Appendix 4

Ecological Impact Assessment

Quotation Ref.:23-03296 - Provision of Services for Conducting Ecological Impact Assessment for Planning a Supersite for Greater Bay Area Air Quality Laboratory and Meteorological Monitoring at Tsim Bei Tsui

Ecological Impact Assessment Report

PREPARED FOR

環境保護署
Environmental Protection Department

Environmental Protection Department

DATE
16 April 2025

REFERENCE
0712335

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Quotation Ref.:23-03296 - Provision of Services for Conducting Ecological Impact Assessment for Planning a Supersite for Greater Bay Area Air Quality Laboratory and Meteorological Monitoring at Tsim Bei Tsui

Ecological Impact Assessment Report

0712335

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

The Chief Executive announced a new policy in the 2022 Policy Address to strengthen regional cooperation in responding to climate change and air pollution control by establishing a supersite for Greater Bay Area (GBA) Air Quality Laboratory and Meteorology Monitoring (the "Supersite" or "the Project") in Hong Kong to provide regional air pollution and weather monitoring and forecasting services.

Tsim Bei Tsui (TBT) is identified as the preferred area for siting the GBA Supersite as it is located near the centre of the Pearl River Estuary, with few nearby residents and no major pollution sources, making it suitable for regional monitoring without interference from local pollutants. The Project Site is proposed to be in Tsim Bei Tsui at Deep Bay Road, opposite to the Tsim Bei Tsui Police Post. The proposed Project Site is shown in ***Figure 1.1***.

The Project Site is currently zoned as "Green Belt" ("GB") on the approved Lau Fau Shan & Tsim Bei Tsui Outline Zoning Plan (OZP) No. S/YL-LFS/11. According to the Schedule of Uses of the pertinent OZP, the proposed development of Supersite falls into the "Government Use (not elsewhere specified)" on Column 2, such that permission from the Town Planning Board (TPB) is required. Such application under Section 16 (s.16) of the Town Planning Ordinance to the TPB shall be arranged separately at later stage.

The site also falls in the Wetland Buffer Area (WBA) of the Deep Bay Area, an ecological impact assessment (EcoIA) would need to be submitted for obtaining planning permission from the TPB according to the TPB guidelines (TPB PG-No. 12C). The Assessment Area for the purpose of the ecological impact assessment includes areas within 500 m from the boundary of the Project as shown in ***Figure 1.1***.

A 12-month ecological survey was conducted for the Project, covering dry and wet seasons between November 2023 and October 2024. This Ecological Impact Assessment Report is prepared to assess the potential impacts associated with the construction and operation of the Project.

1.2 OBJECTIVE OF THE REPORT

The main objective of the report is to summarise the findings of the literature review, ecological field surveys and analysis of all data collected so as to provide ecological data for assessing the potential impact that would arise from the proposed works. The aim is to protect, maintain or rehabilitate the natural environment as far as possible and to facilitate mitigation measures to be drawn up to avoid or minimise impact, particularly to any ecologically important species and/or habitats.

1.3 STRUCTURE OF THE REPORT

Following this introductory section, the remainder of this Report is arranged as follows:

- *Section 2* Relevant Legislation and Assessment Criteria
- *Section 3* Literature Review

Legend

- Project Site
- 500m Assessment Area

南沙莆
Nam Sha Po

DEEP BAY ROAD

海堤 Seawall

化糞池

深灣路

DEEP BAY ROAD

尖鼻咀
Tsim Bei Tsui

尖鼻咀
有機農莊

施工中

碼頭
Jetty

墓地

墓地
Graves

墓地
Graves

10
20
30
50

N
Metres
0 100 200

Figure 1.1

Project Site and 500m Assessment Area

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- *Section 4* Ecological Survey Methodology
- *Section 5* Survey Findings
- *Section 6* Evaluation of Habitat and Species
- *Section 7* Impact Identification and Evaluation
- *Section 8* Cumulative Impacts
- *Section 9* Mitigation and Precautionary Measures
- *Section 10* Residual Ecological Impacts
- *Section 11* Conclusion

2. RELEVANT LEGISLATION AND ASSESSMENT CRITERIA

The relevant legislation and associated guidelines applicable to this Report include the following:

- Forests and Countryside Ordinance (Cap. 96);
- Wild Animals Protection Ordinance (Cap. 170);
- Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586);
- Country Parks Ordinance (Cap. 208);
- Town Planning Ordinance (Cap. 131);
- Environmental Impact Assessment Ordinance (Cap. 499) and the Technical Memorandum on Environmental Impact Assessment Process under the Environmental Impact Assessment Ordinance (EIAO-TM);
- Environmental Impact Assessment Ordinance (EIAO) Guidance Notes No. 6/2023, 7/2023, 10/2023 and 11/2023;
- Hong Kong Planning Standards and Guidelines Chapter 10 (HKPSG);
- United Nations Convention on Biodiversity (1992);
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- The International Union for Conservation of Nature (IUCN) Red List of Threatened Species; and
- Peoples' Republic of China (PRC) Regulations and Guidelines.

3. LITERATURE REVIEW

A review of findings from relevant scientific papers, reports and previous environmental impact assessment (EIA) reports adjacent to the Assessment Area was conducted to identify any available ecological information. Based on recent aerial photos and relevant previous studies, habitats and species of conservation importance previously recorded were identified. General studies (if any), which may not necessarily focus on the Assessment Area, was also reviewed and relevant information was extracted from the report(s). While unpublished, additional baseline information from Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study) overlapping with the Assessment Area was also referenced and included in the findings with permission obtained from the project proponent.

3.1 SITE OF CONSERVATION IMPORTANCE

The Assessment Area falls within the sites of conservation importance, including Mai Po Inner Deep Bay Ramsar Site, Sites of Special Scientific Interest (SSSIs), Wetland Conservation Area (WCA), Wetland Buffer Area (WBA) and Coastal Protection Area (CPA), as shown in ***Figure 3.1*** and detailed in following sections.

3.1.1 MAI PO INNER DEEP BAY RAMSAR SITE

Mai Po Inner Deep Bay has been designated as a Ramsar Site in 1995 under the Ramsar Convention. The Ramsar Site covers about 1500ha of wetland with a high diversity of habitats, including intertidal mudflats backed by mangal, tidal shrimp ponds (gei wais), fishponds and reedbeds. The mangal is the largest in Hong Kong while the reedbed is the largest in Hong Kong and Guangdong Province.

Management of the Mai Po Inner Deep Bay Ramsar Site is determined by a management plan maintained by Agriculture, Fisheries and Conservation Department. The management plan divided the Ramsar Site into several zones to determine the management actions for the area.

3.1.2 SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)

A total of three SSSIs, namely Tsim Bei Tsui SSSI, Inner Deep Bay SSSI, and Tsim Bei Tsui Egretry SSSI, fall within the Assessment Area. Their locations are shown in ***Figure 3.1***. Details of SSSIs are as presented below.

3.1.2.1 INNER DEEP BAY SSSI

Inner Deep Bay SSSI was designated in 1986 in recognition of the ecological importance of the mudflat as a feeding and resting ground for waterbirds. Approximately 50,000 waterbirds of about 300 species visit the mudflat every winter. Among these species over 20 are considered to be globally threatened, including one fifth of the global population of Black-faced Spoonbill. The mudflat and shallow waters also support of wide variety of organisms that are of economic value such as mangrove crabs (e.g. *Scylla paramamosain*) and shrimps (e.g. *Metapenaeus* sp.), as well as being the type locality of Sesarmine Crab *Perisesarma maipoensis* which is endemic to the site.

Legend

- Project Site
- 500m Assessment Area

Sites of Conservation Importance

- Sites of Special Scientific Interest
- Mai Po Inner Deep Bay Ramsar Site
- Coastal Protection Area
- Wetland Conservation Area
- Wetland Buffer Area

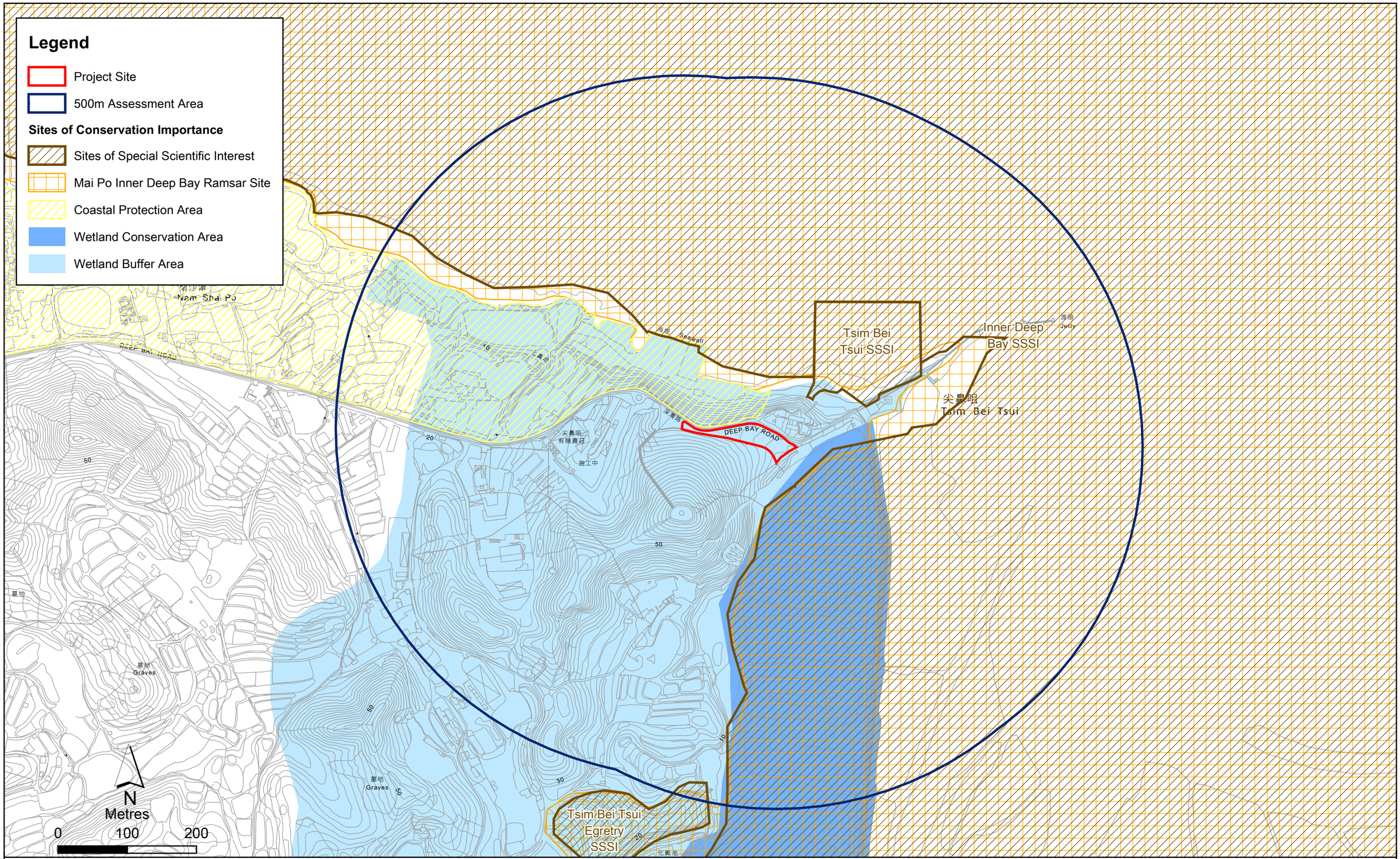

Figure 3.1

Sites of Conservation Importance

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3.1.2.2 TSIM BEI TSUI SSSI

Tsim Bei Tsui SSSI was designated in 1985 to protect the mature mangrove community present at the site. Representative species present include *Bruguiera gymnorhiza*, the site is also the only known habitat for the large mangrove pulmonate snail, *Ellobium polita*.

3.1.2.3 TSIM BEI TSUI EGRETRY SSSI

Tsim Bei Tsui Egretry SSSI was designated in 1989 and used to support several hundred pairs of egrets and herons including Little Egret, Great Egret, Cattle Egret, Chinese Pond Heron and Black-crowned Night Heron. However, the egretry was not included in AFCD's list of active egretries in 2006 and has been abandoned since 1991[1].

3.1.3 WETLAND CONSERVATION AREA (WCA)

Fishponds continuous and adjoining to the Deep Bay Area are designated under TPB PG-No. 12C as the WCA, with the aim of protecting the integrity of the Deep Bay wetland ecosystem. Any development in the WCA should normally comply with the "No-Net-Loss in Wetland" principle. Other than permitted essential conservation or infrastructural works, no developments involving pond filling or other works detrimental to the ecological function of the wetland are allowed within the WCA.

3.1.4 WETLAND BUFFER AREA (WBA)

The WBA is also designated under TPB PG-No. 12C to include a buffer of about 500m on the landward side of the WCA. The planning intention is to protect the ecological integrity of wetlands within the WCA and prevent any development that would have a negative off-site disturbance impact on the WCA. Developments within the WBA are required to demonstrate that ecological impacts on the WCA will be minimized and any negative ecological impacts will be fully mitigated through positive measures.

3.1.5 COASTAL PROTECTION AREA (CPA)

CPA is distributed along the coastal area of the Tsim Bei Tsui. This zoning is intended to conserve, protect and retain the natural coastlines and the sensitive coastal natural environment, including attractive geological features, physical landform or area of high landscape, scenic or ecological value, with a minimum of built development. There is a general presumption against development in this zone. In general, only developments that are needed to support the conservation of the existing natural landscape or scenic quality of the area or are essential infrastructure projects with overriding public interest may be permitted. These coastal areas should be protected against land filling, land excavation or stream diversion and encroachment by developments, for which permission from Town Planning Board (TPB) is required.

[1] AFCD (2007). Review of Egretries in Hong Kong. AFCD Biodiversity Newsletter. Issue no. 14, March 2007.

3.2 PREVIOUSLY RECORDED SPECIES OF CONSERVATION IMPORTANCE

Relevant literature that contains baseline information on the terrestrial ecological resources of the Assessment Area is listed in ***Table 3-1*** below. A map showing their Assessment Areas, whenever defined, is provided in ***Figure 3.2***.

- Approved Mai Po & Fairview Park Outline Zoning Plan S/YL-MP/6
- TPB PG-No. 12C - Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance
- Protection of Wetlands in Hong Kong, AFCD *(*AFCD, 2000*)*[2]
- Hong Kong Biodiversity, an AFCD Biodiversity Newsletter (AFCD, 2007)[3]
- Mai Po Inner Deep Bay Ramsar Site Management Plan (AFCD, 2011)[4]
- Monthly Waterbird Monitoring Summer and Winter Report 2017-2022 (HKBWS, 2022)[5]
- The Avifauna of Hong Kong[6]
- A Field Guide to the Terrestrial Mammals of Hong Kong (AFCD, 2007)[7]
- *Pteroptyx maipo* Ballantyne, a new species of bent-winged firefly (Coleoptera: Lampyridae) from Hong Kong, and its relevance to firefly biology and conservation. (Ballantyne et. al., 2011)[8]
- A new species of firefly from Hong Kong – *Pteroptyx maipo* (Yiu, V, 2011)[9]
- A study of Rhagophthalmidae and Lampyridae in Hong Kong with descriptions of new species (Coleoptera) (Yiu, V, 2011)[10]
- Spraints demonstrate small population size and reliance on fishponds for Eurasian otter (*Lutra lutra*) in Hong Kong (McMillan et al., 2022)[11]
- Forgotten but not Gone: Rediscovery of Eurasian Otter *Lutra lutra* in Lantau, Hong Kong (Hui et al., 2024)[12]

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[2] AFCD (2000). Legislative Council Paper NO. CB(2) 397/00-01 (03) – Protection of Wetlands in Hong Kong. Information reviewed.
[3] AFCD (2007). Camera Trap Survey of Hong Kong Terrestrial Mammals in 2002-06. Issue no. 15, December 2007.
[4] AFCD (2011). Mai Po Inner Deep Bay Ramsar Site Management Plan.
[5] HKBWS (2024). Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2017-2022.
[6] Carey et. al., (2001) The Avifauna of Hong Kong. Hong Kong Bird Watching Society, Hong Kong.
[7] Shek, C.T. (2007). A Field Guide to the Terrestrial Mammals of Hong Kong
[8] Ballantyne et. al. (2011). *Pteroptyx maipo* Ballantyne, a new species of bent-winged firefly (Coleoptera: Lampyridae) from Hong Kong, and its relevance to firefly biology and conservation. Zootaxa, 2931, 8-34
[9] Yiu, V. (2011). A new species of firefly from Hong Kong – *Pteroptyx maipo* Ballantyne, 2011. Insect News (Hong Kong Entomological Society Newsletter), 3, 2-7.
[10] Yiu, V. (2017). A study of Rhagophthalmidae and Lampyridae in Hong Kong with descriptions of new species (Coleoptera): Part 2. Lampyrid 4: 59-111
[11] McMillan, S. E., Wong, A. T. C., Tang, S. S. Y., Yau, E. Y. H., Gomersall, T., Wong, P. Y. H., …Bonebrake, T. C. (2022). Spraints Demonstrate Small Population Size and Reliance on Fishponds for Eurasian Otter (Lutra lutra) in Hong Kong. *Conservation Science and Practice*, *5*(1).
[12] Hui, M. K. Y., Leong, A. K. Y., Zhang, H., Yang, F., Yeung, H. Y., Lo, Y. F. P., Yang, J. H. (2024). Forgotten but not Gone: Rediscovery of Eurasian Otter Lutra lutra in Lantau, Hong Kong. *IUCN Otter Spec. Group Bull. 41(5)* 2024.

Legend

- Project Site
- 500m Assessment Area

Study Areas from Previous Studies

- CE-31/2022 Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Potential Development Area)
- CE-31/2022 Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (500m from Potential Development Area)

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Figure 3.2

Previous Studies and their Study Areas

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- Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study)[13]

TABLE 3-1 PREVIOUS STUDIES RELEVANT TO THE ASSESSMENT AREA

Study	Survey Period	Flora and Fauna Groups Surveyed
AFCD, 2007[14]	2002 – 2006	Terrestrial Mammal
Agreement No. CE 31/2022 (CE)[15]	Apr 2023 – Mar 2024	Habitat and Vegetation, Terrestrial Fauna, Avifauna, Herpetofauna, Aquatic Fauna, Firefly
McMillan et al., 2022	2018 – 2019	Mammal
Yiu, V, 2011	N/A	Firefly
HKBWS, 2024a[16]	2018	Avifauna
HKBWS, 2024b[17]	Oct 2018 – Mar 2023	Avifauna

Based on the existing ecological baseline information, one (1) flora, eight (8) mammals, ninety-four (94) avifauna, six (6) butterflies, one (1) firefly, and three (3) intertidal species of conservation importance were previously recorded within the 500m Assessment Area. The species of conservation importance with known locations are shown on ***Figure 3.3.***

3.2.1 HABITAT AND VEGETATION

Based on a review of the recent aerial photos and the habitat maps prepared for several approved EIA studies, the identified major habitats are woodland, plantation, shrubland, seasonally wet grassland, watercourse, fishpond, mangrove, village area, developed area, and mudflat/ coastal water body.

3.2.2 FLORA SPECIES OF CONSERVATION IMPORTANCE RECORDED IN PREVIOUS STUDIES

One (1) flora species of conservation importance was previously recorded within the current Assessment Area. Details of the flora species of conservation importance are shown in ***Table 3-2***.

[13] Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study)
[14] Shek, C.T., Chan, C.S.M., and Wan, Y.F. (2007) Camera Trap Survey of Hong Kong Terrestrial Mammals in 2002-06. *Hong Kong Biodiversity*, *15*, 1-11.
[15] Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study)
[16] HKBWS (2024a). Hong Kong Bird Report 2018.
[17] HKBWS (2024b).Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2018-2023.

Legend

- Project Site
- 500m Assessment Area

Species of Conservation Importance

Flora

- *Aquilaria sinensis*

Mammal

- Chinese Noctule
- Himalayan Leaf-nosed Bat
- Japanese Pipistrelle
- Least Horseshoe Bat
- Leopard Cat
- Small Indian Civet
- Core Area of OtterPopulation in Hong Kong

Avifauna

- Black-capped Kingfisher
- Chinese Hwamei
- Chinese Pond Heron
- Chinese Sparrowhawk
- Collared Crow
- Collared Scops Owl
- Common Greenshank
- Eastern Buzzard
- Great Egret
- Greater Coucal
- Little Egret
- Northern Goshawk
- Red-billed Starling
- White-throated Kingfisher
- Zitting Cisticola

Reptile

- Four-clawed Gecko

Butterfly

- Blackvein Sergeant
- Common Awl
- Common Cerulean
- Danaid Egg-fly
- Swallowtail
- Tiny Grass Blue

Firefly

- Maipo Bent-winged Firefly

Remarks:
Some species of conservation importance are not indicated in the figure due to lack of detailed information on the location within literature.

