbird	*Turdus mandarinus*	Common winter visitor and migrant. Widely distributed in Hong Kong.	-						1	
Chinese Bulbul	*Pycnonotus sinensis*	Abundant resident. Widely distributed in Hong Kong.	-	7	4				32	14
Common Sandpiper	*Actitis hypoleucos*	Common passage migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong.	-				1			
Crested Myna	*Acridotheres cristatellus*	Abundant resident. Widely distributed in Hong Kong.	-			5				
Eurasian Tree Sparrow	*Passer montanus*	Abundant resident. Widely distributed in Hong Kong.	-	4		7				
Greater Coucal	***Centropus sinensis***	**Common resident. Widely distributed in Hong Kong.**	**Cap. 170; List of Wild Animals under State Priority Conservation: Class II**						**1**	**1**

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitat						
				Project Site		Assessment Area				
				DA	WO	DA	RS	SE	SH	WO
Japanese White-eye	*Zosterops simplex*	Abundant resident. Widely distributed in Hong Kong.	-		3				14	11
Large-billed Crow	*Corvus macrorhynchos*	Common resident. Widely distributed in Hong Kong	-							1
Lesser Coucal	***Centropus bengalensis***	**Uncommon resident. Widely distributed in Hong Kong.**	**Cap. 170; List of Wild Animals under State Priority Conservation: Class II**						**1**	
Masked Laughingthrush	*Pterorhinus perspicillatus*	Abundant resident. Widely distributed in shrubland throughout Hong Kong.	-						11	
Olive-backed Pipit	*Anthus godlewskii*	Common passage migrant and winter visitor. Widely distributed in Hong Kong.	-							1
Oriental Magpie-Robin	*Copsychus saularis*	Abundant resident. Widely distributed in Hong Kong.	-		1	1				1
Pallas's Leaf Warbler	*Phylloscopus proregulus*	Common winter visitor and migrant. Found in woodland throughout Hong Kong.	-						2	2
Red-billed Blue Magpie	*Urocissa erythroryncha*	Common resident. Widely distributed in woodland edges throught Hong Kong	-			2				
Red-whiskered Bulbul	*Pycnonotus jocosus*	Abundant resident. Widely distributed in Hong Kong.	-	2	2	4			28	18
Spotted Dove	*Spilopelia chinensis*	Abundant resident. Widely distributed in Hong Kong.	-	2		2				
Yellow-browed Warbler	*Phylloscopus inornatus*	Abundant winter visitor and migrant. Widely distributed in woodland throughout Hong Kong.	-	1	1				1	1

Notes:
1. AFCD (2023). Hong Kong Biodiversity Database.
2. Cap. 170 Wild Animals Protection Ordinance.
3. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
4. Convention on International Trade in Endangered Species of Wild Flora and Fauna. Appendices I, II and III.
5. Fellowes et al. (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
   • For conservation status listed by Fellowes et al. (2002), letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
6. International Union of Conservation for Nature. The IUCN Red List of Threatened Species. Version 2023
7. Jiang, Z. G., Jiang, J. P., Wang, Y. Z., Zhang, E., Zhang, Y. Y., Li, L. L., … & Dong, L. (2016). Red list of China's vertebrates

8. List of State Protected Wild Animals, promulgated by the State Council
9. IUCN (2023). IUCN Red List Version 2023.

Abbreviation:
DA: Developed Area, RS: Rocky Shore, SE: Sea, SH: Shrubland, SS: Sandy Shore, WO: Woodland
Conservation Status in Fellowes et al. (2002): GC: Global Concern; LC = Local Concern; PGC = Potential Global Concern; PRC = Potential Regional Concern; RC = Regional Concern
BOLD: Species of conservation interest
All wild bird species are protected under Cap. 170 Wild Animals Protection Ordinance in Hong Kong