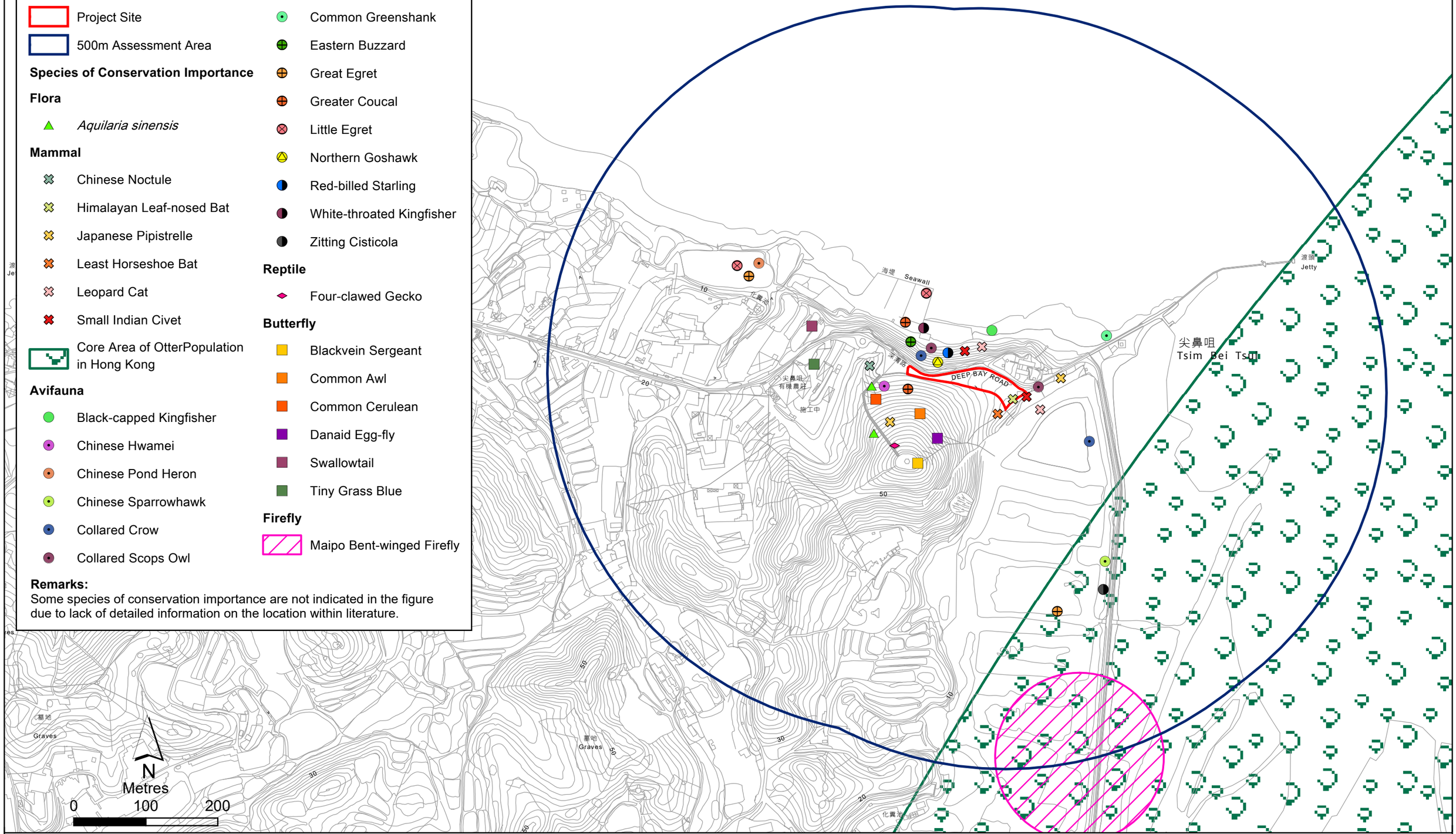

Figure 3.3

Species of Conservation Importance from Literature Review within the Study Area

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TABLE 3-2 FLORA SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation/ Protection Status	Previous Studies
Incense Tree	*Aquilaria sinensis*	土沉香	• Protected under Cap. 586 • Wild plant under State protection (category II) (AFCD, 2003) • Recorded in China Plant Red Data Book and Illustration of Rare & endangered plant in Guangdong Province (AFCD, 2003) • Category 2 & 3 (AFCD, 2003) • RLCHP: EN • IUCN(VU) • CITES(II)	Agreement No. CE 31/2022 (CE)

Notes:
Conservation Status:
- AFCD (2003) Rare and Precious Plants of Hong Kong (Online Version). Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong. Available at: https://www.herbarium.gov.hk/en/publications/books/book2/index.html. Accessed on 2 November 2023.
- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- RLCHP – Red List of China's Higher Plants (2020). EN = Endangered
- IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable
- CITES– Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna

3.2.3 FAUNA SPECIES OF CONSERVATION IMPORTANCE RECORDED IN PREVIOUS STUDIE.S

3.2.3.1 TERRESTRIAL MAMMAL

Eight (8) mammal species of conservation importance were previously recorded within the current Assessment Area. Details of the mammal species of conservation importance are shown in ***Table 3-3***.

Eurasian Otter, a species with highly restricted distribution in Hong Kong, was recorded within the Assessment Area between 2018 - 2019. According to the recent study, otter signs (i.e. spraints, tracks, scratchings, resting sites) were recorded within the wetland habitat mosaic (i.e. mangrove, mudflat/coastal waters) within the Assessment Area around Tsim Bei Tsui. Besides its presence within the Assessment Area, it can also be found in multiple localities within the Inner Deep Bay Area including Pak Nai, Mong Tseng Wai, Tin Shui Wai Channel and Fung Lok Wai[18, 19]. The indicative core area of the otter population in Hong Kong[20] is presented in ***Figure 3.3***.

[18] McMillan, S. E., Wong, A. T. C., Tang, S. S. Y., Yau, E. Y. H., Gomersall, T., Wong, P. Y. H., …Bonebrake, T. C. (2022). Spraints Demonstrate Small Population Size and Reliance on Fishponds for Eurasian Otter (Lutra lutra) in Hong Kong. *Conservation Science and Practice*, *5*(1).

[19] Hui, M. K. Y., Leong, A. K. Y., Zhang, H., Yang, F., Yeung, H. Y., Lo, Y. F. P., Yang, J. H. (2024). *Op. cit*.

[20] McMillan, S. E., Wong, A. T. C., Tang, S. S. Y., Yau, E. Y. H., Gomersall, T., Wong, P. Y. H., …Bonebrake, T. C. (2022). *Op. cit*.

TABLE 3-3 MAMMAL SPECIES OF CONSERVATION IMPORTANCE PREVIOUSLY RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation/ Protection Status	Previous Studies
Least Horseshoe Bat	*Rhinolophus pusillus*	小菊頭蝠	Cap.170; Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE)
Himalayan Leaf-nosed Bat	*Hipposideros armiger*	大蹄蝠	Cap.170; Fellowes: (LC)	Agreement No. CE 31/2022 (CE)
Chinese Noctule	*Nyctalus plancyi*	中華山蝠	Cap.170; Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE)
Japanese Pipistrelle	*Pipistrellus abramus*	東亞家蝠	Cap.170, Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE)
Eurasian Otter	*Lutra lutra*	歐亞水獺	Cap.170; Cap.586; Fellowes: RC; RLCV(EN); CSMPS(II); IUCN(NT); GSS(LD); CITES(I)	McMillan et al., 2023
Small Indian Civet	*Viverricula indica*	小靈貓	Cap.170, Cap.586, RLCV(VU), CSMPS(II), CITES(III)	AFCD, 2007 Agreement No. CE 31/2022 (CE)
Small Asian Mongoose	*Herpestes javanicus*	紅頰獴	Cap.170; RLCV(VU); CITES(III)	AFCD, 2007
Leopard Cat	*Prionailurus bengalensis*	豹貓	Cap.170; Cap.586; RLCV(VU); CITES(II)	AFCD, 2007 Agreement No. CE 31/2022 (CE)

Notes:
Conservation Status:
- Cap. 170: Protected under Wild Animals Protection Ordinance
- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- Fellowes – Fellowes et al. (2002): LC = Local Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
- RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable
- CSMPS – China State Major Protection Status: Appendix II
- CITES – Under Appendix I, II or III of Convention on International Trade in Endangered Species of Wild Fauna and Flora

3.2.3.2 AVIFAUNA

Ninety-four (94) avifauna species of conservation importance were previously recorded within the Assessment Area. Details of the avifauna species of conservation importance are shown In ***Table 3-4***.

TABLE 3-4 AVIFAUNA SPECIES OF CONSERVATION IMPORTANCE PREVIOUSLY RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Greater White-fronted Goose	*Anser albifrons*	白額雁	CSMPS(II)	HKBWS 2024b
Baikal Teal	*Sibirionetta formosa*	花臉鴨	Cap.586; CITES(II)	HKBWS 2024b
Northern Shoveler	*Spatula clypeata*	琵嘴鴨	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Falcated Duck	*Mareca falcata*	羅紋鴨	Fellowes: RC	HKBWS 2024b
Eurasian Wigeon	*Mareca penelope*	赤頸鴨	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Mallard	*Anas platyrhynchos*	綠頭鴨	Fellowes: RC	HKBWS 2024b
Northern Pintail	*Anas acuta*	針尾鴨	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Eurasian Teal	*Anas crecca*	綠翅鴨	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Tufted Duck	*Aythya fuligula*	鳳頭潛鴨	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Chinese Francolin	*Francolinus pintadeanus*	中華鷓鴣	RLCV(VU)	HKBWS, 2024a
Greater Coucal	*Centropus sinensis*	褐翅鴉鵑	CSMPS(II)	Agreement No. CE 31/2022 (CE)
Little Grebe	*Tachybaptus ruficollis*	小䴙䴘	Fellowes: LC	HKBWS 2024b
Great Crested Grebe	*Podiceps cristatus*	鳳頭䴙䴘	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black-winged Stilt	*Himantopus himantopus*	黑翅長腳鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Pied Avocet	*Recurvirostra avosetta*	反嘴鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Northern Lapwing	*Vanellus vanellus*	鳳頭麥雞	Fellowes: LC	HKBWS 2024b

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Pacific Golden Plover	*Pluvialis fulva*	太平洋金斑鴴	Fellowes: LC	HKBWS 2024b
Grey Plover	*Pluvialis squatarola*	灰斑鴴	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS, 2024a, HKBWS 2024b
Little Ringed Plover	*Charadrius dubius*	金眶鴴	Fellowes: (LC)	HKBWS 2024b
Kentish Plover	*Charadrius alexandrinus*	環頸鴴	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Lesser Sand Plover	*Charadrius mongolus*	蒙古沙鴴	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Greater Sand Plover	*Charadrius leschenaultii*	鐵嘴沙鴴	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Oriental Plover	*Charadrius veredus*	東方鴴	Fellowes: LC	HKBWS 2024b
Whimbrel	*Numenius phaeopus*	中杓鷸	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Far Eastern Curlew	*Numenius madagascariensis*	紅腰杓鷸	Fellowes: LC; RLCV(VU); IUCN(EN)	HKBWS 2024b
Eurasian Curlew	*Numenius arquata*	白腰杓鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black-tailed Godwit	*Limosa limosa*	黑尾塍鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Ruddy Turnstone	*Arenaria interpres*	翻石鷸	Fellowes: LC	HKBWS 2024b
Great Knot	*Calidris tenuirostris*	大濱鷸	Fellowes: LC; RLCV(EN); IUCN(EN)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Red Knot	*Calidris canutus*	紅腹濱鷸	Fellowes: LC; RLCV(VU)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Broad-billed Sandpiper	*Calidris falcinellus*	闊嘴鷸	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Sharp-tailed Sandpiper	*Calidris acuminata*	尖尾濱鷸	Fellowes: LC; IUCN(VU)	HKBWS 2024b
Curlew Sandpiper	*Calidris ferruginea*	彎嘴濱鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Temminck's Stint	*Calidris temminckii*	青腳濱鷸	Fellowes: LC	HKBWS 2024b
Long-toed Stint	*Calidris subminuta*	長趾濱鷸	Fellowes: LC	HKBWS 2024b
Spoon-billed Sandpiper	*Calidris pygmaea*	勺嘴鷸	Fellowes: GC; RLCV(CR); IUCN(CR)	HKBWS 2024b
Red-necked Stint	*Calidris ruficollis*	紅頸濱鷸	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Sanderling	*Calidris alba*	三趾濱鷸	Fellowes: LC	HKBWS 2024b
Dunlin	*Calidris alpina*	黑腹濱鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Little Stint	*Calidris minuta*	小濱鷸	Fellowes: LC	HKBWS 2024b
Asian Dowitcher	*Limnodromus semipalmatus*	半蹼鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Swinhoe's Snipe	*Gallinago megala*	大沙錐	Fellowes: LC	HKBWS 2024b
Terek Sandpiper	*Xenus cinereus*	翹嘴鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Grey-tailed Tattler	*Tringa brevipes*	灰尾漂鷸	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Common Redshank	*Tringa totanus*	紅腳鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Marsh Sandpiper	*Tringa stagnatilis*	澤鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Wood Sandpiper	*Tringa glareola*	林鷸	Fellowes: LC	HKBWS 2024b
Spotted Redshank	*Tringa erythropus*	鶴鷸	Fellowes: RC	HKBWS 2024b

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Common Greenshank	*Tringa nebularia*	青腳鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Nordmann's Greenshank	*Tringa guttifer*	小青腳鷸	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(EN); CITES(I)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Oriental Pratincole	*Glareola maldivarum*	普通燕鴴	Fellowes: LC	HKBWS 2024b
Black-headed Gull	*Chroicocephalus ridibundus*	紅嘴鷗	Fellowes: PRC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Saunders's Gull	*Chroicocephalus saundersi*	黑嘴鷗	Fellowes: GC; RLCV(VU); IUCN(VU)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Pallas's Gull	*Ichthyaetus ichthyaetus*	漁鷗	Fellowes: LC	HKBWS 2024b
Black-tailed Gull	*Larus crassirostris*	黑尾鷗	Fellowes: LC	HKBWS 2024b
Mew Gull	*Larus canus*	海鷗	Fellowes: LC	HKBWS 2024b
Lesser Black-backed Gull	*Larus fuscus*	烏灰銀鷗	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Caspian Tern	*Hydroprogne caspia*	紅嘴巨鷗	Fellowes: RC	HKBWS 2024b
Little Tern	*Sternula albifrons*	白額燕鷗	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Oriental Stork	*Ciconia boyciana*	東方白鸛	Fellowes: GC; RLCV(EN); IUCN(EN); CITES(I)	HKBWS 2024b
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	Fellowes: PRC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Eurasian Spoonbill	*Platalea leucorodia*	白琵鷺	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black-faced Spoonbill	*Platalea minor*	黑臉琵鷺	Fellowes: PGC; RLCV(EN); CSMPS(II); IUCN(EN)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Yellow Bittern	*Ixobrychus sinensis*	黃葦鳽	Fellowes: (LC)	HKBWS 2024b

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Black-crowned Night Heron	*Nycticorax nycticorax*	夜鷺	Fellowes: (LC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Striated Heron	*Butorides striata*	綠鷺	Fellowes: (LC)	HKBWS 2024b
Chinese Pond Heron	*Ardeola bacchus*	池鷺	Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	Fellowes: (LC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Grey Heron	*Ardea cinerea*	蒼鷺	Fellowes: PRC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Great Egret	*Ardea alba*	大白鷺	Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Intermediate Egret	*Ardea intermedia*	中白鷺	Fellowes: RC	HKBWS 2024b
Little Egret	*Egretta garzetta*	小白鷺	Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Chinese Egret	*Egretta eulophotes*	黃嘴白鷺	Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(VU)	HKBWS 2024b
Western Osprey	*Pandion haliaetus*	鶚	Cap.586; Fellowes: RC; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	Cap.586; Fellowes: (LC); CSMPS(II); CITES(II)	HKBWS 2024b
Greater Spotted Eagle	*Clanga clanga*	烏鵰	Cap.586, Fellowes: GC, RLCV(EN), CSMPS(II), IUCN(VU), CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Eastern Imperial Eagle	*Aquila heliaca*	白肩鵰	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(I); IUCN(VU); CITES(I)	HKBWS 2024b
Chinese Sparrowhawk	*Accipiter soloensis*	赤腹鷹	Cap.586; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE)
Besra	*Accipiter virgatus*	松雀鷹	Cap.586; CSMPS(II); CITES(II)	HKBWS 2024b
Northern Goshawk	*Accipiter gentilis*	蒼鷹	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE)

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Eastern Marsh Harrier	*Circus spilonotus*	白腹鷐	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black Kite	*Milvus migrans*	黑鳶	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
White-bellied Sea Eagle	*Haliaeetus leucogaster*	白腹海鵰	Cap.586; Fellowes: (RC); RLCV(VU); CSMPS(I); CITES(II)	HKBWS 2024b
Eastern Buzzard	*Buteo japonicus*	普通鵟	Cap.586; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Collared Scops Owl	*Otus lettia*	領角鴞	Cap.586; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE)
White-throated Kingfisher	*Halcyon smyrnensis*	白胸翡翠	Fellowes: (LC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black-capped Kingfisher	*Halcyon pileata*	藍翡翠	Fellowes: LC; IUCN(VU)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Pied Kingfisher	*Ceryle rudis*	斑魚狗	Fellowes: (LC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Peregrine Falcon	*Falco peregrinus*	遊隼	Cap.586; Fellowes: (LC); CSMPS(II); CITES(I)	HKBWS 2024b
Collared Crow	*Corvus torquatus*	白頸鴉	Fellowes: LC, RLCV(NT), IUCN(VU)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Zitting cisticola	*Cisticola juncidis*	棕扇尾鶯	Fellowes: LC	Agreement No. CE 31/2022 (CE)
Chinese Hwamei	*Garrulax canorus*	畫眉	Cap.586; CITES(II)	Agreement No. CE 31/2022 (CE)
Red-billed Starling	*Spodiopsar sericeus*	絲光椋鳥	Fellowes: GC	Agreement No. CE 31/2022 (CE), HKBWS 2024a, HKBWS 2024b
White-cheeked Starling	*Spodiospar cineraceus*	灰椋鳥	Fellowes: PRC	HKBWS, 2024a

Notes:
Conservation Status:

- Cap. 170: Protected under Wild Animals Protection Ordinance, all birds in Hong Kong are protected under Cap. 170

- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- Fellowes – Fellowes et al. (2002): PGC = Potential Global Concern, GC = Global Concern, PRC = Potential Regional Concern, RC = Regional Concern, LC = Local Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
- RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable, EN = Endangered.
- CSMPS – China State Major Protection Status: Appendix II
- IUCN: International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable, EN = Endangered
- CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna

3.2.3.3 HERPETOFAUNA

No herpetofauna species of conservation importance were previously recorded within the Assessment Area.

3.2.3.4 BUTTERFLY AND ODONATE

Six (6) butterfly species of conservation importance were previously recorded within the Assessment Area. Their protection and/or conservation status are presented in ***Table 3-5***. No odonate species of conservation importance was previously recorded within the Assessment Area.

TABLE 3-5 BUTTERFLY AND ODONATE SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation/ Protection Status	Previous Studies
Common Awl	*Hasora badra*	三斑趾弄蝶	Fellowes: LC, AFCD: Very Rare	Agreement No. CE 31/2022 (CE)
Common Cerulean	*Jamides celeno*	錫冷雅灰蝶	AFCD: Rare	Agreement No. CE 31/2022 (CE)
Tiny Grass Blue	*Zizula hylax*	長腹灰蝶	AFCD: Very Rare (Species of Conservation Concern)	Agreement No. CE 31/2022 (CE)
Black-vein Sergeant	*Athyma ranga*	離斑帶蛺蝶	Fellowes: LC	Agreement No. CE 31/2022 (CE)
Danaid Egg-fly	*Hypolimnas misippus*	金斑蛺蝶	Fellowes: LC	Agreement No. CE 31/2022 (CE)
Swallowtail	*Papilio xuthus*	柑橘鳳蝶	AFCD: Rare	Agreement No. CE 31/2022 (CE)

Note:
Distribution in Hong Kong:
- Chan, A., Cheung, J., Sze, P., Wong, A., Wong, E. and Yau, E. (2011). A Review of the Local Restrictedness of Hong Kong Butterflies. *Hong Kong Biodiversity 21*: 1-12.

Conservation Status:
- Cap. 170: Protected under Wild Animals Protection Ordinance
- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- International Union for Conservation of Nature Green Status of Species (2023). MD = Moderately Depleted
- CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna

3.2.3.5 FRESHWATER AQUATIC ASSEMBLAGES

No freshwater invertebrate species of conservation importance were previously recorded within the Assessment Area.

3.2.3.6 FIREFLIES

Pteroptyx maipo was first recorded in Hong Kong Wetland Park in 2009[21] with a geographical extent from Hong Kong to mainland China[22], particularly within and nearby Mai Po Inner Deep Bay area, western Guangdong, and Hainan[23]. According to AFCD[24], *Pteroptyx maipo* is the only species that depends on mangrove ecosystems in Hong Kong. While the larvae feed on snails found on the tidal mudflats, the adults inhabit short vegetation in the vicinity. This species is found in various locations in Hong Kong, including the Mai Po Nature Reserve, Tin Shui Wai, near Tsim Bei Tsui, Hong Kong Wetland Park, Sheung Pak Nai, and at the mangrove around outlet of Kam Tin River near Nam Sang Wai[25]. The adult flight period of the *Pteroptyx maipo* is between March and October. During the adult flight period of *Pteroptyx maipo* (March–October), adults were generally observed to become active 20 minutes after sunset. Flashing males were most active during the first hour after sunset, often flying up from the mangrove vegetation. Around three hours after sunset, individuals would mostly settle on nearby vegetation, at which point the flashing activity largely ceased[26, 27]. *Pteroptyx maipo* was recorded within the Assessment Area near Tsim Bei Tsui in which their distribution is mainly within mangrove ecosystems and their fringes.

TABLE 3-6 FIREFLY SPECIES OF CONSERVATION IMPORTANCE RECORDED FROM PREVIOUS STUDIES

Common Name	Scientific Name	Chinese Name	Conservation/Protection Status	Previous Studies
-	*Pteroptyx maipo*	米埔屈翅螢	IUCN (EN)	Yiu, V. (2011, 2017), Ballantyne et. al., 2011

Notes:
- IUCN: International Union for Conservation of Nature Red List of Threatened Species (2024). EN = Endangered

[21] Biodiversity Information Hub. (n.d.). *Pteroptyx maipo*. Accessed on 18 February 2025. Retrieve from https://bih.gov.hk/en/fast-facts/species-named-after-hong-kong/index-id-23.html
[22] Yip, A. & Yiu, V. 2023. Pteroptyx maipo. The IUCN Red List of Threatened Species. Accessed on 18 February 2025. Retrieve from https://www.iucnredlist.org/species/214613742/214613992#assessment-information
[23] Biodiversity Information Hub. (n.d.). *Pteroptyx maipo*. Accessed on 18 February 2025. Retrieve from https://bih.gov.hk/en/fast-facts/species-named-after-hong-kong/index-id-23.html
[24] Cheng *et al.* 2020. Habitat Characteristics of Fireflies in Hong Kong. AFCD Newsletter Issue No. 26.
[25] Yiu, V. 2011. Op. cit.
[26] Yiu, V. 2011. Op. cit.
[27] Ballantyne et. al. (2011). Op. cit.

3.2.3.7 INTERTIDAL COMMUNITIES

Nursery grounds for two horseshoe crab species namely, *Carcinoscorpius rotundicauda* and *Tachypleus tridentatus* were identified in mudflats at Tsim Bei Tsui[28]. A seagrass species of conservation importance, namely *Halophila beccari,* was also recorded within the mudflats of Tsim Bei Tsui in a study[29]. Detailed conservation status of the horseshoe crab and seagrass recorded within the Assessment Area is presented in ***Table 3-7***.

TABLE 3-7 INTERTIDAL SPECIES OF CONSERVATION IMPORTANCE RECORDED FROM PREVIOUS STUDIES

Common Name	Scientific Name	Chinese Name	Conservation/ Protection Status	Previous Studies
Horseshoe Crab				
Horseshoe crab	*Carcinoscorpius rotundicauda*	圓尾鱟	• Grade II National Key Protected Species	Kwan (2016)[30]
Horseshoe crab	*Tachypleus tridentatus*	中華鱟	• Grade II National Key Protected Species • IUCN (EN)	Kwan (2016)[31]
Seagrass				
Beccari's Halophila	*Halophila beccarii*	貝克喜鹽草	• RLCHP: VU	Yip and Lai. (2006)[32]

Notes:
Conservation Status:
- RLCHP – Red List of China's Higher Plants (2020). VU = Vulnerable
- IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). EN = Endangered

3.2.4 EVALUATION & IDENTIFICATION OF INFORMATION GAP

With reference to the reviewed data, it is considered that the Project Site and its vicinity have been well covered for certain taxa groups (i.e. terrestrial mammal, avifauna and fireflies) and studied comprehensively in previous studies, especially in the Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study).

To fill in the identified information gaps especially within the Project Site, an ecological survey of a duration of 12 months was conducted to verify and update the latest ecological conditions

[28] Kwan, V. 2016. Present population and habitat status of potentially threatened Asian horseshoe crabs *Tachypleus tridentatus* and *Carcinoscorpius rotundicauda* in Hong Kong: a proposal for marine protected areas.
[29] Yip, K L and Lai, C C. (2006). *Halophila minor* (Hydrocharitaceae), a new record with taxonomic notes of the *Halophila* from the Hong Kong Special Administrative Region, China. *Journal of Systematics and Evolution*, 44(4), 457.
[30] Kwan, V. 2016. *Op. cit.*
[31] Kwan, V. 2016. *Op. cit.*
[32] Yip, K L and Lai, C C. (2006). *Op. cit.*

of the habitats in the Assessment Area. The methodology for the ecological survey is presented in ***Section 4***.

4. ECOLOGICAL SURVEY METHODOLOGY

4.1 ECOLOGICAL BASELINE SURVEYS AND SURVEY SCHEDULE

The 12-month ecological survey was undertaken between November 2023 and October 2024 as presented in ***Table 4-1***, covering dry and wet seasons.. The key surveyors involved in this survey is presented in ***Table 4-2*** below.

TABLE 4-1 ECOLOGICAL SURVEY PROGRAMME

Survey Type	Survey Frequency	Survey time
Habitat and Vegetation	Half-yearly Once in dry season in December 2023 and once in wet season in June 2024	Daytime
Terrestrial Mammal	Monthly between November 2023 to October 2024	Daytime for diurnal species. Night-time for nocturnal species. Dusk for bats.
Avifauna	Monthly between November 2023 to October 2024	Early morning and dusk. Night-time for nocturnal species.
Herpetofauna	Monthly between November 2023 to October 2024	Daytime for diurnal species. Night-time for nocturnal species.
Butterfly and Odonate	Monthly between November 2023 to October 2024	Daytime
Fireflies	Monthly between November 2023 to October 2024	Dusk and night-time
Freshwater Community	Every two months; conducted in November 2023, January, March, May, July and September 2024	Daytime for diurnal species. Night-time for nocturnal species.
Intertidal Survey	Once in wet season in July 2024; once in dry season in January 2024; each survey separated by half-yearly interval	Ebbing tides

TABLE 4-2 KEY SURVEYORS INVOLVED IN THE ECOLOGICAL BASELINE SURVEY

Faunal/Floral Group under Study	Key Surveyor		
	Full Name	Relevant Experience	Year of Experience
Terrestrial Ecological Surveys			
Habitat and Vegetation, Terrestrial Mammal, Avifauna, Herpetofauna, Butterfly and Odonate, Aquatic Fauna	Mr. Mike Pang	Over 8 years of experiences in conducting a wide range of ecological surveys and impact assessment for main	8

Faunal/Floral Group under Study	Key Surveyor		
	Full Name	Relevant Experience	Year of Experience
		fauna groups and habitats	
	Mr. Yuihong Chiu	Over 4 years of experience in conducting ecological surveys for flora and fauna in different natural habitats for impact assessments and experience as an eco-tour guide	4
Marine Ecological Surveys			
Intertidal Communities	Mr. Raymond Chow	Over 11 years' post-qualification experience in biodiversity, marine ecology and fisheries studies	11

4.2 HABITAT & VEGETATION SURVEY

The preliminary maps showing habitats within the Assessment Area were prepared from satellite images and latest aerial photographs. Representative areas of each habitat type within the Assessment Area were then ground-truthed on foot, in order to ensure the habitat maps reflect current conditions and to distinguish between habitats that cannot always be reliably distinguished from satellite images. Habitats were characterized and defined with reference to size, vegetation type, flora species present, dominant species, species diversity and abundance, community structure, seasonality, and inter-dependence, as well as the presence of any feature of ecological importance. Representative color photos are taken for each habitat type and any important ecological features identified.

Habitat map of suitable scale (1:1000 to 1:5000) was prepared to show the types and locations of identified habitats within the Assessment Area in ***Figure 5.1***.

In parallel with the habitat mapping survey, the vegetation specialist recorded the flora species encountered, with the relative abundance of plant species in each habitat to be recorded. Special attention was paid to species that are rare, protected or of ecological importance. The location of any flora species of conservation importance found were recorded with handheld GPS with photographic records where possible. Habitat and vegetation survey were conducted during daytime at half-yearly interval covering dry and wet seasons.

4.3 WILDLFE SURVEY

4.3.1 TERRESTRIAL MAMMALS

Mammals survey have been carried out monthly through transects, as well as in areas that may be potentially utilized by terrestrial mammals during day, dusk and nighttime. As mammals (e.g. leopard cats) usually occur at low densities, in addition to direct observation, any signs of mammal activities, such as tracks, scats or burrows will be actively sought. Deployment of camera traps were in place, where secure and appropriate.

The mammal survey recorded bat species by direct observation and with a bat detector. All calls recorded were analyzed to permit, as far as possible, identification of species from call structure. In addition, particular attention was paid to possible bat roost sites to determine whether there are bats roosting/ breeding in the area.

4.3.2 AVIFAUNA

The presence and abundance of avifauna species at various habitats were recorded visually and aurally. The avifauna were surveyed monthly using transect method at the proposed survey extent (***Figure 4.1***) subject to the current site condition. Avifauna surveys (including day and night-time surveys) were carried out. Daytime avifauna surveys were carried out in the early morning at the period of peak bird activity. Night surveys were conducted nearly evening to record nocturnal avifauna. The location(s) of any avifauna species of conservation importance encountered were recorded, along with notable behavior (e.g. breeding behavior such as nesting and presence of recently fledged juveniles, roosting and feeding activities) and their major flightline as appropriate. All birds seen within 10m from either side of the survey transect were identified and counted.

Legend

- Freshwater Sampling Point
- Intertidal Survey Location
- Camera Trap Location
- Proposed Survey Transect
- Project Site
- 500m Assessment Area
- Hydrographic Features

南沙莆
Nam Sha Po

DEEP BAY ROAD

海堤 Seawall

化糞池

尖鼻咀
Tsim Bei Tsui

渡頭
Jetty

尖鼻咀
有機農莊

施工中

墓地
Graves

N
Metres
0 100 200

Figure 4.1

Survey Transect and Sampling Points

ERM

File: T:\GIS\CONTRACT\0712335\mxd\0712335_Survey_Transect.mxd
Date: 18/3/2025

Legend

- Project Site
- 500m Assessment Area

Species of Conservation Importance

Flora

- *Aquilaria sinensis*

Mammal

- Japanese Pipistrelle
- Leopard Cat
- Small Indian Civet

Avifauna

- Black-capped Kingfisher
- Chinese Pond Heron
- Collared Crow
- Collared Scops Owl
- Common Greenshank
- Eastern Buzzard
- Great Egret
- Greater Coucal
- Grey Heron
- Little Egret
- Northern Goshawk
- Red-billed Starling
- Styan's Grasshopper Warbler
- White-throated Kingfisher

Odonate

- Coastal Glider
- Mangrove Skimmer

Firefly

- Maipo Bent-winged Firefly

Habitat

- Woodland (Young)
- Plantation
- Shrubland
- Seasonally Wet Grassland
- Mangrove
- Village Area
- Developed Area
- Mudflat/ Coastal Water Body
- Semi-natural Watercourse
- Channelized Watercourse
- Fish Pond

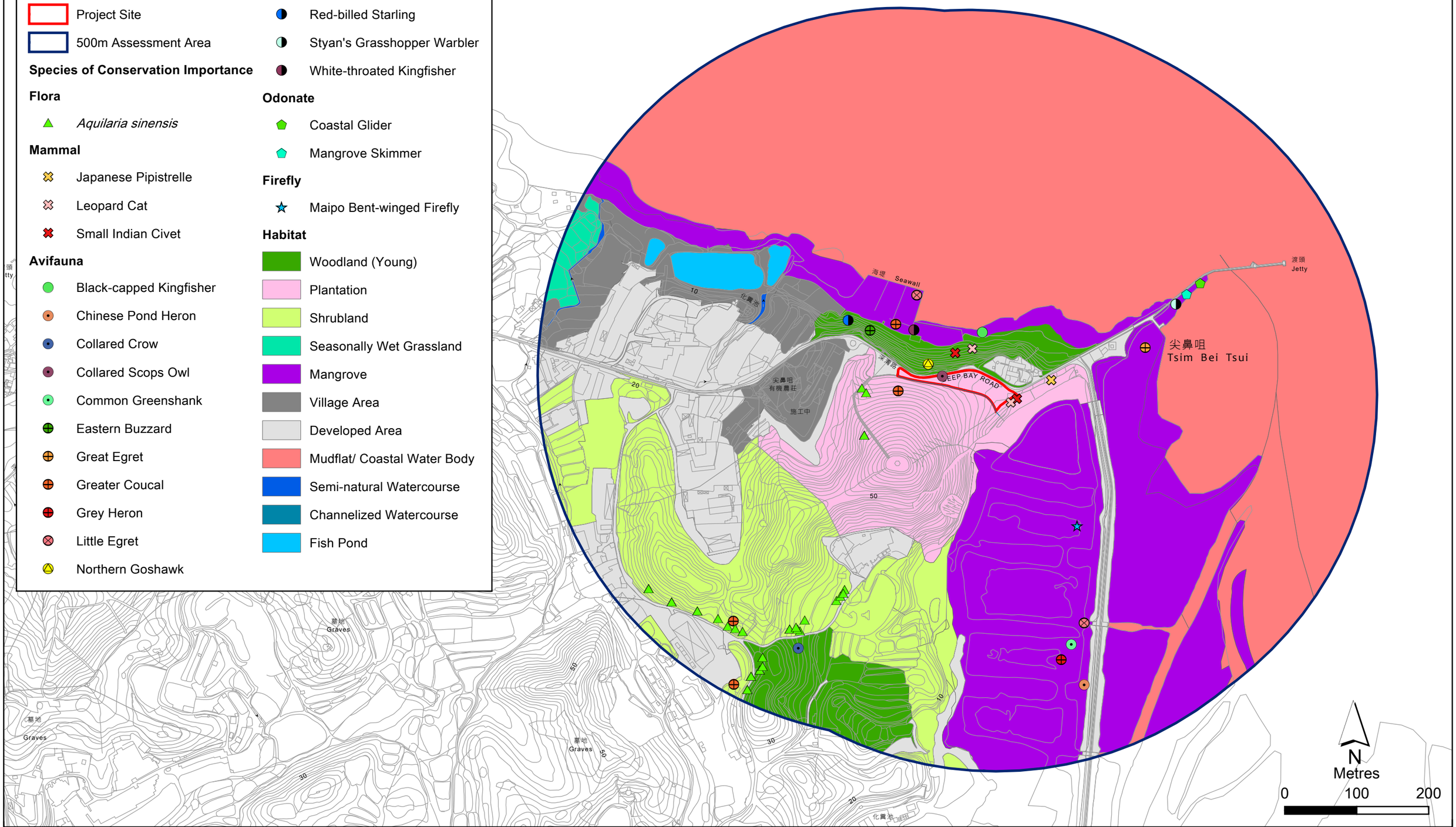

Figure 5.1

Habitat Map and Indicative Location of Species of Conservation Importance Recorded

ERM

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Date: 10/1/2025

Signs of breeding (e.g. nests, recently fledged juveniles) and roosting were also recorded, if any. Observations were made using binoculars (at least 8x) and photographic records has been taken, if possible. Bird species encountered outside transects but within the Assessment Area were recorded to produce a complete bird species list.

4.3.3 HERPETOFAUNA

Herpetofauna surveys were conducted monthly through direct observation and active searching, along survey transects and in potential hiding places such as among leaf litter, inside holes and under stones and logs within the Assessment Area. Daytime and night-time surveys were performed for diurnal species and nocturnal species. Auditory detection of species-specific calls were used to survey frogs and toads. During the surveys, all reptiles and amphibians sighted and heard were recorded.

4.3.4 BUTTERFLY AND ODONATE

Butterflies and odonates were surveyed monthly following the proposed transects during day time. All butterflies and odonates seen within 30m of each transect were counted and identified to species level where possible. Any butterflies and odonates encountered outside the transects were identified and counted in order to produce a complete species list. Particular attention was paid to food/ host plants for butterfly larvae and favored habitats for both groups, such as shrubland for butterflies and streams for odonates (both adults and larvae). The specimens were photographed and released immediately at the site of capture. Permission from AFCD was sought for the use of hand nets or any applications to capture animals in the surveys.

4.3.5 FIREFLY

Surveys for fireflies were conducted monthly through direct observation along the transects, with focus on the potential habitats such as mangrove and watercourses utilized by firefly. Surveys were commence immediately after sunset and last for approximately 2 hours. Surveys were conducted monthly throughout the year. All fireflies observed, including adults and larvae, were quantified and identified to species level as far as possible. It is noted that the adult flight period for *Pteroptyx maipo* is between March and October, particular attention was made to confirm records for said species during this time period [33, 34].

4.3.6 FRESHWATER COMMUNITY

Sizable streams and notable water bodies (e.g. ponds) were surveyed for aquatic fauna including freshwater/ brackish fish, invertebrates and macroinvertebrates. Aquatic surveys were performed every two months covering daytime for diurnal species and night-time for nocturnal species. The aquatic fauna survey was conducted through direct observation, active searching by hand nets and standard field sampling techniques, such as kick sampling using a D-framed net and trapping using fish traps where necessary at each Freshwater Sampling Point

[33] Yiu V (2020). Hong Kong Firefly Species. Accessed from <http://fireflies.hk/species/species/P_maipo.html>
[34] AFCD (2022). Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/fast-facts/species-named-after-hong-kong/index-id-23.html>

(***Figure 4.1***). Potential hiding places such as boulders and logs within the watercourse were turned over to locate any aquatic animals beneath. Permit from AFCD was attained before use of nets and traps to collect freshwater fauna in streams.

4.3.7 INTERTIDAL SURVEY

Surveys on intertidal communities was conducted at half-yearly interval covering wet and dry seasons (conducted in Jan 2024 and Jul 2024) at the selected Intertidal Survey Location (as indicated in ***Figure 4.1***), to establish an ecological profile of intertidal habitats within the Assessment Area.

The surveys were conducted during ebbing tide reaching tidal levels of <1.0 mCD. At the survey location, a qualitative or walk-through survey was conducted to identify species of intertidal flora and fauna and associated relative abundance. Direct observation and active searching were the major survey method. The effort spent in qualitative or walk-through survey, such as the number of surveyors involved, and the time spent were recorded and provided as appropriate. Representative photographs of intertidal habitat and flora / fauna species identified were taken. During active searching, particular attention was paid to potential habitats supporting horseshoe crab such as mangrove and mudflat.

5. SURVEY FINDINGS

5.1 HABITAT AND VEGETATION

Based on a review of the recent aerial photos and ground-truthing during the baseline survey, the identified major habitats are woodland (young), plantation, shrubland, seasonally wet grassland, watercourse, fishpond, mangrove, village area, developed area, and mudflat/ coastal water body (See ***Figure 5.1***). Photographic records of each habitat are presented in ***Annex 1***. Raw data of plant species recorded are presented in ***Annex 2***.

Among the identified habitats, mudflat/coastal water body and mangrove are dominant within the Assessment Area. Plantation is the only habitat recorded within the Project Site. Due to close vicinity to village area and developed area, habitats within Assessment Area are mostly isolated and subjected to some degree of human interference. Natural habitats such as woodland and shrubland are mainly present at the southwestern part of the Assessment Area.

TABLE 5-1 AREA OF EACH HABITAT IDENTIFIED IN THE ASSESSMENT AREA

Habitat	Approximate Size within Project Site (ha)	Approximate Size within Assessment Area (ha)	% of Assessment Area
Woodland (Young)	-	3.97	4.09%
Plantation	0.31	6.06	6.24%
Shrubland	-	10.42	10.73%
Seasonally Wet Grassland	-	0.53	0.54%
Semi-natural Watercourse	-	834 m (length)	-
Channelized Watercourse	-	150 m (length)	-
Fishpond	-	0.77	0.79%
Mangrove	-	18.61	19.15%
Village Area	-	3.92	4.04%
Developed Area	-	10.85	11.17%
Mudflat/Coastal Water Body	-	42.02	43.24%
Total	0.31	97.16	100%

5.1.1 WOODLAND (YOUNG)

Woodland (Young) within the Assessment Area is surrounded by village area, mangrove, and by the developed area which is closely linked to the plantation area where the Project Site sits. Approximately 3.97 ha of woodland was identified within the Assessment Area, accounting for ~4.09% of the Assessment Area. In general, two (2) isolated patches of woodland are present in the Assessment Area where one is observed across the developed area to the north side of the Project Site while another patch is located to the southern side of the Assessment Area.

The woodland patches present within the Assessment Area are all relatively young, this habitat has a semi-closed canopy and mainly consists of native tree species commonly found in rural areas. Tree species include *Celtis sinensis*, *Mallotus paniculatus*, and *Sterculia lanceolata*. The mid-storey of this habitat mainly consists of native tree and shrub species (e.g., *Aporosa dioica*, *Litsea rotundifolia var. oblongifolia*, *Macaranga tanarius var. tomentosa* and *Schefflera heptaphylla*) and the understory occupied by shrubs and climbers including *Desmos chinensis* and *Psychotria asiatica*, it is also occupied by common herbs and ferns such as *Dianella ensifolia*, and *Lindsaea ensifolia*.

A total of 78 flora species were recorded in this habitat. One (1) flora species of conservation importance, namely *Aquilaria sinensis,* was identified within the woodland area.

5.1.2 PLANTATION

Plantation within the Assessment Area is an isolated patch of land which fully covers the Project Site, suggesting a total of approximately 0.31 ha of plantation area within the Project Site. A total of approximately 6.06 ha of plantation was identified within the Assessment Area, accounting for ~6.24% of the Assessment Area.

Plants present within the habitat mainly consist of exotic species commonly used for landscaping. Common tree species recorded include *Acacia confusa*, *Casuarina equisetifolia* and *Melaleuca cajuputi cumingiana*.

A total of 63 flora species were recorded in this habitat. One (1) flora species of conservation importance, namely *Aquilaria sinensis,* was identified within the plantation area.

5.1.3 SHRUBLAND

Shrubland within the Assessment Area are primarily located in the southwest side, surrounding by various habitat types, including developed area, village area, plantation, mangrove, and woodland. Approximately 10.42 ha of shrubland was identified within the Assessment Area, accounting for ~10.73% of the Assessment Area.

This habitat consists of a mix of shrubs and small trees with plant heights usually being under 2m. Dominant shrub species include native species such as *Baeckea frutescens*, and *Croton crassifolius*, while some climbers were also recorded in high abundance such as *Cansjera rheedii*. *Polyspora axillaris* is a dominant tree species within the habitat,

while occasional tree species such as *Bridelia tomentosa*, *Rhus succedanea* and *Sapium discolor* are also sparsely distributed within the habitat. The dominant fern species covering hillside shrubland areas is *Dicranopteris pedata*.

A total of 66 flora species were recorded in this habitat. One (1) flora species of conservation importance, *Aquilaria sinensis,* was identified within the Assessment Area.

5.1.4 SEASONALLY WET GRASSLAND

Seasonally wet grassland within the Assessment Area is surrounded mainly by the village area and watercourse. Approximately 0.53 ha of seasonally wet grassland was identified within the Assessment Area, accounting for ~0.54% of the Assessment Area.

These habitats mainly developed from abandoned fishponds or potentially from abandoned wet agricultural land through natural succession. While aquatic plants such as *Callitriche palustris L. var. elegans*, *Coix lacryma-jobi* and *Commelina benghalensis* are present in these habitats. Due to the seasonal nature of the wet grassland, it is more likely to be overgrown and invaded by exotic weeds such as *Bidens alba*, *Ipomoea cairica* and *Mikania micrantha*.

A total of 28 flora species were recorded in this habitat. No species of conservation importance was observed within this habitat type.

5.1.5 WATERCOURSE

Watercourses within the Assessment Area covers two semi-natural watercourses and one channelized watercourse. One stream is located by the seasonally wet grassland on western side of the Assessment Area, another stream is located in between the village area adjacent to ponds, and a channelized watercourse is located at the southern edge of the Project Site. The total length of channelized watercourse and semi-natural watercourse are 150m and 834m, respectively.

A total of 10 flora species were recorded in semi-natural watercourse, while no flora species were recorded in the channelized watercourse. No flora species of conservation importance was observed within the habitat type.

5.1.6 FISHPOND

Three (3) fishponds are present within the Assessment Area. Approximately 0.77ha of fishpond was identified within the Assessment Area, accounting for ~0.79% of the Assessment Area.

A total of 9 flora species were recorded in this habitat. No flora species of conservation importance were recorded within this habitat.

5.1.7 MANGROVE

Mangrove's coverage in the Assessment Area is approximately 18.61 ha, which accounts for ~19.15% of the Assessment Area. Mangroves are generally located adjacent to mudflat/coastal water body. The vegetation structure of the mangroves within the Assessment Area are generally formed by the settlement of several species of mangrove

and mangrove associate, including *Kandelia obovata*, *Acanthus ilicifolius*, and *Hibiscus tiliaceus*. Exotic mangroves *Sonneratia caseolaris* are also scattered in the habitat.

A total of 14 flora species were recorded in this habitat. No flora species of conservation importance were observed within the habitat.

5.1.8 VILLAGE AREA

Village area within the Assessment Area is primarily present in northwestern side of Assessment Area, with a few parts dislinked by developed area and watercourses. Approximately 3.92 ha of village area was identified within the Assessment Area, accounting for ~4.04% of the Assessment Area.

Flora species recorded in this habitat are mainly ornamental or orchard species cultivated by villagers for gardening purposes. A total of 47 flora species were recorded in this habitat. Cultivated ornamental plants and fruit trees include *Bougainvillea spectabilis*, *Dimocarpus longan* and *Litchi chinensis*. Other cultivated plants included *Celtis sinensis*. Some common invasive herbaceous weeds such as *Bidens alba* and *Euphorbia hirta* were also identified along the village edge. No flora species of conservation importance were observed within the habitat.

5.1.9 DEVELOPED AREA

Developed area within the Assessment Area is approximately 10.85ha of village area was identified within the Assessment Area, accounting for ~11.17% of the Assessment Area. They mainly consist of brownfield sites occupied by storage facilities, scrapyards, livestock farms and waste grounds. This habitat is degraded in nature as a result of intensive human disturbance. Plants recorded in this habitat were mainly ornamental species such as *Bougainvillea spectabilis* and *Hibiscus rosa-sinensis*. Other self-colonised ruderal species include *Lantana camara*, *Leucaena leucocephala*, *Bidens alba* and *Wedelia trilobata*.

A total of 41 flora species were recorded in this habitat. No flora species of conservation importance were observed within the village area.

5.1.10 MUDFLAT/COASTAL WATER BODY

Extensive swathes of mudflat/coastal water body habitats are found along the coastal areas of the Assessment Area. The intertidal mudflats in the Assessment Area are functionally connected to the Inner Deep Bay Ramsar Site. Mudflat/Coastal Water Body within the Assessment Area is approximately 42.02 ha and accounts for ~ 43.24% of the Assessment Area.

A total of 5 flora species were recorded in this habitat. No flora species of conservation importance was recorded within mudflat/coastal water body.

5.2 FAUNA SPECIES OF CONSERVATION IMPORTANCE

Wildlife recorded during the ecological surveys are presented below. The photos of the recorded species of conservation importance are presented in ***Annex 3***. Full list of fauna

species recorded during the ecological surveys for the Project are presented in ***Annex 4 – 10***. The locations of species of conservation importance in the Assessment Area are shown in ***Figure 5.1***.

5.2.1 TERRESTRIAL MAMMALS

The surveys identified six (6) mammal species within the Assessment Area. A total of three (3) mammal species of conservation importance, namely Japanese Pipistrelle, Small Indian Civet and Leopard Cat, were recorded within the Assessment Area. Small Indian Civet and Leopard Cat were recorded along the edge of the Project Site, mammal tracks are also present within the area, suggesting potential usage across the Project Site. The list of mammal species recorded is provided in ***Annex 4***. Details of the terrestrial mammal species of conservation importance are shown in ***Table 5-2***.