Appendix C Butterfly Species Recorded within the Assessment Area

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitat						
				Project Site		Assessment Area				
				DA	WO	DA	RS	SH	WAT	WO
Blue-spotted Crow	*Euploea midamus*	Very Common. Widely distributed throughout Hong Kong	-	1		1				3
Common Bluebottle	*Graphium sarpedon*	Very Common. Widely distributed throughout Hong Kong	-		1			2		
Common Five-ring	*Ypthima baldus*	Very Common. Widely distributed throughout Hong Kong.	-	2		2				
Common Grass Yellow	*Eurema hecabe*	Very Common. Widely distributed throughout Hong Kong	-	3		7		4		3
Common Hedge Blue	*Acytolepis puspa*	Common. Widely distributed throughout Hong Kong	-	3		8		2		
Common Mormon	*Papilio polytes*	Very Common. Widely distributed throughout Hong Kong	-	1	2	5		2		1
Common Sailer	*Neptis hylas*	Very Common. Widely distributed throughout Hong Kong	-	1		1		1		1
Dark Brand Bush Brown	*Mycalesis mineus*	Very Common. Widely distributed throughout Hong Kong	-		2				1	
Forest Hopper	*Astictopterus jama*	Common. Widely distributed throughout Hong Kong.	-					2		
Formosan Swift	*Borbo cinnara*	Common. Widely distributed throughout Hong Kong.	-		1			2		
Green Flash	*Artipe eryx*	Uncommon. Widely distributed throughout Hong Kong	-							1
Indian Cabbage White	*Pieris canidia*	Very Common. Widely distributed throughout Hong Kong	-					3		
Indian Palm Bob	*Suastus gremius*	Uncommon.Widely distributed throughout Hong Kong.	-					2		
Lemon Emigrant	*Catopsilia pomona*	Common. Widely distributed throughout Hong Kong	-					4		
Lime Blue	*Chilades lajus*	Common. Widely distributed throughout Hong Kong	-		1			1		1
Lime Butterfly	*Papilio demoleus*	Common. Widely distributed throughout Hong Kong	-			1				1

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitat						
				Project Site		Assessment Area				
				DA	WO	DA	RS	SH	WAT	WO
Malayan	***Megisba malaya***	**Very Rare. North Lantau Island**	**Fellowes et al. (2002): LC**					**4**		**5**
Pale Grass Blue	*Pseudozizeeria maha*	Very Common. Widely distributed throughout Hong Kong	-	1		12	7			
Plum Judy	*Abisara echerius*	Very Common. Widely distributed throughout Hong Kong	-	2	2	3				2
Red Helen	*Papilio helenus*	Very Common. Widely distributed throughout Hong Kong	-	1		4		3		2
Red-base Jezebel	*Delias pasithoe*	Very Common. Widely distributed throughout Hong Kong	-	14		47	11	53	3	11
Restricted Demon	*Notocrypta curvifascia*	Uncommon. Widely distributed throughout Hong Kong.	-		1			1		
Rustic	*Cupha erymanthis*	Very Common. Widely distributed throughout Hong Kong	-						1	3
Short-banded Sailer	*Phaedyma columella*	Common. Widely distributed throughout Hong Kong.	-					1		2
Silver Streak Blue	*Iraota timoleon*	Uncommon. Widely distributed throughout Hong Kong.	-					1		
South China Bush Brown	*Mycalesis zonata*	Common.Widely distributed throughout Hong Kong.	-	2		3				1
Tailless Line Blue	*Prosotas dubiosa*	Vagrant. North Lantau Island	-					5		

Notes:
1. AFCD (2023). Hong Kong Biodiversity Database.
2. Cap. 170 Wild Animals Protection Ordinance.
3. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
4. Convention on International Trade in Endangered Species of Wild Flora and Fauna. Appendices I, II and III.
5. Fellowes et al. (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
• For conservation status listed by Fellowes et al. (2002), letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
6. International Union of Conservation for Nature. The IUCN Red List of Threatened Species. Version 2023
7. Jiang, Z. G., Jiang, J. P., Wang, Y. Z., Zhang, E., Zhang, Y. Y., Li, L. L., ... & Dong, L. (2016). Red list of China's vertebrates
8. List of State Protected Wild Animals, promulgated by the State Council
9. IUCN (2023). IUCN Red List Version 2023.

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Conservation Status in Fellowes et al. (2002): GC: Global Concern; LC = Local Concern; PGC = Potential Global Concern; PRC = Potential Regional Concern; RC = Regional Concern
BOLD: Species of conservation interest

Appendix D Dragonfly Species Recorded within the Assessment Area

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitats					
				Project Site		Assessment Area			
				DA	WO	DA	RS	SH	WO
Common Blue Skimmer	*Orthetrum glaucum*	Abundant. Widely distributed in streams, conduits, drainage channels, seepages and road gutters throughout Hong Kong.	-			4		2	
Green Skimmer	*Orthetrum sabina sabina*	Abundant. Widely distributed in all wetland habitats throughout Hong Kong.	-					1	
Wandering Glider	*Pantala flavescens*	Abundant. Widely distributed all over Hong Kong.	-	28	12	32	11	44	17

Notes:
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4. Convention on International Trade in Endangered Species of Wild Flora and Fauna. Appendices I, II and III.
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6. International Union of Conservation for Nature. The IUCN Red List of Threatened Species. Version 2023
7. Jiang, Z. G., Jiang, J. P., Wang, Y. Z., Zhang, E., Zhang, Y. Y., Li, L. L., ... & Dong, L. (2016). Red list of China's vertebrates
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BOLD: Species of conservation interest

Appendix E Reptile Species Recorded within the Assessment Area

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitats			
				Project Site	Assessment Area		
				DA	DA	SH	WO
Bowring's Gecko	*Hemidactylus bowringii*	Distributed throughout Hong Kong.	-		3		
Chinese Cobra	***Naja atra***	**Common and widely distributed in Hong Kong.**	**IUCN Red List: VU; Fellowes et al. (2002): PRC; Cap. 586; Red List of China's Vertebrates: VU; CITES: Appendix II**			**1**	
Chinese Gecko	*Gekko chinensis*	Widely distributed throughout Hong Kong.	-	3		1	2
Garnot's Gecko	*Hemidactylus garnotii*	Distributed in Lantau Island, Hong Kong Island and eastern New Territories.	-			2	

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5. Fellowes et al. (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
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6. International Union of Conservation for Nature. The IUCN Red List of Threatened Species. Version 2023
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Appendix F Amphibians Species Recorded within the Assessment Area

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,5,6,7,8,9]	Habitats				
				Project Site		Assessment Area		
				DA	WO	DA	SH	WO
Greenhouse frog	*Eleutherodactylus planirostris*	Widely distributed throughout Hong Kong.	-	7	2	5	3	2

Notes:
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5. Fellowes et al. (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
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Appendix G1 Mammal Species Recorded within the Assessment Area

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitats		
				Project Site	Assessment Area	
				DA	DA	WO
Domestic Dog	*Canis lupus familiaris*	Widely distributed in urban and countryside areas throughout Hong Kong.	-	2	5	
Eurasian Wild Pig	*Sus scrofa*	Very widely distributed in countryside areas throughout Hong Kong.	-			5

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6. International Union of Conservation for Nature. The IUCN Red List of Threatened Species. Version 2023
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BOLD: Species of conservation interest

Appendix G2 Mammal Species Recorded within the Assessment Area using Bat Acoustic Detector

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitat					
				Project Site		Assessment Area			
				DA	WO	DA	SH	WAT	WO
Chinese Pipistrelle	***Hypsugo pulveratus***	**Only several records in the countryside areas at Ting Kau, Ma On Shan and Lin Ma Hang, and several records of stray individuals inside buildings.**	**Fellowes et al. (2002): (LC); Cap. 170**			✓			✓
Japanese Pipistrelle	***Pipistrellus abramus***	**Widely distributed throughout Hong Kong.**	**Cap. 170**	✓	✓	✓	✓		✓
Least Pipistrelle	***Pipistrellus tenuis***	**Uncommon. Ten-something records found in Nam Chung, Sheung Wo Hang, Lin Ma Hang, Plover Cove Country Park, Yuen Long, Shek Pik, Deep Water Bay, Ho Pui and Ho Chung.**	**Cap. 170**			✓		✓	✓

Notes:
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4. Convention on International Trade in Endangered Species of Wild Flora and Fauna. Appendices I, II and III.
5. Fellowes et al. (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
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Presence: ✓
BOLD: Species of conservation interest

Appendix H Relative Abundance of Aquatic Fauna Recorded within Assessment Area

Common Names[1]	Scientific Names[1]	Rarity and Distribution in Hong Kong[1]	Conservation status[2,3,4,5,6,7,8,9]	Habitat
				Assessment Area
				WAT
Mangrove snapper	*Lutjanus argentimaculatus*	Widely distributed throughout Hong Kong.	-	++
-	*Terapon jarbua*	Widely distributed throughout Hong Kong.	-	+
-	*Varuna litterata*	Widely distributed throughout Hong Kong.	-	++

Notes:
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5. Fellowes et al. (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
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Relative Abundance: +: Scare, ++: Common, +++: Dominate.

Appendix I Relative Abundance of Intertidal Fauna Recorded within Assessment Area

Scientific Names[1]	Habitat		Conservation Status[2,3,4,5,6,7,8,9]
	Assessment Area		
	RS	SS	
Algae			
Harveylithon sp.	+		-
Hildenbrandia sp.	++		-
Neoralfsia expansa	+		-
Ulva sp.	+		-
Chiton			
Liolophura japonica	+		-
Limpet/false limpet			
Cellana grata	+		-
Cellana toreuma	+		-
Nipponacmea concinna	+		-
Patelloida pygmaea	+		-
Patelloida saccharina	++		-
Snail			
Echinolittorina pascua	+		-
Echinolittorina vidua	+		-
Lunella coronata	+	+	-
Monodonta labio	+		-
Planaxis sulcatus	++		-
Thais clavigera	+		-
Bivalve			
Saccostrea cucullata	+++	+	-
Septifer virgatus	++		-

Scientific Names[1]	Habitat		Conservation Status[2,3,4,5,6,7,8,9]
	Assessment Area		
	RS	SS	
Barnacle			
Captiulum mitella	++		-
Tetraclita japonica	++		-
Tetraclita squmosa	+		-
Crab			
Grapsus albolineatus	+		-
Parasesarma pictum	+		-
Thalamita danae	+		-
Others			
Ligia exotica	++	+++	-

Notes:
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Relative Abundance: +: Scare, ++: Common, +++: Dominate.