TABLE 5-2 TERRESTRIAL MAMMAL SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Terrestrial Mammal				
Japanese Pipistrelle	*Pipistrellus abramus*	東亞家蝠	Cap.170	Plantation
Small Indian Civet	*Viverricula indica*	小靈貓	Cap.170; RLCV(VU); CSMPS(II); CITES(III)	Woodland (Young), Plantation
Leopard Cat	*Prionailurus bengalensis*	豹貓	Cap.170; Cap.586; RLCV(VU); CITES(II)	Woodland (Young), Plantation

Note:
Conservation Status:
- Cap. 170: Protected under Wild Animals Protection Ordinance
- Fellowes – Fellowes et al. (2002): PRC = Potential Regional Concern, RC = Regional Concern, LC = Local Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
- RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable
- CITES – Under Appendix (II) of Convention on International Trade in Endangered Species of Wild Flora and Fauna

5.2.2 AVIFAUNA

The surveys identified one hundred and four (104) avifauna species within the Assessment Area. A total of sixty-two (62) avifauna species of conservation importance was recorded within the Assessment Area and are presented below in ***Table 5-3***. A species of conservation importance, Collared Scops Owl, was once spotted nesting within the Project Site in April 2024, as shown in ***Figure 5.1*** and ***Annex 3***, however, the nesting site was subsequently identified to be no longer active since May 2024.

It should be noted that some avifauna species recorded in-flight are in high mobility and avifauna species recorded at mudflat/coastal water body habitat around Tsim Bei Tsui are in high diversity and abundance, locating these species on map is infeasible and not representative. Thus, avifauna species of conservation importance recorded in the aforementioned habitats and in-flight are not shown on habitat map but listed under ***Table 5-3*** and ***Annex 5***. No major flightlines were observed during the survey between November 2023 and October 2024. The list of avifauna species recorded is provided in ***Annex 5***.

TABLE 5-3 AVIFAUNA SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Avifauna				
Northern Shoveler	*Spatula clypeata*	琵嘴鴨	Fellowes: RC	Mudflat/Coastal Water Body
Eurasian Wigeon	*Mareca penelope*	赤頸鴨	Fellowes: RC	Mudflat/Coastal Water Body
Northern Pintail	*Anas acuta*	針尾鴨	Fellowes: RC	Mudflat/Coastal Water Body
Eurasian Teal	*Anas crecca*	綠翅鴨	Fellowes: RC	Mudflat/Coastal Water Body
Tufted Duck	*Aythya fuligula*	鳳頭潛鴨	Fellowes: LC	Mudflat/Coastal Water Body
Red-breasted Merganser	*Mergus serrator*	紅胸秋沙鴨	Fellowes: LC	Mudflat/Coastal Water Body
Greater Coucal	*Centropus sinensis*	褐翅鴉鵑	CSMPS(II)	Plantation, Shrubland, Mangrove
Great Crested Grebe	*Podiceps cristatus*	鳳頭鸊鷉	Fellowes: RC	Mudflat/Coastal Water Body
Black-winged Stilt	*Himantopus himantopus*	黑翅長腳鷸	Fellowes: RC	Mudflat/Coastal Water Body
Pied Avocet	*Recurvirostra avosetta*	反嘴鷸	Fellowes: RC	Mudflat/Coastal Water Body
Pacific Golden Plover	*Pluvialis fulva*	太平洋金斑鴴	Fellowes: LC	Mudflat/Coastal Water Body
Grey Plover	*Pluvialis squatarola*	灰斑鴴	Fellowes: RC	Mudflat/Coastal Water Body
Kentish Plover	*Charadrius alexandrinus*	環頸鴴	Fellowes: RC	Mudflat/Coastal Water Body
Lesser Sand Plover	*Charadrius mongolus*	蒙古沙鴴	Fellowes: LC	Mudflat/Coastal Water Body
Greater Sand Plover	*Charadrius leschenaultii*	鐵嘴沙鴴	Fellowes: RC	Mudflat/Coastal Water Body

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Whimbrel	*Numenius phaeopus*	中杓鷸	Fellowes: LC	Mudflat/Coastal Water Body
Eurasian Curlew	*Numenius arquata*	白腰杓鷸	Fellowes: RC	Mudflat/Coastal Water Body
Bar-tailed Godwit	*Limosa lapponica*	斑尾塍鷸	Fellowes: LC	Mudflat/Coastal Water Body
Black-tailed Godwit	*Limosa limosa*	黑尾塍鷸	Fellowes: RC	Mudflat/Coastal Water Body
Great Knot	*Calidris tenuirostris*	大濱鷸	Fellowes: LC; RLCV(EN); IUCN(EN)	Mudflat/Coastal Water Body
Red Knot	*Calidris canutus*	紅腹濱鷸	Fellowes: LC; RLCV(VU)	Mudflat/Coastal Water Body
Broad-billed Sandpiper	*Calidris falcinellus*	闊嘴鷸	Fellowes: LC	Mudflat/Coastal Water Body
Curlew Sandpiper	*Calidris ferruginea*	彎嘴濱鷸	Fellowes: RC	Mudflat/Coastal Water Body
Red-necked Stint	*Calidris ruficollis*	紅頸濱鷸	Fellowes: LC	Mudflat/Coastal Water Body
Dunlin	*Calidris alpina*	黑腹濱鷸	Fellowes: RC	Mudflat/Coastal Water Body
Terek Sandpiper	*Xenus cinereus*	翹嘴鷸	Fellowes: RC	Mudflat/Coastal Water Body
Grey-tailed Tattler	*Tringa brevipes*	灰尾漂鷸	Fellowes: LC	Mudflat/Coastal Water Body
Common Redshank	*Tringa totanus*	紅腳鷸	Fellowes: RC	Mudflat/Coastal Water Body
Marsh Sandpiper	*Tringa stagnatilis*	澤鷸	Fellowes: RC	Mudflat/Coastal Water Body
Common Greenshank	*Tringa nebularia*	青腳鷸	Fellowes: RC	Mudflat/Coastal Water Body, Mangrove
Nordmann's Greenshank	*Tringa guttifer*	小青腳鷸	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(EN); CITES(I)	Mudflat/Coastal Water Body
Black-headed Gull	*Chroicocephalus ridibundus*	紅嘴鷗	Fellowes: PRC	Mudflat/Coastal Water Body
Saunders's Gull	*Chroicocephalus saundersi*	黑嘴鷗	Fellowes: GC; RLCV(VU); IUCN(VU)	Mudflat/Coastal Water Body
Lesser Black-backed Gull	*Larus fuscus*	烏灰銀鷗	Fellowes: LC	Mudflat/Coastal Water Body
Little Tern	*Sternula albifrons*	白額燕鷗	Fellowes: LC	Mudflat/Coastal Water Body

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	Fellowes: PRC	Mudflat/Coastal Water Body, In flight
Eurasian Spoonbill	*Platalea leucorodia*	白琵鷺	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Mudflat/Coastal Water Body
Black-faced Spoonbill	*Platalea minor*	黑臉琵鷺	Fellowes: PGC; RLCV(EN); CSMPS(II); IUCN(EN)	Mudflat/Coastal Water Body
Black-crowned Night Heron	*Nycticorax nycticorax*	夜鷺	Fellowes: (LC)	Mudflat/Coastal Water Body, Mangrove
Striated Heron	*Butorides striata*	綠鷺	Fellowes: (LC)	Mudflat/Coastal Water Body
Chinese Pond Heron	*Ardeola bacchus*	池鷺	Fellowes: PRC (RC)	Mangrove, Mudflat/Coastal Water Body
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	Fellowes: (LC)	Mudflat/Coastal Water Body
Grey Heron	*Ardea cinerea*	蒼鷺	Fellowes: PRC	Mangrove, Mudflat/Coastal Water Body
Great Egret	*Ardea alba*	大白鷺	Fellowes: PRC (RC)	Mangrove, Mudflat/Coastal Water Body
Intermediate Egret	*Ardea intermedia*	中白鷺	Fellowes: RC	Mudflat/Coastal Water Body
Little Egret	*Egretta garzetta*	小白鷺	Fellowes: PRC (RC)	Mangrove, Mudflat/Coastal Water Body
Western Osprey	*Pandion haliaetus*	鶚	Cap.586; Fellowes: RC; CSMPS(II); CITES(II)	Mudflat/Coastal Water Body
Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	Cap.586; Fellowes: (LC); CSMPS(II); CITES(II)	In flight
Greater Spotted Eagle	*Clanga clanga*	烏鵰	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(VU); CITES(II)	Mudflat/Coastal Water Body
Northern Goshawk	*Accipiter gentilis*	蒼鷹	Cap.586; Fellowes: (RC); RLCV(NT); CSMPS(II); CITES(II)	Woodland (Young)

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Eastern Marsh Harrier	*Circus spilonotus*	白腹鷞	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Mudflat/Coastal Water Body
Black Kite	*Milvus migrans*	黑鳶	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Mudflat/Coastal Water Body, In flight
Eastern Buzzard	*Buteo japonicus*	普通鵟	Cap.586; CSMPS(II); CITES(II)	Woodland (Young), Mudflat/Coastal Water Body
Collared Scops Owl	*Otus lettia*	領角鴞	Cap.586; CSMPS(II); CITES(II)	Plantation
White-throated Kingfisher	*Halcyon smyrnensis*	白胸翡翠	Fellowes: (LC)	Mangrove, Mudflat/Coastal Water Body
Black-capped Kingfisher	*Halcyon pileata*	藍翡翠	Fellowes: (LC); IUCN(VU)	Mangrove, Mudflat/Coastal Water Body
Pied Kingfisher	*Ceryle rudis*	斑魚狗	Fellowes: (LC)	Mudflat/Coastal Water Body, In flight
Common Kestrel	*Falco tinnunculus*	紅隼	Cap.586; CSMPS(II); CITES(II)	Mudflat/Coastal Water Body
Collared Crow	*Corvus torquatus*	白頸鴉	Fellowes: LC; IUCN(VU)	Woodland (Young), Mudflat/Coastal Water Body
Styan's Grasshopper Warbler	*Helopsaltes pleskei*	史氏蝗鶯	Fellowes: GC; RLCV(VU); IUCN(VU)	Mangrove
Red-billed Starling	*Spodiopsar sericeus*	絲光椋鳥	Fellowes: GC	Woodland (Young)
White-shouldered Starling	*Sturnia sinensis*	灰背椋鳥	Fellowes: (LC)	Mudflat/Coastal Water Body, In flight

Note:
Conservation Status:

- Cap. 170: All birds are protected under Wild Animals Protection Ordinance
- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- Fellowes – Fellowes et al. (2002): PRC = Potential Regional Concern, RC = Regional Concern, LC = Local Concern, GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
- RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable, EN = Endangered
- CSMPS– China State Major Protection Status: Appendix (I) or Appendix (II)
- CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna
- IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). EN = Endangered; VU = Vulnerable

5.2.3 HERPETOFAUNA

A total of five (5) amphibian species and five (5) reptile species were recorded within the Assessment Area. None of them are of conservation importance. The list of herpetofauna species recorded is provided in ***Annexes 6 – 7***.

5.2.4 BUTTERFLIES

A total of twenty (20) butterfly species were recorded within the Assessment Area. None of them are of conservation importance. The list of butterfly species recorded is provided in ***Annex 8***.

5.2.5 ODONATES

A total of six (6) odonate species were recorded within the Assessment Area, of which two (2) of them are of conservation importance. The list of odonate species recorded is provided in ***Annex 9***. Details of the odonate species of conservation importance are shown in ***Table 5-4***.

TABLE 5-4 ODONATE SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Odonate				
Coastal Glider	*Macrodiplax cora*	高翔澖蜻	Fellows: LC	Mangrove
Mangrove Skimmer	*Orthetrum poecilops poecilops*	斑灰蜻	Fellowes: GC; Reels: CI; IUCN(VU)	Mangrove

Note:
Conservation Status:
- Fellowes – Fellowes et al. (2002): LC = Local Concern, GC= Global Concern.
- Reels. G. (2019): CI = Species of Conservation Importance
- IUCN – International Union for Conservation of Nature Red List of Threatened Species (2022). VU = Vulnerable.

5.2.6 FRESHWATER COMMUNITY

A total of two (2) freshwater/brackish fish species and three (3) freshwater invertebrate species were recorded within the Assessment Area. None of them are of conservation importance. The list of aquatic fauna species recorded is provided in ***Annex 10***.

5.2.7 FIREFLY

Only one (1) firefly species were recorded within the Assessment Area, which is of conservation importance. The list of firefly species recorded is provided in ***Annex 11***. Details of the firefly species of conservation importance are shown in ***Table 5-5***.

TABLE 5-5 FIREFLY SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Firefly				
-	*Pteroptyx maipo*	米埔屈翅螢	IUCN (EN)	Mangrove

Notes:
- IUCN: International Union for Conservation of Nature Red List of Threatened Species (2024). EN = Endangered

5.2.8 INTERTIDAL COMMUNITY

A total of fifteen intertidal species were recorded within the Assessment Area. Overall, the majority of the species recorded in the survey are common, widespread and typical of intertidal habitats in Hong Kong. No horseshoe crab or seagrass species of conservation importance were recorded during the survey. The list of intertidal species recorded is provided in ***Annex 12***.

6. EVALUATION OF HABITATS AND SPECIES

The ecological importance evaluation of each terrestrial habitat type within the Assessment Area is presented in ***Table 6-1*** to ***Table 6-10***. The species of conservation importance identified within the Assessment Area during the surveys and literature review are evaluated in ***Table 6-11***, in accordance with the *EIAO TM Annex 8* criteria. The locations of these species of conservation importance, whenever available, are presented in ***Figure 5.1*****.** The evaluation is based upon the information of literature review and ecological surveys presented in ***Sections 3*** and ***5***.

6.1 ASSESSMENT AREA AND PROJECT SITE

Terrestrial habitats recorded within the Assessment Area included woodland (young), plantation, shrubland, seasonally wet grassland, watercourse, fishpond, mangrove, village area, developed area, and mudflat/coastal water body. Within the Project Site, only plantation was recorded, which shared similar conditions of same habitat within the Assessment Area. Therefore, ecological evaluation of each habitat type within the Assessment Area and Project Site are assessed together and presented in ***Table 6-1***Table 6-1 to ***Table 6-10***.

TABLE 6-1 ECOLOGICAL EVALUATION OF WOODLAND WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Woodland (Young)
Naturalness	Semi-natural, patches of young woodland consisting of a mixture of native tree, exotic and orchard species, due to close vicinity to village area, developed area and main roads it is subjected to human disturbances.
Size	Approximately 3.97ha (4.09%) within the Assessment Area
Diversity	Low to Moderate diversity of plant species and structural complexity Low to Moderate diversity of avifauna; low diversity of other fauna groups
Rarity	Total of six (6) species of conservation importance recorded including one (1) flora, two (2) mammal and four (4) avifauna species. Flora: *Aquilaria sinensis* Mammal: Small Indian Civet and Leopard Cat Avifauna: Northern Goshawk, Eastern Buzzard, Collared Crow, Red-billed Starling
Re-creatability	Young woodland is re-creatable. but the more mature the woodland, the longer time required for compensation/re-creation.
Fragmentation	Fragmented within the Assessment Area
Ecological Linkage	Functionally links to shrubland, mangrove in proximity
Potential Value	Moderate potential value to become a more mature woodland if given sufficient time and protection from disturbances such as hill fires and other development.
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded

Criteria	Woodland (Young)
Age	Young woodlands ranging from 15 years to 30 years
Abundance/ Richness of Wildlife	Low to Moderate abundance and richness for avifauna; low for rest of fauna groups
Overall Ecological Value	**Low to Moderate**

TABLE 6-2 ECOLOGICAL EVALUATION OF PLANTATION WITHIN THE ASSESSMENT AREA

Criteria	Plantation
Naturalness	Semi-natural, comprising of landscaping or introduced afforestation species that were planted in the past, as well as naturally recruited plant species.
Size	Approx. 6.06ha (6.24%) within the Assessment Area and 0.3ha within the Project Site
Diversity	Low to Moderate diversity of plant species and structural complexity Low to Moderate diversity of avifauna; low diversity of other fauna groups
Rarity	Total of six (6) species of conservation importance recorded including one (1) flora, three (3) mammal and two (2) avifauna species. Flora: *Aquilaria sinensis* Mammal: Japanese Pipistrelle, Leopard Cat, Small Indian Civet Avifauna: Greater Coucal, Collared Scops Owl (recorded within the Project Site with nesting behaviour, but the nest was later on confirmed inactive).
Re-creatability	Readily re-creatable through afforestation schemes though it would take at least 15 years or more for recruitment of native flora species.
Fragmentation	One isolated patch within the Assessment Area.
Ecological Linkage	Functionally linked to adjacent shrubland and mangrove in close proximity. Weak ecological linkages to woodland that is separated through a narrow-developed area.
Potential Value	Potentially go through succession and transition towards woodland if given sufficient time and protection from natural and anthropogenic disturbances.
Nursery/ Breeding Ground	Nesting site of Collared Scops Owl recorded within the habitat.
Age	Ranging from 5 to 15 years
Abundance/ Richness of Wildlife	Low to Moderate abundance and richness for avifauna; low for rest of fauna groups

Criteria	Plantation
Overall Ecological Value	**Low to Moderate**

TABLE 6-3 ECOLOGICAL EVALUATION OF SHRUBLAND WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Shrubland
Naturalness	Semi-natural habitat, mainly covered by native shrub and grass species
Size	Approx. 10.42ha (10.73%) within the Assessment Area.
Diversity	Low to moderate diversity of plant species and Low structural complexity. Low diversity among all fauna groups.
Rarity	Total of two (2) species of conservation importance recorded including one (1) flora, and one (1) avifauna species. Flora: *Aquilaria sinensis* Avifauna: Greater Coucal.
Re-creatability	It takes approximately 5 years for shrubland to regenerate.
Fragmentation	Fragmented patches of shrubland, primarily separated by developed area, are present at southwest of Assessment Area.
Ecological Linkage	Functionally linked to woodland, plantation in close proximity.
Potential Value	Potential to become mature shrubland and then young mixed woodland if given sufficient time and protection from disturbance.
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded.
Age	N/A
Abundance/ Richness of Wildlife	Low for all fauna groups
Overall Ecological Value	**Low to Moderate**

TABLE 6-4 ECOLOGICAL EVALUATION OF SEASONALLY WET GRASSLAND WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	**Seasonally Wet Grassland**
Naturalness	Semi-natural habitat, mainly developed from abandoned fishponds or potentially from abandoned wet agricultural land through natural succession
Size	Approx. 0.53ha (0.54%) within the Assessment Area.
Diversity	Low diversity of plant species and structural complexity. Low fauna diversity.
Rarity	No species of conservation importance recorded.
Re-creatability	Able to be re-created under suitable hydrological conditions.
Fragmentation	A patch of seasonally wet grassland located at west of Assessment Area is not fragmented.
Ecological Linkage	Functionally linked to watercourse in close proximity.
Potential Value	Could potentially be further improved by active management practices such as weed control and management of water levels, ensuring connection with associated wetland habitats (i.e. marsh, watercourse and pond) for better recruitment of avifauna, odonate and aquatic fauna species.
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded.
Age	N/A
Abundance/ Richness of Wildlife	Low for all fauna groups.
Overall Ecological Value	**Low**

TABLE 6-5 ECOLOGICAL EVALUATION OF WATERCOURSE WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	**Watercourse**	
	Semi-natural Watercourse	**Channelized Watercourse**
Naturalness	Among all three watercourses, two are semi-natural and are across the village area and shrubland, suggesting low to moderate human disturbance.	Among all three watercourses, one is a channelized drain situated within the project site, waterflow is seasonal, with limited species recorded within.
Size	834m within the Assessment Area	150m within the Assessment Area
Diversity	Low floral diversity and moderate structural complexity Low diversity for all fauna groups	Low floral diversity and structural complexity Low diversity for all fauna groups
Rarity	No species of conservation importance was recorded within the habitat.	
Re-creatability	Difficult to be re-created	Re-creatable when suitable hydrological conditions are available
Fragmentation	As the watercourse sections are in close vicinity to village area and developed area, some are disturbed/blocked by minor concrete structures/piping which may impede movement of diadromous species.	Poor linkage between upstream and downstream areas
Ecological Linkage	Functionally linked to adjacent habitats (i.e. woodland, plantation, seasonally wet grassland, and mangrove)	Functionally linked to adjacent habitats (i.e. plantation)
Potential Value	Could be benefited from a minimization of anthropogenic influences (i.e. pollution, concrete structures) in the downstream areas	Low
Nursery/ Breeding Ground	Potential nursery ground and breeding grounds for amphibians, odonates and aquatic fauna	As the channelized watercourse is seasonal, it only provides limited opportunities as potential nursery ground and breeding grounds for amphibians, odonates and aquatic fauna
Age	N/A	
Abundance/ Richness of Wildlife	Low abundance and richness for all fauna groups	
Overall Ecological Value	**Low**	**Low**

TABLE 6-6 ECOLOGICAL EVALUATION OF FISHPOND WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Fishpond
Naturalness	Man-made habitat, consisting of both actively managed fishponds as well as abandoned ponds
Size	Approx. 0.77 ha (0.79%) within the Assessment Area
Diversity	Low floral diversity and structural complexity Low for all fauna groups
Rarity	No species of conservation importance recorded.
Re-creatability	Readily re-creatable
Fragmentation	Isolated ponds situated within village and developed area.
Ecological Linkage	Functionally linked to mangrove
Potential Value	Potential feeding ground of species of conservation importance. Could be further improved by active management practices such as weed control and management of water levels, ensuring connection with associated wetland habitats (i.e. seasonally wet grassland, watercourse and pond) for better recruitment of avifauna, odonate and aquatic fauna species
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded.
Age	Not applicable
Abundance/ Richness of Wildlife	Low abundance and richness for all fauna groups
Overall Ecological Value	**Low to Moderate**

TABLE 6-7 ECOLOGICAL EVALUATION OF MANGROVE WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Mangrove
Naturalness	Natural habitat
Size	Approx. 18.61 ha (19.15%) within the Assessment Area.
Diversity	Low floral diversity and structural complexity Low to medium diversity of avifauna, low for other fauna groups
Rarity	Total of twelve (12) species of conservation importance recorded including nine (9) avifauna, two (2) odonate and one (1) firefly species.

Criteria	Mangrove
	Avifauna: Greater Coucal, Common Greenshank, Chinese Pond Heron, Grey Heron, Great Egret, Little Egret, White-throated Kingfisher, Black-capped Kingfisher and Styan's Grasshopper Warbler Odonate: Coastal Glider and Mangrove Skimmer Firefly: *Pteroptyx maipo*
Re-creatability	Difficult to be re-created
Fragmentation	Slightly fragmented and generally connected along with the coastal area within the Assessment Area
Ecological Linkage	Functionally linked to mudflat/coastal water body, woodland, plantation and fishpond
Potential Value	Moderate
Nursery/ Breeding Ground	Patches of mangroves in Tsim Bei Tsui are nursey and breeding grounds for *Pteroptyx maipo*. Mangroves in general are nursery and breeding grounds of other intertidal infauna and epifauna species
Age	N/A
Abundance/ Richness of Wildlife	Low to Moderate abundance and richness of avifauna, low abundance, and richness for other terrestrial fauna species
Overall Ecological Value	**High**

TABLE 6-8 ECOLOGICAL EVALUATION OF VILLAGE AREA WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Village Area
Naturalness	Man-made habitat with intensive human disturbances
Size	Approx. 3.92 ha (4.04%) within the Assessment Area.
Diversity	Low to Moderate diversity of plant species and low structural complexity Low for all fauna groups
Rarity	No species of conservation importance recorded.
Re-creatability	Readily re-creatable
Fragmentation	Fragmented and scattered within Assessment Area

Criteria	Village Area
Ecological Linkage	No linkage with adjacent habitats
Potential Value	Low potential value
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded
Age	N/A
Abundance/ Richness of Wildlife	Low to for avifauna and very low for other fauna groups
Overall Ecological Value	**Low**

TABLE 6-9 ECOLOGICAL EVALUATION OF DEVELOPED AREA

Criteria	Developed Area
Naturalness	Man-made habitat with intensive human disturbances
Size	Approx. 10.85 ha (11.17%) within the Assessment Area
Diversity	Low diversity of plant species and low structural complexity Low for all fauna groups
Rarity	No species of conservation importance recorded in this habitat
Re-creatability	Readily re-creatable
Fragmentation	Fragmented and scattered within Assessment Area
Ecological Linkage	No linkage with adjacent habitats
Potential Value	Low potential value
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded
Age	N/A
Abundance/ Richness of Wildlife	Low of all fauna groups
Overall Ecological Value	**Low**

TABLE 6-10 ECOLOGICAL EVALUATION OF MUDFLAT/ COASTAL WATER BODY WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Mudflat/Coastal Water Body
Naturalness	Natural habitat
Size	Approx. 42.02ha (43.24%) within the Assessment Area.
Diversity	Low floral diversity and structural complexity Moderate to high diversity of avifauna, low for other fauna groups
Rarity	No flora species of conservation importance was recorded A total of 56 avifauna species of conservation importance was recorded during the survey
Re-creatability	Difficult to be re-created
Fragmentation	Not fragmented
Ecological Linkage	Functionally linked to mangrove
Potential Value	High
Nursery/ Breeding Ground	Potential breeding ground for horseshoe crab and other intertidal infauna and epifauna species
Age	N/A
Abundance/ Richness of Wildlife	High abundance and richness for avifauna species, low for other terrestrial fauna species
Overall Ecological Value	**High**

6.2 SUMMARY OF SPECIES OF CONSERVATION IMPORTANCE

A list and evaluation of the species of ecological conservation importance recorded during the ecological baseline field surveys within the Assessment Area, according to the *EIAO-TM*, are given in ***Table 6-11***, in accordance with Annex 8 of EIAO-TM. The locations of these species of conservation importance, whenever available, are presented in ***Figure 5.1***.

TABLE 6-11 EVALUATION OF SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Flora						
Incense Tree	*Aquilaria sinensis*	• Cap. 586; • Wild plant under State protection (category II) (AFCD, 2003); • Recorded in China Plant Red Data Book and Illustration of Rare & endangered plant in Guangdong Province (AFCD, 2003); • Category 2 & 3 (AFCD, 2003); • IUCN(VU); • RLCHP: EN; • CITES(II)	Common in Hong Kong	-	✓	-
Mammal						
Least Horseshoe Bat	*Rhinolophus pusillus*	• Cap.170; • Fellowes: PRC (RC)	Uncommon, widely distributed in urban and countryside areas throughout Hong Kong.	✓[7]	-	-
Himalayan Leaf-nosed Bat	*Hipposideros armiger*	• Cap.170; • Fellowes: (LC)	Very common. Widely distributed in urban and	✓[7]	-	✓

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			countryside areas throughout Hong Kong.			
Chinese Noctule	*Nyctalus plancyi*	• Cap.170; • Fellowes: PRC (RC)	Common, very widely distributed in urban and countryside areas throughout Hong Kong.	✓[7]	-	-
Japanese Pipistrelle	*Pipistrellus abramus*	• Cap.170	Very common, widely distributed throughout Hong Kong.	✓[7]	✓	-
Eurasian Otter	*Lutra lutra*	• Cap.170; • Cap.586; • Fellowes: RC; • RLCV(EN); • CSMPS(II); • IUCN(NT); • GSS(LD); • CITES(I)	Rare, Species of Conservation Concern, Restricted to Mai Po, Lok Ma Chau, Hoo Hok Wai, and nearby areas.	✓[2]	-	-
Small Indian Civet	*Viverricula indica*	• Cap.170; • RLCV(VU); • CSMPS(II); • CITES(III)	Very common, widely distributed in urban and countryside areas throughout Hong Kong.	✓[4, 7]	✓	✓

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Small Asian Mongoose	*Herpestes javanicus*	• Cap.170; • RLCV(VU); • CITES(III)	Uncommon, fairly widely distributed in countryside areas throughout Hong Kong.	✓[4]	-	-
Leopard Cat	*Prionailurus bengalensis*	• Cap.170; • Cap.586; • RLCV(VU); • CITES(II)	Uncommon, widely distributed in countryside areas throughout Hong Kong.	✓[4, 7]	✓	✓
Avifauna						
Greater White-fronted Goose	*Anser albifrons*	• CSMPS(II)	Vagrant. Found in Lok Ma Chau.	✓[6]	-	-
Baikal Teal	*Sibirionetta formosa*	• Cap.586; • CITES(II)	Scarce winter visitor. Found in Deep Bay area, Kowloon Park, Kam Tin.	✓[6]	-	-
Northern Shoveler	*Spatula clypeata*	• Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Falcated Duck	*Mareca falcata*	• Fellowes: RC	Uncommon winter visitor. Found in Mai Po, Shuen Wan, Long Valley.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Eurasian Wigeon	*Mareca penelope*	• Fellowes: RC	Winter visitor. Found in Deep Bay area, Tai Lam Chung.	✓[6, 7]	✓	-
Indian Spot-billed Duck	*Anas poecilorhyncha*	• Fellowes: RC	Rare visitor. Found in Deep Bay area.	✓[6]	-	-
Mallard	*Anas platyrhynchos*	• Fellowes: RC	Scarce winter visitor. Found in Deep Bay area, Tai Lam Chung, Hok Tau Reservoirs, Tolo Harbour, Nam Chung, Long Valley, Kam Tin.	✓[6]	-	-
Northern Pintail	*Anas acuta*	• Fellowes: RC	Abundant winter visitor. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin.	✓[6, 7]	✓	-
Eurasian Teal	*Anas crecca*	• Fellowes: RC	Common winter visitor. Found in Deep Bay area, Shuen Wan, Tai Lam Chung Reservoir, Victoria Harbour, urban parks.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Tufted Duck	*Aythya fuligula*	• Fellowes: LC	Rare winter visitor. Found in Mai Po.	✓[6, 7]	✓	-
Red-breasted Merganser	*Mergus serrator*	• Fellowes: LC	Rare winter visitor and scarce spring passage migrant. Found in Deep Bay area, Plover Cove Reservoir, Shing Mun Reservoir.	✓[7]	✓	-
Chinese Francolin	*Francolinus pintadeanus*	• RLCV(VU)	Common resident. Widely distributed in grassland throughout Hong Kong.	✓[5]	-	-
Greater Coucal	*Centropus sinensis*	• CSMPS (II)	Common resident. Widely distributed in Hong Kong.	✓[7]	✓	-
Little Grebe	*Tachybaptus ruficollis*	• Fellowes: LC	Common resident. Found in Deep Bay area.	✓[6]	-	-
Great Crested Grebe	*Podiceps cristatus*	• Fellowes: RC	Common winter visitor. Found in Tsim Bei Tsui, Starling Inlet.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Black-winged Stilt	*Himantopus himantopus*	• Fellowes: RC	Common migrant and winter visitor. Found in Deep Bay area, Long Valley, Kam Tin.	✓[6, 7]	✓	-
Pied Avocet	*Recurvirostra avosetta*	• Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Northern Lapwing	*Vanellus vanellus*	• Fellowes: LC	Scarce winter visitor. Found in Mai Po, Long Valley, Chek Lap Kok, Ho Chung, Tai Long Wan, Tai Po, Castle Peak coast.	✓[6]	-	-
Pacific Golden Plover	*Pluvialis fulva*	• Fellowes: LC	Common migrant and winter visitor. Found in Deep Bay area, Chek Lap Kok, Long Valley.	✓[6, 7]	✓	-
Grey Plover	*Pluvialis squatarola*	• Fellowes: RC	Abundant winter visitor and scarce migrant. Found in Deep Bay area.	✓[5, 6, 7]	✓	-
Little Ringed Plover	*Charadrius dubius*	• Fellowes: (LC)	Resident, common winter visitor and passage	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			migrant. Widely distributed in freshwater areas throughout Hong Kong.			
Kentish Plover	*Charadrius alexandrinus*	• Fellowes: RC	Abundant winter visitor and scarce migrant. Found in Deep Bay area, Chek Lap Kok, Shuen Wan, Sai Kung, Lantau Island.	✓[6, 7]	✓	-
Lesser Sand Plover	*Charadrius mongolus*	• Fellowes: LC	Uncommon passage migrant and scarce winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Greater Sand Plover	*Charadrius leschenaultii*	• Fellowes: RC	Abundant passage migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Oriental Plover	*Charadrius veredus*	• Fellowes: LC	Scarce passage migrant. Found in Deep Bay area, Kai Tak, Chek Lap Kok.	✓[6]	-	-
Whimbrel	*Numenius phaeopus*	• Fellowes: LC	Common passage migrant and scarce winter visitor.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			Found in Deep Bay area, Sai Kung, Tung Ping Chau, Ninepins, Cape D'Aguilar, Pok Fu Lam.			
Far Eastern Curlew	*Numenius madagascariensis*	• Fellowes: LC; • RLCV(VU); • IUCN(EN)	Uncommon passage migrant. Found in Deep Bay area.	✓[6]	-	-
Eurasian Curlew	*Numenius arquata*	• Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Bar-tailed Godwit	*Limosa lapponica*	• Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area.	✓[6]	✓	-
Black-tailed Godwit	*Limosa limosa*	• Fellowes: RC	Abundant passage migrant and winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Ruddy Turnstone	*Arenaria interpres*	• Fellowes: LC	Passage migrant. Found in Deep Bay area, Starling Inlet, Sai Kung, Tai Long Wan.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Great Knot	*Calidris tenuirostris*	• Fellowes: LC; • RLCV(EN); • IUCN(EN)	Common passage migrant and scarce winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Red Knot	*Calidris canutus*	• Fellowes: LC; • RLCV(VU)	Common passage migrant and scarce winter visitor. Found in Deep Bay area, Shuen Wan.	✓[6, 7]	✓	-
Broad-billed Sandpiper	*Calidris falcinellus*	• Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area, Ho Chung, Shuen Wan.	✓[6, 7]	✓	-
Sharp-tailed Sandpiper	*Calidris acuminata*	• Fellowes: LC; • IUCN(VU)	Common passage migrant. Found in Deep Bay area, Shuen Wan, Sai Kung, Long Valley, Tai Po, Lam Tsuen.	✓[6]	-	-
Curlew Sandpiper	*Calidris ferruginea*	• Fellowes: RC	Abundant spring passage migrant. Found in Deep Bay area, Cape D'Aguilar.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Temminck's Stint	*Calidris temminckii*	• Fellowes: LC	Uncommon winter visitor and migrant. Widely distributed in Deep Bay area fishponds.	✓[6]	-	-
Long-toed Stint	*Calidris subminuta*	• Fellowes: LC	Common passage migrant and scarce winter visitor. Found in Long Valley, Ma Tso Lung, Tsim Bei Tsui, Kam Tin, Pui O, Shuen Wan.	✓[6]	-	-
Spoon-billed Sandpiper	*Calidris pygmaea*	• Fellowes: GC; • RLCV(CR); • IUCN(CR)	Scarce spring migrant. Found in Deep Bay area.	✓[6]	-	-
Red-necked Stint	*Calidris ruficollis*	• Fellowes: LC	Abundant spring passage migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Sanderling	*Calidris alba*	• Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area, Tai Long Wan, Sai Kung.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Dunlin	*Calidris alpina*	• Fellowes: RC	Abundant winter visitor and scarce passage migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Little Stint	*Calidris minuta*	• Fellowes: LC	Uncommon spring passage migrant. Found in Mai Po, Tsim Bei Tsui.	✓[6]	-	-
Asian Dowitcher	*Limnodromus semipalmatus*	• Fellowes: RC	Common passage migrant. Found in Deep Bay area.	✓[6, 7]	-	-
Pintail/Swinhoe's Snipe	*Gallinago stenura/ G. megala*	• Fellowes: LC (*G. megala*)	*Gallinago stenura*: Common passage migrant. Found in Long Valley, Chau Tau, Ha Tsuen. *G. megala*: Uncommon passage migrant. Found in Long Valley.	✓[6]	-	-
Terek sandpiper	*Xenus cinereus*	• Fellowes: RC	Common passage migrant. Found in Deep Bay area, Sai Kung, Tung Ping Chau, Cape D'Aguilar.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Grey-tailed Tattler	*Tringa brevipes*	• Fellowes: LC	Common passage migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Common Redshank	*Tringa totanus*	• Fellowes: RC	Abundant passage migrant and winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Marsh Sandpiper	*Tringa stagnatilis*	• Fellowes: RC	Abundant winter visitor and migrant. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin, Sai Kung.	✓[6, 7]	✓	-
Wood Sandpiper	*Tringa glareola*	• Fellowes: LC	Common migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong.	✓[6]	-	-
Spotted Redshank	*Tringa erythropus*	• Fellowes: RC	Common migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Common Greenshank	*Tringa nebularia*	• Fellowes: RC	Abundant winter visitor and migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Nordmann's Greenshank	*Tringa guttifer*	• Cap.586; • Fellowes: GC; • RLCV(EN); • CSMPS(II); • IUCN(EN); • CITES(I)	Uncommon passage migrant and scarce winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Oriental Pratincole	*Glareola maldivarum*	• Fellowes: LC	Passage migrant. Found in Mai Po, Tsim Bei Tsui.	✓[6]	-	-
Black-headed Gull	*Chroicocephalus ridibundus*	• Fellowes: PRC	Abundant winter visitor. Found in Deep Bay area and coastal waters.	✓[6, 7]	✓	-
Saunders's Gull	*Chroicocephalus saundersi*	• Fellowes: GC; • RLCV(VU); • IUCN(VU)	Common winter visitor. Found in Deep Bay area, Chek Lap Kok.	✓[6, 7]	✓	-
Pallas's Gull	*Ichthyaetus ichthyaetus*	• Fellowes: LC	Scarce winter visitor and passage migrant. Found in Deep Bay area.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Black-tailed Gull	*Larus crassirostris*	• Fellowes: LC	Common winter visitor and spring passage migrant. Found in Deep Bay area, Tolo Harbour, Starling Inlet, Lamma Island, Mirs Bay.	✓[6]	-	-
Mew Gull	*Larus canus*	• Fellowes: LC	Scarce winter visitor and spring migrant. Found in Deep Bay area.	✓[6]	-	-
Lesser Black-backed Gull	*Larus fuscus*	• Fellowes: LC	Common winter visitor and passage migrant. Found in Deep Bay area, Cape D'Aguilar.	✓[6, 7]	✓	-
Caspian Tern	*Hydroprogne caspia*	• Fellowes: RC	Common spring migrant. Found in Deep Bay area.	✓[6]	-	-
Little Tern	*Sternula albifrons*	• Fellowes: LC	Uncommon spring passage migrant. Found in Mai Po, Ting Kau, Tsuen Wan Ferry Pier.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Oriental Stork	*Ciconia boyciana*	• Fellowes: GC; • RLCV(EN); • IUCN(EN); • CITES(I)	Rare winter visitor. Found in Deep Bay area.	✓[6]	-	-
Great Cormorant	*Phalacrocorax carbo*	• Fellowes: PRC	Common winter visitor. Widely distributed in coastal areas throughout Hong Kong.	✓[6, 7]	✓	-
Eurasian Spoonbill	*Platalea leucorodia*	• Cap.586; • Fellowes: LC; • CSMPS(II); • CITES(II)	Uncommon winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Black-faced Spoonbill	*Platalea minor*	• Fellowes: PGC; • RLCV(EN); • CSMPS(II); • IUCN(EN)	Common winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Yellow Bittern	*Ixobrychus sinensis*	• Fellowes: (LC)	Uncommon summer visitor and common passage migrant. Found in Deep Bay area, Chek Keng, Tai Long Wan.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Black-crowned Night Heron	*Nycticorax nycticorax*	• Fellowes: (LC)	Common resident and migrant. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
Striated Heron	*Butorides striata*	• Fellowes: (LC)	Common summer visitor. Widely distributed in Hong Kong.	✓[6]	✓	-
Chinese Pond Heron	*Ardeola bacchus*	• Fellowes: PRC (RC)	Common resident. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
Eastern Cattle Egret	*Bubulcus coromandus*	• Fellowes: (LC)	Resident and common passage migrant. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
Grey Heron	*Ardea cinerea*	• Fellowes: PRC	Common winter visitor. Found in Deep Bay area, Starling Inlet, Kowloon Park, Cape D'Aguilar.	✓[6, 7]	✓	-
Great Egret	*Ardea alba*	• Fellowes: PRC (RC)	Common resident, migrant and winter visitor. Widely distributed in Hong Kong	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Intermediate Egret	*Ardea intermedia*	• Fellowes: RC	Resident and passage migrant. Found in Deep Bay area, Tai Long Wan, Starling Inlet, Tai O, Cape D'Aguilar.	✓[6, 7]	✓	-
Little Egret	*Egretta garzetta*	• Fellowes: PRC (RC)	Common resident, migrant and winter visitor. Widely distributed in coastal area throughout Hong Kong.	✓[6, 7]	✓	-
Chinese Egret	*Egretta eulophotes*	• Fellowes: GC; • RLCV(EN); • CSMPS(II); • IUCN(VU)	Scarce spring passage migrant. Found in Mai Po, Lok Ma Chau, Nam Chung.	✓[6]	-	-
Western Osprey	*Pandion haliaetus*	• Cap.586; • Fellowes: RC; • CSMPS(II); • CITES(II)	Common winter visitor. Widely distributed in coastal areas throughout Hong Kong.	✓[6, 7]	✓	-
Crested Serpent Eagle	*Spilornis cheela*	• Cap.586; • Fellowes: (LC); • CSMPS(II); • CITES(II)	Common resident. Widely distributed in shrublands on hillsides throughout Hong Kong.	✓[6]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Greater Spotted Eagle	*Clanga clanga*	• Cap.586; • Fellowes: GC; • RLCV(EN); • CSMPS(II); • IUCN(VU); • CITES(II)	Common winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Eastern Imperial Eagle	*Aquila heliaca*	• Cap.586; • Fellowes: GC; • RLCV(EN); • CSMPS(I); • IUCN(VU); • CITES(I)	Common winter visitor. Found in Deep Bay area, Ma Tso Lung.	✓[6]	-	-
Chinese Sparrowhawk	*Accipiter soloensis*	• Cap.586; • CSMPS(II); • CITES(II)	Common passage migrant. Found in Tsim Bei Tsui, Kadoorie Farm & Botanic Garden, Tai Po Kau.	✓[7]	-	-
Besra	*Accipiter virgatus*	• Cap.586; • CSMPS(II); • CITES(II)	Common resident and migrant. Found in Tai Po Kau, Deep Bay area, Chek Lap Kok, Cheung Chau, Soko Islands.	✓[6]	-	-
Northern Goshawk	*Accipiter gentilis*	• Cap.586; • Fellowes: (RC); • CSMPS(II); • CITES(II)	Vagrant. Found in Mai Po.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Eastern Marsh Harrier	*Circus spilonotus*	• Cap.586; • Fellowes: LC; • CSMPS(II); • CITES(II)	Common winter visitor and passage migrant. Found in Deep Bay area, Starling Inlet area, Kadoorie Farm & Botanic Garden, Mount Austin.	✓[6, 7]	✓	-
Black Kite	*Milvus migrans*	• Cap.586; • Fellowes: (RC); • CSMPS(II); • CITES(II)	Common resident and winter visitor. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
White-bellied Sea Eagle	*Haliaeetus leucogaster*	• Cap.586; • Fellowes: (RC); • RLCV(VU); • CSMPS(I); • CITES(II)	Locally common resident. Widely distributed in coastal areas throughout Hong Kong.	✓[6]	-	-
Eastern Buzzard	*Buteo japonicus*	• Cap.586, • CSMPS(II); • CITES(II)	Common winter visitor. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
Collared Scops Owl	*Otus lettia*	• Cap.586; • CSMPS(II); • CITES(II)	Common resident. Widely distributed in shrubland throughout Hong Kong	✓[6, 7]	✓	✓

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
White-throated Kingfisher	*Halcyon smyrnensis*	• Fellowes: (LC)	Common resident. Widely distributed in coastal areas throughout Hong Kong.	✓[6, 7]	✓	-
Black-capped Kingfisher	*Halcyon pileata*	• Fellowes: (LC); • IUCN(VU)	Uncommon passage migrant and winter visitor. Widely distributed in coastal areas throughout Hong Kong.	✓[6, 7]	✓	-
Pied Kingfisher	*Ceryle rudis*	• Fellowes: (LC)	Common resident. Widely distributed in lakes and ponds throughout Hong Kong.	✓[6, 7]	✓	-
Common Kestrel	*Falco tinnunculus*	• Cap.586; • CSMPS(II); • CITES(II)	Common autumn migrant and winter visitor. Widely distributed in Hong Kong.	-	✓	-
Peregrine Falcon	*Falco peregrinus*	• Cap.586; • Fellowes: (LC); • CSMPS(II); • CITES(I)	Locally common resident and winter visitor. Widely distributed in Hong Kong.	✓[6]	-	-
Collared Crow	*Corvus torquatus*	• Fellowes: LC; • IUCN(VU)	Locally common resident. Found in Inner Deep Bay	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			area, Nam Chung, Kei Ling Ha, Tai Mei Tuk, Pok Fu Lam, Chek lap Kok, Shuen Wan, Lam Tsuen.			
Zitting cisticola	*Cisticola juncidis*	• Fellowes: LC	Common passage migrant and winter visitor. Widely distributed in grassland throughout Hong Kong	✓[7]	-	-
Chinese Hwamei	*Garrulax canorus*	• Cap.586; • CITES(II)	Common resident. Widely distributed in hillside shrubland throughout Hong Kong	✓[7]	-	-
Red-billed Starling	*Spodiopsar sericeus*	• Fellowes: GC	Abundant winter visitor. Widely distributed in Hong Kong	✓[5,6, 7]	✓	-
White-cheeked Starling	*Spodiopsar cineraceus*	• Fellowes: PRC	Locally common winter visitor. Found in Deep Bay area, Kam Tin, Long Valley	✓[5]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Styan's Grasshopper Warbler	*Helopsaltes pleskei*	• Fellowes: GC; • RLCV(VU); • IUCN(VU)	Scarce passage migrant and winter visitor. Found in Ma Tso Lung, Mai Po	-	✓	-
White-shouldered Starling	*Sturnia sinensis*	• Fellowes: (LC)	Locally common passage migrant and uncommon winter visitor. Found in Kam Tin, Deep Bay area, Po Toi Island, Long Valley, Victoria Park, Ho Chung, Ma Tso Lung, Mui Wo, Lam Tsuen Valley	-	✓	-
Butterfly						
Common Awl	*Hasora badra*	• Fellowes: LC; • AFCD (2011): Very Rare	Wu Kau Tan, Lai Chi Wo, Hong Kong Wetland Park.	✓[7]	-	-
Common Cerulean	*Jamides celeno*	• AFCD (2011): Rare	Shek Pik, High Junk Peak, Shek Mun Kap, Fung Yuen, Pui O, Ma On Shan.	✓[7]	-	-
Tiny Grass Blue	*Zizula hylax*	• AFCD (2011): Very Rare (Species of Conservation Concern)	Lung Kwu Tan, Fung Yuen, Sha Lo Wan.	✓[7]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Black-vein Sergeant	*Athyma ranga*	• Fellowes: LC	Shing Mun, Ngau Ngak Shan, Tai Mong Tsai, Tai Mo Shan, Tai Po Kau, Cloudy Hill.	✓[7]	-	-
Danaid Egg-fly	*Hypolimnas misippus*	• Fellowes: LC	Ngau Ngak Shan, Lung Kwu Tan, Hong Kong Wetland Park, Mount Parker, Cloudy Hill, Lin Ma Hang.	✓[7]	-	-
Swallowtail	*Papilio xuthus*	• AFCD (2011): Rare	Kap Lung, Ma On Shan, Tai Tam, Sha Lo Wan, Kat O, Lung Kwu Tan, Wu Kau Tang, Lung Kwu Chau.	✓[7]	-	-
Odonate						
Coastal Glider	*Macrodiplax cora*	• Fellows: LC	Frequents marshes and ponds with dense vegetation, especially adjacent to coastal areas	-	✓	-
Mangrove Skimmer	*Orthetrum poecilops poecilops*	• Fellowes: GC; • Reels: CI; • IUCN(VU)	Occurs where small freshwater streams	-	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			cascade into tidal mangroves. Found mainly in the Northeast New Territories, including Double Island, Lai Chi Wo, Nam Chung, So Lo Pun, Yim Tso Ha, Yung Shue Au and Yung Shue O etc; also recorded in Tung Chung and Tai O			
Firefly						
-	*Pteroptyx maipo*	• IUCN(EN)	Endemic to South China, Mangrove-dependent, Distribution restricted to Deep Bay area locally[20, 21,22]	✓[7, 21]	✓	-
Horseshoe crab						
Horseshoe crab	*Carcinoscorpius rotundicauda*	• Grade II National Key Protected Species	Identified in mudflats at Sheung Pak Nai, Pak Nai and Ha Pak Nai[24]	✓[23]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Horseshoe crab	*Tachypleus tridentatus*	• Grade II National Key Protected Species; • IUCN(EN)	Identified in mudflats at Sheung Pak Nai, Pak Nai and Tsim Bei Tsui[24]	✓[23]	-	-
Seagrass						
Beccari's Halophila	*Halophila beccarii*	• IUCN(VU); • RLCHP: VU	Identified in mudflats at Tsim Bei Tsui, Sheung Pak Nai and Ha Pak Nai	✓[24, 25]	-	-

Notes:
Literature Sources:

(1) Shek, C.T. (2004). Bats of Hong Kong: An introduction of Hong Kong bats with an illustrative identification key. Hong Kong Biodiversity, 7, 1-9.
(2) Shek, C.T. (2006). Mist Net Survey of Bats with Three New Bat Species Records for Hong Kong. Hong Kong Biodiversity, 11, 1-7.
(3) McMillan, S. E., Wong, A. T. C., Tang, S. S. Y., Yau, E. Y. H., Gomersall, T., Wong, P. Y. H., …Bonebrake, T. C. (2022). Spraints Demonstrate Small Population Size and Reliance on Fishponds for Eurasian Otter (Lutra lutra) in Hong Kong. Conservation Science and Practice, 5(1).
(4) Shek, C.T., Chan, C.S.M., and Wan, Y.F. (2007) Camera Trap Survey of Hong Kong Terrestrial Mammals in 2002-06. Hong Kong Biodiversity, 15, 1-11.
(5) HKBWS (2024a). Hong Kong Bird Report 2018.
(6) HKBWS (2024b). Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2018-2023.
(7) Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study)

References on Conservation Status, Distribution, Rarity and other Notes:

(8) AFCD (2003) *Rare and Precious Plants of Hong Kong (Online Version)*. Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong. Available at: https://www.herbarium.gov.hk/en/publications/books/book2/index.html. Accessed on April 2024.
Status in China: VU = Vulnerable.
Categories: 1 = Species endemic to Hong Kong; 2 = Species that are native to Hong Kong and of national importance; 3 = Species that are native to Hong Kong and of importance in Guangdong; 4 = Native species that have important scientific interests or potential value in various uses, or those having small populations or sparse distribution in Hong Kong.
(9) Cap. 96: Forestry Regulations, the subsidiary legislation of Forests and Countryside Ordinance (Cap. 96A)
(10) Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
(11) RLCHP – Red List of China's Higher Plants (2020). EN = Endangered
(12) IUCN – International Union for Conservation of Nature Red List of Threatened Species (2023). VU = Vulnerable, EN = Endangered, CR = Critically Endangered.
(13) CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna
(14) Cap. 170: Protected under Wild Animals Protection Ordinance, all birds in Hong Kong are protected under Cap. 170

(15) Fellowes – Fellowes et al. (2002): PGC = Potential Global Concern, GC = Global Concern, PRC = Potential Regional Concern, RC = Regional Concern, LC = Local Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
(16) RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable, EN = Endangered.
(17) CSMPS – China State Major Protection Status: Appendix II
(18) AFCD refers to Chan et. al. (2011). A Review of the Local Restrictedness of Hong Kong Butterflies. Hong Kong Biodiversity 21: 1-12
(19) Reels – Reels. G. (2019): CI = Species of Conservation Importance
(20) Ballantyne et. Al. (2011). Pteroptyx maipo Ballantyne, a new species of bent-winged firefly (Coleoptera: Lampyridae) from Hong Kong, and its relevance to firefly biology and conservation. Zootaxa, 2931, 8-34.
(21) Yiu, V. (2011). A new species of firefly from Hong Kong – Pteroptyx maipo Ballantyne, 2011. Insect News (Hong Kong Entomological Society Newsletter), 3, 2-7.
(22) Yiu, V. (2017). A study of Rhagophthalmidae and Lampyridae in Hong Kong with descriptions of new species (Coleoptera): Part 2. Lampyrid 4: 59-111.
(23) Kwan, V. 2016. Present population and habitat status of potentially threatened Asian horseshoe crabs Tachypleus tridentatus and Carcinoscorpius rotundicauda in Hong Kong: a proposal for marine protected areas.
(24) Kwok, P.W., Yang, K.Y., Tong Y.F. and Lam C.P. (2005). Distribution of Seagrasses in Hong Kong. Hong Kong Biodiversity, 8, 12-14.
(25) Yip, K L and Lai, C C. (2006). Halophila minor (Hydrocharitaceae), a new record with taxonomic notes of the Halophila from the Hong Kong Special Administrative Region, China. Journal of Systematics and Evolution, 44(4)

7. IMPACT IDENTIFICATION AND EVALUATION

7.1 BRIEF PROJECT DESCRIPTION

The schematic design of the Project Site consists of two 1-storey blocks, Emergency Generator Room, FS Pump Room and FS Water Tank of ~616m^2 gross floor area in total. The two blocks accommodate FTIR Room, UPS Room, air monitoring equipment store room, VOC analyzer support room, a Server Room, etc.. There is outdoor equipment area on a reinforced concrete plinth to the south of the two blocks. Two pole-type transformers and electrical cut out will be set up to the west of Block A, while the two private car parking spaces are adjacent to Block B. Buildings structures would be one-storey with parapet and equipments installed on the rooftop. The channelized watercourse along the edge the Project Site will be excluded from the site boundary thus would not be directly impacted by the works. The preliminary layout plan of the Project is provided in ***Annex 13***.

The Project would typically operate unmanned on a 24 x 7 basis. The Project is not expected to produce noise, glare, and other emission during operation. Inspection and maintenance would be carried out during daytime on a need basis or at an expected frequency of not more than once a week.

Two (2) construction methods are proposed for the main building structure of the Project Site, namely in-situ construction and modular integrated construction (MiC) method. As the construction method is still being confirmed a conservative approach to ensure ecological impacts are adequately assessed is adopted. The following impact assessment is made under the assumption with the *in-situ* construction programme in which most structures will be built on site thus have a likelihood of a relatively higher level of on-site disturbances may occur.

7.2 IDENTIFICATION OF POTENTIAL ECOLOGICAL IMPACTS

The potential ecological impacts associated with the proposed Project during the construction and operational stage are predicted as follows.

- Potential ecological impacts during construction phase:
  - Impacts on recognized sites of conservation importance;
  - Habitat loss;
  - Potential direct impacts on flora and fauna species of conservation importance;
  - Indirect disturbances to the surrounding habitats and associated wildlife due to the construction works (e.g. increased human activities, noise and glare impacts); and
  - Indirect impacts (pollution) on mangrove or mudflat/coastal water body due to construction run-off.
- Potential ecological impacts during operational phase:
  - Habitat loss;

- Indirect disturbances to the surrounding habitats and associated wildlife due to operational activities; and
- Potential risk of bird collision due to aboveground buildings.

7.3 ASSESSMENT OF ECOLOGICAL IMPACTS

7.3.1 CONSTRUCTION PHASE

7.3.1.1 IMPACTS ON RECOGNISED SITES OF CONSERVATION IMPORTANCE

Several sites of conservation importance fell within close vicinity of Project Site, including wetland conservation area, Mai Po Inner Deep Bay Ramsar site, Mai Po Inner Deep Bay SSSI, and Tsim Bei Tsui SSSI. The Project Site lies within Wetland Buffer Area and Coastal Protection Area, thus the Project should comply with the "no-net-loss in wetland principle" under Town Planning Board Guideline PG. 12C. The principle of "no-net-loss" is defined that no decline in both "area" and "function" of the wetland should occur.

As habitat loss within these sites of conservation importance would be limited to plantation habitats, no wetlands (e.g. mangrove, fishpond) would be directly lost or impacted, thus the Project would comply with the "no-net-loss in wetland principle" in terms of "area" under Town Planning Board Guideline PG. 12C. The associated significance of impacts from habitat loss are discussed in ***Section 7.3.1.2***.

Indirect impacts induced by the Project would be anticipated to the wildlife inhabiting the sites, which included water pollution, noise, dust, waste generation, glare (particularly during nighttime) and visual disturbance to the ecologically important wetland and SSSIs nearby. The impact significance is **Low to Moderate** in the absence of mitigation measures.

Due consideration is also made on the potential impacts on the ecological "function" of the nearby wetlands due to indirect impact, especially as a source to provide abundant and accessible food and roosting grounds to avifauna and other species in accordance with the "no-net-loss in wetland principle".

Indirect disturbances to surrounding habitats and associated wildlife including those inhabiting the sites of conservation importance are assessed in ***Section 7.3.1.4***. The assessment on water pollution induced by potential construction site runoff will be discussed in ***Section 7.3.1.5***. The impact significance is anticipated to be **Low to Moderate** in the absence of mitigation measures.

With the aforementioned impacts adequately addressed it is expected that the loss in ecological "function" of affected wetland could be prevented or minimized, thus the Project would comply with the "no-net-loss in wetland principle" in terms of "function" under Town Planning Board Guideline PG. 12C.

7.3.1.2 HABITAT LOSS

Habitat loss arising from the proposed construction work for the supersite would be limited to the plantation within the Project Site as shown in ***Figure 5.1***. With rather

limited construction details, it is assumed that permanent clearance of vegetation within the Project Site would be in place.

Without reinstatement work in this area, it is assumed that permanent loss of ~0.31 ha of plantation will be anticipated. The plantation at the edge of habitat to be lost is of low to moderate ecological value which mainly consists of common landscaping or introduced afforestation species, though it is noted that mammal tracks of Small Indian Civet and Leopard Cat as well as a nesting site of Collared Scops Owl were recorded in the affected habitat, nevertheless, it is confirmed the nesting site is no longer active since May 2024. Further details on potential direct impacts on fauna species of conservation importance is discussed in ***Section 7.3.1.3***. No flora species of conservation importance will be affected by the Project.

The impact significance from the direct habitat loss caused by the Project is **Low to Moderate** for plantation. Assessment of potential direct impact on habitats within the Project Site in the absence of mitigation measures is detailed in ***Table 7-1*** below.

TABLE 7-1 POTENTIAL LOSS OF EXISTING HABITAT WITHIN THE PROJECT SITE

Criteria	Plantation
Habitat Quality	Low to Moderate
Species	Mammal: Small Indian Civet, Leopard Cat Avifauna: Collared Scops Owl with nesting behaviour
Size/Abundance	~0.31 ha, small in the context of Hong Kong Low to Moderate abundance and richness for avifauna, Low for other fauna species
Duration	Permanent loss of ~0.3 ha of plantation
Reversibility	Irreversible
Regional Significance	Low
Magnitude	Low
Overall Impact Severity	**Low to Moderate**

7.3.1.3 POTENTIAL DIRECT IMPACTS ON FLORA AND FAUNA SPECIES OF CONSERVATION IMPORTANCE

It should be noted that all of the identified individuals of flora species of conservation importance are located outside the Project Site. Therefore, no flora species of conservation importance is expected to be directly affected by the proposed works.

With reference to the literature review and the recent baseline survey, species of conservation importance recorded in close vicinity to the Project Site include Small Indian Civet, Leopard Cat and an inactive nesting site of Collared Scops Owl. For Small Indian Civet and Leopard Cat, as both species are of high mobility and that similar habitats are readily available adjacent to the Project Site, it is considered that they are

less susceptible to direct impacts induced by the proposed works, and hence the potential impact is of **Low** significance. Although a nesting site of Collared Scops Owl was observed within the Project Site, the nest is identified as inactive since May 2024. Collard Scops Owl might be affected in case of potential nest usage in plantation area within the Project Site where trees are expected to be felled, however, considering the Project Site is situated within a wider parcel of land with the same habitat and nearby young woodland, which are both suitable for Collared Scops Owl's usage, the loss of plantation is not expected to pose significant risk to Collard Scops Owl in the area and the potential impact is considered **Low to Moderate**. While a number of fauna species of conservation importance recorded in close vicinity to the Project Site based on previous studies and baseline survey including avifauna, mammal and butterfly species, these species are of mobility and not be susceptible to direct impact induced by the proposed works. Given that plantation is the primary habitat affected and that similar habitats are readily available in the vicinity of the Project Site, the affected area is considered to be of **Low to Moderate** significance to other potential fauna species of conservation importance in the vicinity.

7.3.1.4 INDIRECT DISTURBANCES TO SURROUNDING HABITATS AND ASSOCIATED WILDLIFE

The surrounding habitats adjacent to the Project Site could be indirectly impacted by the Project, due to construction-induced disturbances arising from the Project. Increased human activities (especially during the construction phase) would be the main source of disturbance accrued from the proposed works.

Noise, dust, waste generation, glare (particularly during night-time) and visual disturbance are predicted to occur during construction, which may arise from the construction activities at the Project Site. Habitats that are of particular concern include mangrove and mudflat/coastal water body.

Mangroves within the Assessment Area are considered to be of High ecological value. Based on previous studies, mangroves at Tsim Bei Tsui are breeding/nursery grounds for a firefly species of conservation importance namely, *Pteroptyx maipo*. As such the presence of artificial lighting at the construction site may result in a reduction in the density of its population in the area through disorientation from, and attraction to artificial light, and disruptive effects on their light-sensitive cycles thus affecting their breeding success. Though it is noted that due to the relative distance between the Project Site and mangrove habitat as well as the presence of existing lighting (i.e. lampposts along the border fence of Deep Bay Road) in close vicinity to mangrove suggesting a degree of tolerance of *Pteroptyx maipo* to artificial lighting, the overall impact of indirect disturbances on mangrove is considered to be of **Low to Moderate** significance.

Mudflat/Coastal Water Body within the Assessment Area are considered to be of high ecological value. Based on previous studies, a high abundance and diversity of avifauna species of conservation importance were recorded within the mudflats of Inner Deep Bay. Disturbances can result in a reduction of faunal population in the area through

disorientation from artificial light, and disruptive effects on the light-sensitive cycles of light sensitive/nocturnal species. This can affect migration, foraging/predation and breeding success of species. Potential disturbance by construction noise and increased human activities may also cause wildlife to avoid using areas adjacent to the Project Site, and thereby reduce wildlife density in the area. Though considering the relative distance between the Project Site and mudflat/coastal water body and that the fauna recorded in the Assessment Area were of some degree of tolerance to nuisance from existing nearby human activities due to close vicinity to village area and developed area, therefore, indirect disturbances induced by the construction works would not have significant impact to mudflat/coastal water body and associated wildlife. These potential impacts are thus expected to be **Low to Moderate**.

Woodland and plantation within the Assessment Area are evaluated as **Low to Moderate** ecological value. Based on the reviewed information and the survey findings, some mammal and avifauna species of conservation importance were recorded within the woodland and plantation habitats within the Assessment Area. Disturbances can result in a reduction of faunal population in the area through disorientation from artificial light, and disruptive effects on the light-sensitive cycles of light sensitive/nocturnal species, particularly due to close vicinity of species recorded from or within the Project Site. This can affect migration, foraging/predation and breeding success of species. Potential disturbance by construction noise and increased human activities may also cause wildlife to avoid using areas within or adjacent to the Project Site and thereby reducing wildlife density in the area. However, considering the species of conservation importance recorded within the area being highly mobile and possess some degree of tolerance to nuisance from existing nearby human activities, such as noise and light pollution from the Deep Bay Road, indirect disturbances induced by the construction works would not have unacceptable impact to the woodland and plantation habitats in the Assessment Area and the associated wildlife. These potential impacts are thus expected to be **Low to Moderate**.

While for other habitats, based on findings from the baseline ecological survey and literature review, fauna recorded in the vicinity of the Project Site are mobile and able to move to the other similar habitats, which are larger in size and with better habitat quality. Furthermore, the fauna recorded in the Assessment Area exhibited some degree of tolerance to nuisance from existing nearby human activities due to close vicinity to village area and developed area, therefore, indirect disturbances induced by the construction works would not have significant impact to surrounding habitats and associated wildlife. These potential impacts are thus expected to be **Low**.

In the absence of mitigation measures, the above-mentioned disturbance impacts on surrounding habitats and associated wildlife are evaluated in ***Table 7-2*** below.

TABLE 7-2 POTENTIAL DISTURBANCE TO NEARBY HABITATS WITHIN THE ASSESSMENT AREA

Habitat Type	**Woodland**	**Plantation**	**Shrubland**	**Seasonally Wet Grassland**	**Watercourse**	**Fishpond**	**Mangrove**	**Village Area**	**Developed Area**	**Mudflat/Coastal Water Body**
Habitat Quality	Low to Moderate	Low to Moderate	Low to Moderate	Low	Low	Low to Moderate	High	Low	Low	High
Species	Total of 6 species of conservation importance recorded during baseline survey including 1 flora, 2 mammal and 3 avifauna species	Total of 6 species of conservation importance recorded during baseline survey including 1 flora, 3 mammal and 2 avifauna species.	Total of 2 species of conservation importance recorded during baseline survey including 1 flora species and 1 avifauna species	No species of conservation importance recorded during baseline survey	No species of conservation importance recorded during baseline survey	No species of conservation importance recorded during baseline survey	Total of 12 species of conservation importance recorded during baseline survey, 9 avifauna and 2 odonate species and 1 firefly species Potential habitat for *Pteroptyx maipo* based on literature	No species of conservation importance recorded during baseline survey	No species of conservation importance recorded during baseline survey	Total of 56 species of conservation importance recorded during baseline survey, all are avifauna species
Size/Abundance	~3.97 ha Low to Moderate abundance and richness of avifauna; low diversity of other fauna groups	~6.06 ha Low to Moderate abundance and richness of avifauna; low diversity of other fauna groups	~10.42 ha Low abundance and richness for all fauna groups	~0.53 ha Low abundance and richness for all fauna groups	~984m Low abundance and richness for all fauna groups	~0.77 ha Low abundance and richness for all fauna groups	~18.61 ha Low to Moderate abundance and richness of avifauna, low for other fauna groups	~3.92 ha Low abundance and richness for all fauna groups	~10.85 ha Low abundance and richness for all fauna groups	~42.02 ha High abundance and richness of avifauna, low for other fauna groups
Duration	Last during working hours in construction phase									
Reversibility	Reversible, disturbance will be ceased once works stopped/ completed									
Regional Significance	Low	Low	Low	Low	Low	Low	Moderate to High	Low	Low	High
Magnitude	Low to Moderate	Low to Moderate	Low	Low	Low	Low	Low to Moderate	Low	Low	Low to Moderate
Overall Impact Severity	**Low to Moderate**	**Low to Moderate**	**Low**	**Low**	**Low**	**Low**	**Low to Moderate**	**Low**	**Low**	**Low to Moderate**

7.3.1.5 INDIRECT IMPACT (POLLUTION) ON MANGROVE OR MUDFLAT/COASTAL WATER BODY DUE TO CONSTRUCTION RUN-OFF

During construction phase, site runoff from the construction works may contain suspended solids and contaminants if uncontrolled. Potential sources of uncontrolled site runoff may include runoff and erosion of exposed bare soil, earth and stockpiles, fuel, oil, and lubricant from maintenance of construction mechanical equipment. Water pollution could be substantial if construction runoff is allowed to discharge without mitigation, in particular, if the runoff is discharged to the nearby mangrove and mudflat/coastal water body in downslope areas or through connected watercourses, which supports diverse range of avifauna of conservation importance as well as intertidal species communities which serves as an important food source for many wetland-dependent avifauna species. These polluted runoffs could result in physical and biological disruption of the area's ecosystem. Taking into account the small scale of the construction works and the Project Site are relatively far from the existing ecologically sensitive habitats (e.g. mangrove, in the absence of mitigation measures, the impact of potential water pollution caused by the Project is considered to be of **Low to Moderate** significance. The impacts discussed above would be ceased immediately upon completion of construction works.

7.3.2 OPERATIONAL PHASE

7.3.2.1 INDIRECT DISTURBANCES TO THE SURROUNDING HABITATS AND ASSOCIATED WILDLIFE

Disturbances from construction activities would be ceased upon completion of works. Although the Project would operate on a 24 x 7 basis, human activities on site would be infrequent and limited to inspection and maintenance carried out during daytime on a need basis or at an expected frequency of not more than once a week. In addition, no noise, glare, and other emission are anticipated during operation. Limited disturbance to adjacent habitats and associated wildlife would be anticipated. Moreover, the Project Site located at the edge of plantation near the road where human disturbance already exists, wildlife inhabiting nearby are expected to be tolerant to minor increase in disturbances from operational activities. Thus, level of disturbance is expected to be **Low**. It is expected that no decline in both "area" and "function" of the wetland would occur during the operational phase, thus the Project would comply with the "no-net-loss in wetland principle" under Town Planning Board Guideline PG. 12C.

7.3.2.2 POTENTIAL RISK OF BIRD COLLISION DUE TO ABOVEGROUND BUILDINGS

Aboveground structures would be present atop the Project Site. Since there is possibility of overlap between the flight height of avifauna, particularly migratory avifauna species and the facilities, there may be increase potential risk of bird collision. It is noted that the building structures would be one-storey with parapet and equipment installed on the rooftop. Based on existing observation, no major flightline was identified overlapping with the Project Site. The flightlines majorly adopted by birds (majorly waterbirds) were along the coastal area. As such the impacts related to increased potential risk of bird collision associated with project is considered to be **Low** during operational phase.

8. CUMULATIVE IMPACTS

No concurrent project, of which the construction programme would have overlapped with this Project, is identified within the Assessment Area to date, therefore, cumulative impact is not anticipated for this Project.

9. MITIGATION AND PRECUATIONARY MEASRUES

Based on the ecological impacts predicted in ***Section 7***, mitigation measures to avoid, minimise or compensate (if necessary) for the potential significant impacts are detailed below. In line with the EIAO-TM, ways to avoid impacts were identified and followed wherever possible during the planning and design stage (i.e. avoiding encroaching ecologically sensitive habitats within sites of conservation importance). If, despite taking all appropriate design measures of avoidance and minimisation, potential ecological impacts of greater than "**Low**" significance are still anticipated, further mitigation measures are considered necessary to reduce these impacts to an acceptable level. Moreover, to achieve a better ecological performance, precautionary measures are proposed under this project for certain potential ecological impacts that are not considered to be significant.

In order to minimise the potential disturbances arising the project, good site/ construction practice and housekeeping measures will be adopted. Mitigation measures and good construction practices are recommended below.

9.1 AVOIDANCE OF ECOLOGICALLY SENSITIVE HABITATS WITHIN SITES OF CONSERVATION IMPORTANCE

The Project Site is mainly situated within plantation of wetland buffer area and coastal protection area. Therefore, the Project site has avoided encroaching into ecologically sensitive habitats such as mangrove and mudflat/coastal water body within Mai Po Inner Deep Bay Ramsar Site, SSSIs, Wetland Conservation Area or other ecologically sensitive receivers.

9.2 MINIMISATION OF HABITAT LOSS

In general, replanting within the Project Site wherever possible would be implemented upon the completion of the construction works to reinstate the affected area to condition similar to original status, and such rehabilitation works should use native plants that occur in the adjacent plantation habitat as far as possible and have flowers/fruits attractive to wildlife. It is also suggested to minimize the extent of vegetation clearance and retain trees wherever possible. Further discussion on precautionary measures for the nesting site of Collared Scops Owl is detailed in ***Section 9.3***.

9.3 MEASURES ON PROTECTION OF FAUNA SPECIES OF CONSERVATION IMPORTANCE

As discussed in ***Section 7.3.1.3***, fauna species of conservation importance recorded within the Project Site include Small Indian Civet, Leopard Cat and Collared Scops Owl.

In view of the mobility of Small Indian Civet and Leopard Cat and the availability of similar quality habitats in the vicinity, no specific measures are necessary in view of the low potential impact.

On the other hand, for Collared Scops Owl, as a nesting site was recorded within the Project site, even though considered inactive since May 2024, to avoid potential direct impacts, a pre-construction site check should be conducted to confirm if there is any active nest of Collared Scops Owl for the trees to be directly impacted by the Project prior to the commencement of construction works.

Should any nesting behavior (i.e. incubation, parental care, presence of juveniles) of Collared Scops Owl be recorded, construction works near the vicinity of the nesting site should be temporarily suspended considering that bird nests or egg are protected under Cap. 170 Wild Animals Protection Ordinance. The record of active bird nest shall be reported to AFCD and the procedure on monitoring of nesting site and resumption of construction works shall be further discussed and agreed with AFCD.

9.4 MEASURES FOR INDIRECT DISTURBANCES TO SURROUNDING HABITATS AND ASSOCIATED WILDLIFE

The following construction phase mitigation measures are proposed to reduce predicted disturbance impacts and impact of water pollution to an acceptable level:

- The boundary of the Project Site will be clearly marked by temporary fence. The works area boundaries will be regularly checked to ensure that they are not breached and that no damage occurs to surrounding habitat;
- Regularly check the site boundaries to ensure that they are not breached and that no damage occurs to surrounding ecologically sensitive habitats (e.g. mangrove);
- Avoid any damage and disturbance, particularly those caused by filling and illegal dumping to the surrounding natural habitats;
- Prohibit and prevent open fires within the works area boundary during construction and provide temporary firefighting equipment in the work areas;
- Good site practice will be enforced and effective mitigation measures are required. Works site will be kept tidy at all times. Accumulation of construction waste and general refuse will not be allowed;
- Strong artificial lighting should not be used in the Project Site to minimize disturbance to fauna, especially fireflies. Lighting required for safety purpose should keep minimal and pointed inward. Lighting periods should be controlled during the adult flight period of *Pteroptyx maipo* (March –October) to minimize potential impacts on fireflies. Any unnecessary artificial light sources should be switched off before sunset between March and October. Clear signs should be erected on site to alert all site staff and workers about the requirements;
- Encouraging the usage of non-transparent or non-glaring materials to the best extent for the design and construction of the site it could help minimize the potential risks of bird collision;

- As a precautionary measure, construction activities under the Project during night-time from 19:00 to 07:00 will be avoided to minimize disturbance to wildlife;
- In addition to avoiding construction works during 19:00 to 07:00, noisy construction works will be ceased at least an hour before sunset, and commence construction works at least an hour after sunrise on the following day, referring to the time of sunrise and sunset from the Hong Kong Observatory;
- To further minimize noise impacts to wildlife in surrounding habitats, temporary noise barriers/screens will be implemented during construction;
- Adopt appropriate measures including controlled wastewater discharge to the nearby water bodies, in accordance with the guidelines stipulated in Environmental Protection Department (EPD)'s Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN2/23) during the construction works to properly control site run-off and drainage and to minimise potential water quality impacts;
- In the event of rain or at any time when rainstorms are likely to happen, exposed surfaces within the works area should be covered by tarpaulin or by other means.

10. RESIDUAL ECOLOGICAL IMPACTS

Table 10-1 summarises the potential ecological impacts of the Project, the impacts that require mitigation, the mitigation measures to be carried out and the residual impacts after mitigation. With the implementation of proposed mitigation measures described in ***Section 9***, residual impacts of the Project would be reduced to **Low**.

TABLE 10-1 EVALUATION OF RESIDUAL IMPACTS AFTER IMPLEMENTATION OF MITIGATION MEASURES

Potential Impact	Predicted Significance of Impact in Absence of Mitigation Measures	Proposed Mitigation/Precautionary Measures	Residual Impact
Construction Phase			
Impacts on recognised sites of conservation importance	Low to Moderate	• Avoidance of ecologically sensitive habitats will be adopted and the Project Site would be limited to plantation habitats within Wetland Buffer Area and Coastal Protection Area. • Adoption mitigation measures for indirect disturbance to surrounding habitat and associated wildlife recommended in ***Section 9.4***.	Low
Habitat loss (Plantation)	Low to Moderate	• Minimization of vegetation clearance of plantation area, and adopt appropriate mitigation measures for nesting site of Collared Scops Owl, as discussed in ***Section 7.3.1.3***.	Low
Potential direct impacts on flora species of conservation importance	Negligible	• No flora species of conservation importance is expected to be directly affected by the proposed works	Negligible
Potential direct impacts on fauna species of conservation importance	Low to Moderate for fauna species of conservation importance	• Although nesting site of Collared Scops Owl is identified to be inactive, a pre-construction site check should be conducted to confirm if there is any active nest of Collared Scops Owl for the trees to be directly impacted by the Project prior to the commencement of construction works. If nesting activity of Collared Scops Owl is confirmed, procedures of a monitoring plan and conditions to resumption of construction works should be confirmed with AFCD. • Construction activities under the Project during night-time from 19:00 to 07:00 will be avoided to minimize disturbance to wildlife. • In addition to avoiding construction works during 19:00 to 07:00, noisy construction works will be ceased at least an hour before sunset, and commence construction works at least an hour after	Low

Potential Impact	Predicted Significance of Impact in Absence of Mitigation Measures	Proposed Mitigation/Precautionary Measures	Residual Impact
		sunrise on the following day, referring to the time of sunrise and sunset from the Hong Kong Observatory.	
Indirect disturbances to surrounding habitats and associated wildlife	Low to Moderate for mangrove, plantation, woodland, and mudflat/coastal water body; Low for other habitats	• The boundary of the Project Site will be clearly marked by temporary fence. The works area boundaries will be regularly checked to ensure that they are not breached and that no damage occurs to surrounding habitat; • Regularly check the site boundaries to ensure that they are not breached and that no damage occurs to surrounding ecologically sensitive habitats (e.g. mangrove); • Avoid any damage and disturbance, particularly those caused by filling and illegal dumping to the surrounding natural habitats; • Prohibit and prevent open fires within the works area boundary during construction and provide temporary firefighting equipment in the work areas; • Good site practice will be enforced and effective mitigation measures are required. Works site will be kept tidy at all times. Accumulation of construction waste and general refuse will not be allowed; • Strong artificial lighting should not be used in the Project Site to minimize disturbance to fauna, especially fireflies. Lighting required for safety purpose should keep minimal and pointed inward. Lighting periods should be controlled during the adult flight period of *Pteroptyx maipo* (March –October) to minimize potential impacts on fireflies. Any unnecessary artificial light sources should be switched off before sunset between March and October. Clear signs should be erected on site to alert all site staff and workers about the requirements; • Encouraging the usage of non-transparent or non-glaring materials to the best extent for the design and construction of the site it could help minimize the potential risks of bird collision; • As a precautionary measure, construction activities under the Project during night-time from 19:00 to 07:00 will be avoided to minimize disturbance to wildlife;	Low

Potential Impact	Predicted Significance of Impact in Absence of Mitigation Measures	Proposed Mitigation/Precautionary Measures	Residual Impact
		• In addition to avoiding construction works during 19:00 to 07:00, noisy construction works will be ceased at least an hour before sunset, and commence construction works at least an hour after sunrise on the following day, referring to the time of sunrise and sunset from the Hong Kong Observatory; • To further minimize noise impacts to wildlife in surrounding habitats, temporary noise barriers/screens will be implemented during construction.	
Indirect impact (pollution) on mangrove or mudflat/coastal water body due to construction run-off	Low to Moderate	• Adopt appropriate measures including controlled wastewater discharge to the nearby water bodies, in accordance with the guidelines stipulated in Environmental Protection Department (EPD)'s Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN2/23) during the construction works to properly control site run-off and drainage and to minimise potential water quality impacts; • In the event of rain or at any time when rainstorms are likely to happen, exposed surfaces within the works area should be covered by tarpaulin or by other means.	Low
Operational Phase			
Indirect disturbances to surrounding habitats and associated wildlife	Low	• Implementation of good site practices to control environmental nuisance to air quality, noise and water quality.	Low
Potential risk of bird collision due to aboveground buildings	Low	• Implementation of good site practices such as the usage of non-transparent or non-glaring materials could help minimize the potential risks of bird collision.	Low

11. CONCLUSION

The key terrestrial ecological resources recorded within the Assessment Area comprised of woodland (young), plantation, shrubland, seasonally wet grassland, watercourse, fishpond, mangrove, village area, developed area and mudflat/coastal water body, where the Project Site will be restricted to plantation for the proposed works. Majority of the habitat to be directly affected are the plantation area that is semi-natural in nature mainly consisting of exotic landscaping/afforestation species. A nesting site of Collared Scops Owl was spotted at plantation within the Project Site (see ***Figure 5.1***), but the nesting site is later confirmed to be inactive. Based on the conservative assumption, the Project would result in a permanent loss of ~0.31 ha of plantation of **Low to Moderate** ecological value.

Given that the habitat nature within the Project Site is anthropogenic with some degree of human disturbance, the impact significance for habitat loss is considered to be **Low to Moderate** for plantation and **Low** for watercourse. Although a nesting site of Collared Scops Owl was observed at plantation within the Project Site, it was identified to be inactive since May 2024 and considering the availabilty of trees in the vicinity for Collard Scops Owl to nest, direct impact to the species would be of **Low to Moderate** significance. The impact significance of indirect impact to surrounding habitats and associated wildlife ranged from **Low** to **Low to Moderate**. Potential risk of bird collision due to aboveground buildings is of **Low to Moderate** significance. While the rest of the impacts to ecological resources would have **Low/negligible** impact significances as assessed. Due consideration has been made to avoid and minimize impacts to ecologically sensitive habitats such as mangrove and mudflat/coastal water body.

With the implementation of the proposed mitigation and precautionary measures, residual ecological impacts of the Project would be acceptable, no decline in both "area" and "function" of the wetland would occur during both construction and operation phase, thus the Project would comply with the "no-net-loss in wetland principle" under Town Planning Board Guideline PG. 12C.

ANNEXES

Woodland (Young)

Plantation

Shrubland

Seasonally Wet Grassland

Semi-natural Watercourse

Channelized Watercourse

Annex 1

Representative Photos of Habitats within the 500m Assessment Area

DATE: 15/5/2024

ERM

Fishpond

Mangrove

Village Area

Developed Area

Mudflat/Coastal Water Body

Annex 1

Representative Photos of Habitats within the 500m Assessment Area

DATE: 15/5/2024

ERM

Annex 2 Relative Abundance of Plant Species Recorded Within the Assessment Area

Item No.	Species Name	Chinese Name	Origin[1]	Growth Form	Distribution in Hong Kong[2]	Protection/Conservation Status[2]	Habitat[3] 500m Assessment Area										
							WL	PL	SL	SWG	VA	DA	SWC	CWC	PO	MG	MF
1	*Acacia confusa*	台灣相思	E	Tree	very common	-		++++	++								
2	*Acacia mangium*	大葉相思	E	Tree	very common	-		+++									
3	*Acanthus ilicifolius*	老鼠簕	N	Shrub	common	-										+++	+
4	*Acanthus ilicifolius var. xiamenensis*	廈門老鼠簕	N	Herb	common	-										++	
5	*Adenosma glutinosum*	毛麝香	N	Herb	very common	-			++								
6	*Adinandra millettii*	黃瑞木	N	Tree/Shrub	common	-	+	+									
7	*Ageratum houstonianum*	熊耳草	E	Herb	common	-			+								
8	*Aglaia odorata var. microphyllina*	小葉米仔蘭	E	Tree/Shrub	very common	-					++	++					
9	*Albizia lebbeck*	大葉合歡	E	Tree	very common	-						++					
10	*Aleurites moluccana*	石栗	E	Tree	common	-					++	++					
11	*Alocasia macrorrhizos*	海芋	N	Herb	very common	-	++			++	+	+	+++		++		
12	*Alternanthera paronychioides*	星星蝦鉗菜	E	Herb	common	-				++	+						
13	*Alysicarpus vaginalis*	鏈荚豆	N	Herb	very common	-					++	++					
14	*Antidesma ghaesembilla*	方葉五月茶	N	Tree	common	-			++								
15	*Aporosa dioica*	銀柴	N	Tree	very common	-	+++	++++									
16	*Aquilaria sinensis*	土沉香	N	Tree	common	Protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586); China Plant Red Data Book: VU; Status in China: Wild plant under State protection (category II). Recorded in China Plant Red Data Book andIllustration of Rare & endangered plant in Guangdong Province. (AFCD, 2003); Category 2 & 3 (AFCD, 2003); RLCHP: EN; IUCN(VU); CITES(II)	++	+	++								
17	*Ardisia lindleyana*	山血丹	N	Shrub	common	-	+										
18	*Artocarpus heterophyllus*	菠蘿蜜	E	Tree	common	-					++						
19	*Asystasia micrantha*	小花十萬錯	E	Herb	cultivated or naturalised	-					++	+++					
20	*Atriplex maximowicziana*	海濱藜	N	Herb	-	-										++	+++
21	*Baeckea frutescens*	崗松	N	Tree/Shrub	very common	-			++++								
22	*Bambusa beecheyana*	吊絲球竹	E	Bamboo	-	-	++										
23	*Bauhinia championii*	缺葉藤	N	Climber	common	-	+										
24	*Berchemia floribunda*	多花勾兒茶	N	Climber	common	-		+++									
25	*Bidens alba*	白花鬼針草	E	Herb	very common	-		+++	++++	++++	++++	++++			+		
26	*Bischofia javanica*	秋楓	N	Tree	common	-	++										
27	*Blechnum orientale*	烏毛蕨	N	Herb	very common	-		+++	++								
28	*Bombax ceiba*	木棉	E	Tree	very common	-	++										
29	*Bougainvillea spectabilis*	簕杜鵑	E	Climber/Shrub	cultivated	-					+++	++					
30	*Brachiaria mutica*	巴拉草	E	Herb	common	-				++++					++		
31	*Bridelia tomentosa*	土蜜樹	N	Tree/Shrub	very common	-	++	++	+++		+++	+++					
32	*Brucea javanica*	鴉膽子	N	Tree/Shrub	common	-	++	++	+								
33	*Calliandra haematocephala*	朱纓花	E	Shrub	common	-					+						
34	*Callicarpa nudiflora*	裸花紫珠	N	Tree/Shrub	common	-		++									
35	*Canarium album*	白欖	E	Tree	restricted; in Fung Shui Woods; may have been introduced to Hong Kong but in some places appears truly wild	-	+										
36	*Cansjera rheedii*	山柑藤	N	Climber/Shrub	restricted	-			+++								
37	*Carica papaya*	番木瓜	E	Tree	common	-					++						
38	*Cassytha filiformis*	無根藤	N	Climber	very common	-	++	+									
39	*Cayratia corniculata*	角花烏蘞莓	N	Climber	very common	-					++	+++					
40	*Celtis sinensis*	朴樹	N	Tree	common	-	+++		++		++	+	+				
41	*Celtis timorensis*	假肉桂	N	Tree	restricted	-	+										
42	*Chenopodium acuminatum subsp. virgatum*	狹葉尖頭葉藜	N	Herb	common	-										++	+
43	*Chenopodium album*	藜	N	Herb	restricted	-				++							
44	*Cinnamomum burmannii*	陰香	N	Tree	very common	-	++										
45	*Cinnamomum camphora*	樟	N	Tree	common	-	++	++									
46	*Colocasia esculenta*	芋	N	Herb	common	-				+							
47	*Commelina benghalensis*	飯包草	N	Herb	restricted	-	+										
48	*Cratoxylum cochinchinense*	黃牛木	N	Tree/Shrub	very common	-			++								
49	*Croton crassifolius*	雞骨香	N	Shrub	very common	-			+++								
50	*Cuscuta campestris*	田野菟絲子	N	Herb	common	-			+++	+	+						
51	*Cyclosorus interruptus*	間斷毛蕨	N	Herb	very common	-				++							
52	*Cyclosorus parasiticus*	華南毛蕨	N	Herb	very common	-	++	++									
53	*Cyperus involucratus*	風車草	E	Herb	common	-				++							
54	*Dalbergia benthamii*	兩廣黃檀	N	Climber	common	-	+										
55	*Dalbergia hancei*	藤黃檀	N	Climber	common	-	+		++								
56	*Derris trifoliata*	魚藤	N	Climber/Shrub	common	-										++	
57	*Desmodium heterocarpon*	假地豆	N	Shrub	very common	-	++		++								

Annex 2 Relative Abundance of Plant Species Recorded Within the Assessment Area

Item No.	Species Name	Chinese Name	Origin[1]	Growth Form	Distribution in Hong Kong[2]	Protection/Conservation Status[2]	Habitat[3] 500m Assessment Area										
							WL	PL	SL	SWG	VA	DA	SWC	CWC	PO	MG	MF
58	*Desmodium reticulatum*	顯脈山綠豆	N	Shrub	restricted	-	++	+									
59	*Desmos chinensis*	假鷹爪	N	Climber/Shrub	common	-	+++	+++									
60	*Dianella ensifolia*	山菅蘭	N	Herb	very common	-	+++	+++	+++								
61	*Dicranopteris pedata*	芒萁	N	Herb	very common	-	+++	++	+++								
62	*Digitaria sanguinalis*	馬唐	N	Herb	common	-					+						
63	*Dimocarpus longan*	龍眼	E	Tree	restricted	RLCHP: VU; Wild plant under State protection (category II)[4]	+				++						
64	*Dioscorea bulbifera*	黃獨	N	Climber	common	-	++										
65	*Diploclisia glaucescens*	蒼白秤鉤風	N	Climber	common	-	+++										
66	*Diplospora dubia*	狗骨柴	N	Tree/Shrub	common	-	++										
67	*Drymaria cordata*	荷蓮豆	N	Herb	common	-				++	++						
68	*Duranta erecta*	假連翹	E	Climber/Shrub	common	-					+						
69	*Elephantopus scaber*	地膽草	N	Herb	common	-		+++									
70	*Eleusine indica*	牛筋草	N	Herb	very common	-					+						
71	*Embelia laeta*	酸藤子	N	Climber/Shrub	very common	-	++										
72	*Emilia sonchifolia*	一點紅	N	Herb	very common	-					++	+++	++				
73	*Eragrostis tenella*	鯽魚草	N	Herb	very common	-	++	++									
74	*Eriosema chinense*	雞頭薯	N	Herb	common	-		++	+								
75	*Eucalyptus citriodora*	檸檬桉	E	Tree	common	-		+++									
76	*Euphorbia hirta*	飛揚草	E	Herb	very common	-					+++	+++					
77	*Euphorbia thymifolia*	千根草	N	Herb	common	-					+++	+++					
78	*Eurya chinensis*	米碎花	N	Shrub	very common	-			+++								
79	*Excoecaria agallocha*	海漆	N	Tree	common	-										+++	
80	*Ficus hirta*	粗葉榕	N	Tree/Shrub	common	-		++	++								
81	*Ficus hispida*	對葉榕	N	Tree/Shrub	very common	-						++	+				
82	*Ficus microcarpa*	細葉榕	N	Tree	common	-	++				++	++					
83	*Ficus pumila*	薜荔	N	Climber	very common	-					++	++	++				
84	*Ficus variegata*	青果榕	N	Tree	common	-						+					
85	*Gahnia tristis*	黑莎草	N	Herb	very common	-		++									
86	*Glochidion eriocarpum*	毛果算盤子	N	Tree/Shrub	very common	-			++								
87	*Gnetum parvifolium*	小葉買麻藤	N	Climber	common	-		++	++								
88	*Gymnanthera oblonga*	海島藤	N	Climber	common	-										++	
89	*Hedyotis corymbosa*	傘房花耳草	N	Herb	very common	-			++								
90	*Hedyotis hedyotidea*	牛白藤	N	Climber/Shrub	very common	-	++										
91	*Hibiscus rosa-sinensis*	大紅花	E	Shrub	very common	-					+	++					
92	*Hibiscus tiliaceus*	黃槿	N	Tree	very common	-										+++	
93	*Homalium cochinchinense*	天料木	N	Tree/Shrub	common	-			++								
94	*Hypserpa nitida*	夜花藤	N	Climber	very common	-	++										
95	*Ilex asprella*	梅葉冬青	N	Shrub	very common	-	+++	+++									
96	*Imperata cylindrica var. major*	大白茅	N	Herb	common	-						++					
97	*Indocalamus sinicus*	水銀竹	N	Bamboo	very common	-		++									
98	*Ipomoea cairica*	五爪金龍	E	Herb	very common	-				+++	++	++			++		
99	*Ipomoea triloba*	三裂葉薯	E	Herb	very common	-						++					
100	*Kandelia obovata*	秋茄樹	N	Tree	common	-										++++	
101	*Kyllinga nemoralis*	單穗水蜈蚣	N	Herb	very common	-				+							
102	*Lantana camara*	馬纓丹	E	Shrub	very common	-	++	+			++	++					
103	*Lemmaphyllum microphyllum*	伏石蕨	N	Herb	common	-	++										
104	*Leucaena leucocephala*	銀合歡	E	Tree/Shrub	very common	-	++	+++		+++	++++	++++			++		
105	*Ligustrum sinense*	山指甲	E	Tree/Shrub	common	-	++				+++	+++					
106	*Lindernia anagallis*	長蕊母草	N	Herb	very common	-			++								
107	*Lindernia antipoda*	泥花草	N	Herb	common	-			++								
108	*Lindernia crustacea*	母草	N	Herb	common	-				++							
109	*Lindsaea ensifolia*	劍葉鱗始蕨	N	Herb	common	-	+++										
110	*Lindsaea heterophylla*	異葉鱗始蕨	N	Herb	common	-	++										
111	*Lindsaea orbiculata*	團葉鱗始蕨	N	Herb	very common	-	+++										
112	*Liquidambar formosana*	楓香	N	Tree	common	-		++									
113	*Liriope spicata*	山麥冬	N	Herb	very common	-	+++	+++									
114	*Litchi chinensis*	荔枝	E	Tree	restricted but widely planted	RLCHP: EN[4]	+				+						
115	*Litsea cubeba*	木薑子	N	Tree/Shrub	common	-		++	+								
116	*Litsea glutinosa*	潺槁	N	Tree	very common	-			++								
117	*Litsea rotundifolia var. oblongifolia*	豺皮樟	N	Tree/Shrub	very common	-	++	++	++								
118	*Lophostemon confertus*	紅膠木	E	Tree	very common	-		++++	+++								
119	*Ludwigia hyssopifolia*	草龍	N	Herb	very common	-				+					++		
120	*Ludwigia octovalvis*	毛草龍	N	Herb	very common	-				++							
121	*Lygodium japonicum*	海金沙	N	Climber/Herb	very common	-		+++	++	++							
122	*Macaranga tanarius var. tomentosa*	血桐	N	Tree	common	-	+++	++		++	+	+			++		
123	*Macroptilium lathyroides*	大翼豆	E	Herb	common	-			++		+						
124	*Mallotus paniculatus*	白楸	N	Tree/Shrub	very common	-	+++										
125	*Mallotus repandus*	石岩楓	N	Climber/Shrub	common	-	++		+								
126	*Melastoma dodecandrum*	地茶	N	Herb/Shrub	common	-	++	++	++								
127	*Melastoma malabathricum*	野牡丹	N	Shrub	common	-	++	++									

Annex 2 Relative Abundance of Plant Species Recorded Within the Assessment Area

Item No.	Species Name	Chinese Name	Origin[1]	Growth Form	Distribution in Hong Kong[2]	Protection/Conservation Status[2]	Habitat[3] 500m Assessment Area										
							WL	PL	SL	SWG	VA	DA	SWC	CWC	PO	MG	MF
128	*Melia azedarach*	苦楝	E	Tree	common	-	+++										
129	*Melicope pteleifolia*	三桠苦	N	Tree/Shrub	common	-	+	++									
130	*Melinis repens*	紅毛草	E	Herb	very common	-					+++	+++					
131	*Microcos nervosa*	破布葉	N	Tree/Shrub	very common	-	++	++									
132	*Microstegium ciliatum*	剛莠竹	N	Herb	very common	-	+++						++				
133	*Mikania micrantha*	薇甘菊	E	Climber/Herb	very common	-			++	+++	++++	++++	++		++++		
134	*Mimosa pudica*	含羞草	E	Herb	common	-			++								
135	*Miscanthus sinensis*	芒	N	Herb	very common	-			+++								
136	*Morinda parvifolia*	雞眼藤	N	Climber/Shrub	very common	-		++	++								
137	*Murraya paniculata*	九里香	E	Tree	common	-						++					
138	*Mussaenda pubescens*	玉葉金花	N	Climber/Shrub	very common	-	+++	++	++								
139	*Oxalis corniculata*	酢漿草	N	Herb	very common	-					+	+					
140	*Oxalis debilis subsp. Corymbosa*	紅花酢漿草	E	Herb	common	-					++	++					
141	*Oxyceros sinensis*	雞爪簕	N	Tree/Shrub	common	-	+										
142	*Paederia scandens*	雞矢藤	N	Herb	very common	-				++							
143	*Panicum maximum*	大黍	E	Herb	very common	-					++++	++++					
144	*Passiflora foetida*	龍珠果	E	Climber	very common	-			++								
145	*Pennisetum purpureum*	象草	E	Herb	common	-									++		
146	*Persicaria chinensis*	火炭母	N	Herb	very common	-				++							
147	*Phyllanthus cochinchinensis*	越南葉下珠	N	Shrub	very common	-		++									
148	*Phyllanthus emblica*	餘甘子	N	Tree/Shrub	very common	-	++	+++									
149	*Phyllanthus reticulatus*	小果葉下珠	N	Shrub	common	-	+++	+			+++	+++					
150	*Phyllanthus urinaria*	葉下珠	N	Herb	common	-		+									
151	*Phyllodium pulchellum*	排錢草	N	Shrub	very common	-			++								
152	*Pilea microphylla*	小葉冷水花	E	Herb	very common	-					++	++					
153	*Pinus elliottii*	濕地松	E	Tree	very common	-	+++	++									
154	*Piper hancei*	山蔴	N	Climber	common	-	+++										
155	*Plantago major*	車前草	N	Herb	common	-			+								
156	*Pluchea indica*	闊苞菊	N	Shrub	common	-										++	
157	*Plumeria rubra*	雞蛋花	E	Tree	very common	-					++						
158	*Polyspora axillaris*	大頭茶	N	Tree/Shrub	very common	-		+	+++								
159	*Portulaca oleracea*	馬齒莧	N	Herb	very common	-				+							
160	*Pouzolzia zeylanica*	霧水葛	N	Herb	common	-					++						
161	*Premna serratifolia*	傘序臭黃荊	N	Tree/Shrub	common	-										+++	
162	*Psychotria asiatica*	山大刀	N	Tree/Shrub	very common	-	+++	+++									
163	*Psychotria serpens*	蔓九節	N	Climber/Shrub	very common	-	++	+++									
164	*Pteridium aquilinum var. latiusculum*	蕨	N	Herb	fairly common	-		++									
165	*Pteris semipinnata*	半邊旗	N	Herb	very common	-	++										
166	*Pueraria lobata var. montana*	葛麻姆	N	Climber	common	-		++			++	+++	++				
167	*Rhaphiolepis indica*	石斑木	N	Tree/Shrub	very common	-	++	++	++								
168	*Rhapis excelsa*	棕竹	N	Shrub	common; principally on the outlying islands; also cultivated	-						++					
169	*Rhodomyrtus tomentosa*	桃金娘	N	Shrub	very common	-	++		++								
170	*Rhus hypoleuca*	白背鹽膚木	N	Tree/Shrub	common	-			++								
171	*Rhus succedanea*	野漆樹	N	Tree/Shrub	common	-	+	++	+++								
172	*Rhynchosia volubilis*	鹿藿	N	Climber	restricted	-			++								
173	*Rhynchospora rubra*	刺子莞	N	Herb	very common	-			++								
174	*Richardia scabra*	墨苜蓿	E	Herb	common	-			+								
175	*Rosa kwangtungensis*	廣東薔薇	N	Shrub	common	-			++								
176	*Roystonea regia*	大王椰子	E	Tree	very common	-						++					
177	*Rubus reflexus*	鏽毛莓	N	Climber/Shrub	very common	-	++	+	++								
178	*Sageretia thea*	雀梅藤	N	Climber/Shrub	very common	-		++									
179	*Salomonia cantoniensis*	齒果草	N	Herb	common	-			+								
180	*Sansevieria trifasciata*	虎尾蘭	E	Herb	very common	-					+						
181	*Sapium discolor*	山烏桕	N	Tree	very common	-		+	++								
182	*Schefflera heptaphylla*	鵝掌柴	N	Tree/Shrub	very common	-	+++	++									
183	*Sesbania cannabina*	田菁	E	Herb	common	-			++	++							
184	*Setaria palmifolia*	棕葉狗尾草	N	Herb	common	-			+								
185	*Sida rhombifolia*	白背黃花稔	N	Shrub	common	-					+	++					
186	*Sinobambusa tootsik*	唐竹	E	Bamboo	common	-	+++										
187	*Smilax china*	菝葜	N	Climber	very common	-	++	++	++								
188	*Smilax glabra*	土茯苓	N	Climber	very common	-	++										
189	*Solanum americanum*	少花龍葵	E	Herb	very common	-			+								
190	*Soliva anthemifolia*	裸柱菊	E	Herb	common	-				++							
191	*Sonneratia caseolaris*	海桑	E	Tree	very common	-										++	
192	*Sporobolus virginicus*	鹽地鼠尾粟	N	Herb	very common	-										+++	++
193	*Stachytarpheta jamaicensis*	假馬鞭	E	Herb/Shrub	common	-			++								
194	*Stellaria alsine*	雀舌草	N	Herb	common	-				++							
195	*Sterculia lanceolata*	假蘋婆	N	Tree	very common	-	+++						+				
196	*Strophanthus divaricatus*	羊角拗	N	Climber/Shrub	common	-	++	+++									
197	*Suaeda australis*	南方鹼蓬	N	Herb/Shrub	common	-										++	+++
198	*Syzygium jambos*	蒲桃	E	Tree	very common	-	++										
199	*Tadehagi triquetrum*	葫蘆茶	N	Shrub	very common	-			+								

Annex 2 Relative Abundance of Plant Species Recorded Within the Assessment Area

Item No.	Species Name	Chinese Name	Origin[1]	Growth Form	Distribution in Hong Kong[2]	Protection/Conservation Status[2]	Habitat[3] 500m Assessment Area										
							WL	PL	SL	SWG	VA	DA	SWC	CWC	PO	MG	MF
200	*Tetradium glabrifolium*	棟葉吳茱萸	N	Tree	common	-	++	++									
201	*Tinospora sinensis*	中華青牛膽	N	Climber	common	-	+++										
202	*Tridax procumbens*	羽芒菊	E	Herb	very common	-				++	++	+++					
203	*Typha angustifolia*	水燭	E	Herb	common	-											
204	*Urena procumbens*	梵天花	N	Shrub	common	-		+									
205	*Uvaria macrophylla*	紫玉盤	N	Climber/Shrub	common	-	++										
206	*Vitis balanseana*	小果葡萄	N	Climber	restricted	-			+								
207	*Vitis retordii*	綿毛葡萄	N	Climber	common	-			++								
208	*Wedelia trilobata*	三裂葉蟛蜞菊	E	Herb	common; also widely cultivated	-				+++		+++					
209	*Wikstroemia indica*	了哥王	N	Shrub	very common	-			++								
210	*Youngia japonica*	黃鵪菜	N	Herb	very common	-				++	++	+++	+				
211	*Zanthoxylum avicennae*	簕欓花椒	N	Tree	common	-		+	++								
					TOTAL		**78**	**63**	**66**	**28**	**47**	**41**	**10**	**0**	**9**	**14**	**5**

Notes:

1. Origin of plant species refers to AFCD (2012). Check List of Hong Kong Plants 2012. Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong.

2. Commonness follows:
   - Corlett, R., Xing, F., Sai-Chit, N., Chau, L., Wong, L. (2000) Hong Kong Vascular Plants: Distribution and Status. Memoirs of the Hong Kong Natural History Society. Hong Kong.
   - KFBG (2003) Flora of Hong Kong – Pteridophyta. Kadoorie Farm and Botanic Garden, Hong Kong
   - AFCD (2003) Rare and Precious Plants of Hong Kong. Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong.
   - AFCD (2007) Flora of Hong Kong Vol. 1. Edited by Hong Kong Herbarium, Agriculture, Fisheries and Conservation Department & South China Botanical Garden, Chinese Academy of Sciences
   - AFCD (2008) Flora of Hong Kong Vol. 2. Edited by Hong Kong Herbarium, Agriculture, Fisheries and Conservation Department & South China Botanical Garden Chinese Academy of Sciences
   - AFCD (2009) Flora of Hong Kong Vol. 3. Edited by Hong Kong Herbarium, Agriculture, Fisheries and Conservation Department & South China Botanical Garden Chinese Academy of Sciences
   - AFCD (2011) Flora of Hong Kong Vol. 3. Edited by Hong Kong Herbarium, Agriculture, Fisheries and Conservation Department & South China Botanical Garden Chinese Academy of Sciences

   Conservation status follows:
   - AFCD (2003) Rare and Precious Plants of Hong Kong (Online Version). Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong. Available at: https://www.herbarium.gov.hk/en/publications/books/book2/index.html. Accessed on 2 November 2023.
   - Cap. 96: Forestry Regulations, the subsidiary legislation of Forests and Countryside Ordinance (Cap. 96A).
   - Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
   - CPRDB: Fu and Jin (1992) China Plant Red Data Book. VU =Vulerable
   - RLCHP – Red List of China's Higher Plants (2020). VU = Vulnerable, EN = Endangered
   - IUCN: International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable.
   - CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna.

3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body

4. The recorded individual was cultivated or exotic species and thus not considered as species of conservation importance under this study

5. Relative abundance: +: Scarce, ++: Uncommon, +++: Common, ++++: Abundant

Aquilaria sinensis

Small Indian Civet

Leopard Cat

Collared Scops Owl (Nesting)

Annex 3

Representative Photos of Species of Conservation Importance Recorded

DATE: 11/11/2024

Annex 4 Presence of Mammal Species Recorded Within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Commonness[2]	Habitat[3] 500m Study Area										
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Japanese Pipistrelle	*Pipistrellus abramus*	東亞家蝠	Cap.170	Widely distributed throughout Hong Kong.		✓									
2	Chestnut Spiny Rat	*Niviventer fulvescens*	針毛鼠	-	Widely distributed in countryside areas throughout Hong Kong.		✓									
3	Small Indian Civet	*Viverricula indica*	小靈貓	Cap.170; RLCV(VU); CSMPS(II); CITES(III)	Very widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	✓	✓									
4	Domestic Dog	*Canis lupus familiaris*	野狗	-	Widely distributed in urban and countryside areas throughout Hong Kong.	✓	✓									
5	Leopard Cat	*Prionailurus bengalensis*	豹貓	Cap.170; Cap.586; RLCV(VU); CITES(II)	Widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	✓	✓									
6	Domestic Cat	*Felis catus*	野貓	-	Widely distributed in urban and countryside areas throughout Hong Kong.	✓										
					TOTAL	**4**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Notes:

1. Conservation and Protection Status:
   a. Cap. 170 – Protected under Wild Animals Protection Ordinance
   b. Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
   c. RLCV – Red List of China's Vertebrates (2020): VU = Vulnerable
   d. CSMPS – China State Major Protection Status: Appendix I/II
   f. CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna
2. Commonness as per AFCD database: Available at https://bih.gov.hk/en/home/index.html
3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.
Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.
Ministry of Ecology and Environment of the People's Republic of China, and Chinese Academy of Sciences. 2023. Red List of China's Vertebrates.
Wang, S. 1998. China Red Data Book of Endangered Animals: Mammalia. Science Press. Beijing. China. 417pp.

Annex 5 Maximum Count of Bird Species Recorded Within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
1	Garganey	*Spatula querquedula*	白眉鴨	-	Common passage migrant. Found in Deep Bay area, Long Valley, Kam Tin.											3	
2	Northern Shoveler	*Spatula clypeata*	琵嘴鴨	Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.											26	
3	Eurasian Wigeon	*Mareca penelope*	赤頸鴨	Fellowes: RC	Winter visitor. Found in Deep Bay area, Tai Lam Chung.											378	
4	Northern Pintail	*Anas acuta*	針尾鴨	Fellowes: RC	Abundant winter visitor. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin.											178	
5	Eurasian Teal	*Anas crecca*	綠翅鴨	Fellowes: RC	Common winter visitor. Found in Deep Bay area, Shuen Wan, Tai Lam Chung Reservoir, Victoria Harbour, urban parks.											118	
6	Tufted Duck	*Aythya fuligula*	鳳頭潛鴨	Fellowes: LC	Rare winter visitor. Found in Mai Po.											34	
7	Red-breasted Merganser	*Mergus serrator*	紅胸秋沙鴨	Fellowes: LC	Rare winter visitor and scarce spring passage migrant. Found in Deep Bay area, Plover Cove Reservoir, Shing Mun Reservoir.											1	
8	House Swift	*Apus nipalensis*	小白腰雨燕	-	Abundant spring migrant and common resident. Widely distributed in Hong Kong.		1									1	18
9	Greater Coucal	*Centropus sinensis*	褐翅鴉鵑	CSMPS(II)	Common resident. Widely distributed in Hong Kong.		1	1							4		
10	Asian Koel	*Eudynamys scolopaceus*	噪鵑	-	Common resident. WIdely distributed in Hong Kong.	1	1								1		
11	Plaintive Cuckoo	*Cacomantis merulinus*	八聲杜鵑	-	Passage migrant and common visitor. Widely distributed in open area throughout Hong Kong.		1										
12	Large Hawk-Cuckoo	*Hierococcyx sparverioides*	大鷹鵑	-	Locally common spring and summer visitor. Widely distributed in woodland throughout in Hong Kong.				1								
13	Indian Cuckoo	*Cuculus micropterus*	四聲杜鵑	-	Locally common spring and summer visitor. Widely distributed in Hong Kong.	1											
14	Spotted Dove	*Spilopelia chinensis*	珠頸斑鳩	-	Abundant resident. Widely distributed in Hong Kong.	16	6		9	5					2		
15	Common Emerald Dove	*Chalcophaps indica*	綠翅金鳩	-	Uncommon but widespread resident. Widely distributed in woodland throughout Hong Kong.	1											
16	Common Moorhen	*Gallinula chloropus*	黑水雞	-	Common winter visitor, resident and migrant. Found in Deep Bay area, Shuen Wan, Starling Inlet.										1	2	
17	White-breasted Waterhen	*Amaurornis phoenicurus*	白胸苦惡鳥	-	Common resident. Widely distributed in wetland throughout Hong Kong.		1		2	1					2	4	
18	Great Crested Grebe	*Podiceps cristatus*	鳳頭鸊鷉	Fellowes: RC	Common winter visitor. Found in Tsim Bei Tsui, Starling Inlet.											56	

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
19	Black-winged Stilt	*Himantopus himantopus*	黑翅長腳鷸	Fellowes: RC	Common migrant and wintor visitor. Found in Deep Bay area, Long Valley, Kam Tin.											21	
20	Pied Avocet	*Recurvirostra avosetta*	反嘴鷸	Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.											1479	
21	Pacific Golden Plover	*Pluvialis fulva*	太平洋金斑鴴	Fellowes: LC	Common migrant and winter visitor. Found in Deep Bay area, Chek Lap Kok, Long Valley.											42	
22	Grey Plover	*Pluvialis squatarola*	灰斑鴴	Fellowes: RC	Abundant winter visitor and scarce migrant. Found in Deep Bay area.											81	
23	Kentish Plover	*Charadrius alexandrinus*	環頸鴴	Fellowes: RC	Abundant winter visitor and scarce migrant. Found in Deep Bay area, Chek Lap Kok, Shuen Wan, Sai Kung, Lantau Island.											62	
24	Lesser Sand Plover	*Charadrius mongolus*	蒙古沙鴴	Fellowes: LC	Uncommon passage migrant and scarce winter visitor. Found in Deep Bay area.											236	
25	Greater Sand Plover	*Charadrius leschenaultii*	鐵嘴沙鴴	Fellowes: RC	Abundant passage migrant. Found in Deep Bay area.											34	
26	Whimbrel	*Numenius phaeopus*	中杓鷸	Fellowes: LC	Common passage migrant and scarce winter visitor. Found in Deep Bay area, Sai Kung, Tung Ping Chau, Ninepins, Cape D'Aguilar, Pok Fu Lam.											52	
27	Eurasian Curlew	*Numenius arquata*	白腰杓鷸	Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.											40	
28	Bar-tailed Godwit	*Limosa lapponica*	斑尾塍鷸	Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area.											9	
29	Black-tailed Godwit	*Limosa limosa*	黑尾塍鷸	Fellowes: RC	Abundant passage migrant and winter visitor. Found in Deep Bay area.											29	
30	Great Knot	*Calidris tenuirostris*	大濱鷸	Fellowes: LC; RLCV(EN); IUCN(EN)	Common passage migrant and scarce winter visitor. Found in Deep Bay area.											16	
31	Red Knot	*Calidris canutus*	紅腹濱鷸	Fellowes: LC; RLCV(VU)	Common passage migrant and scarce winter visitor. Found in Deep Bay area, Shuen Wan.											2	
32	Broad-billed Sandpiper	*Calidris falcinellus*	闊嘴鷸	Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area, Ho Chung, Shuen Wan.											2	
33	Curlew Sandpiper	*Calidris ferruginea*	彎嘴濱鷸	Fellowes: RC	Abundant spring passage migrant. Found in Deep Bay area, Cape D'Aguilar.											423	
34	Red-necked Stint	*Calidris ruficollis*	紅頸濱鷸	Fellowes: LC	Abundant spring passage migrant. Found in Deep Bay area.											5	
35	Dunlin	*Calidris alpina*	黑腹濱鷸	Fellowes: RC	Abundant winter visitor and scarce passage migrant. Found in Deep Bay area.											244	
36	Terek Sandpiper	*Xenus cinereus*	翹嘴鷸	Fellowes: RC	Common passage migrant. Found in Deep Bay area, Sai Kung, Tung Ping Chau, Cape D'Aguilar.											13	
37	Common Sandpiper	*Actitis hypoleucos*	磯鷸	-	Common passage migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong.											5	
38	Grey-tailed Tattler	*Tringa brevipes*	灰尾漂鷸	Fellowes: LC	Common passage migrant. Found in Deep Bay area.											9	

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
39	Common Redshank	*Tringa totanus*	紅腳鷸	Fellowes: RC	Abundant passage migrant and winter visitor. Found in Deep Bay area.											281	
40	Marsh Sandpiper	*Tringa stagnatilis*	澤鷸	Fellowes: RC	Abundant winter visitor and migrant. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin, Sai Kung.											72	
41	Common Greenshank	*Tringa nebularia*	青腳鷸	Fellowes: RC	Abundant winter visitor and migrant. Found in Deep Bay area.										50	51	
42	Nordmann's Greenshank	*Tringa guttifer*	小青腳鷸	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(EN); CITES(I)	Uncommon passage migrant and scarce winter visitor. Found in Deep Bay area.											1	
43	Black-headed Gull	*Chroicocephalus ridibundus*	紅嘴鷗	Fellowes: PRC	Abundant winter visitor. Found in Deep Bay area and costal waters.											734	
44	Saunders's Gull	*Chroicocephalus saundersi*	黑嘴鷗	Fellowes: GC; RLCV(VU); IUCN(VU)	Common winter visitor. Found in Deep Bay area, Chek Lap Kok.											1	
45	Vega Gull	*Larus vegae*	織女銀鷗	-	Scarce winter visitor. Found in Mai Po.											1	
46	Lesser Black-backed Gull	*Larus fuscus*	烏灰銀鷗	Fellowes: LC	Common winter visitor and passage migrant. Found in Deep Bay area, Cape D'Aguilar.											8	
47	Gull-billed Tern	*Gelochelidon nilotica*	鷗嘴噪鷗	-	Common passage migrant. Found in Deep Bay area, Tolo Harbour.											106	
48	Little Tern	*Sternula albifrons*	白額燕鷗	Fellowes: LC	Uncommon spring passage migrant. Found in Mai Po, Ting Kau, Tsuen Wan Ferry Pier.											2	
49	Whiskered Tern	*Chlidonias hybrida*	鬚浮鷗	-	Common passage migrant. Found in Deep Bay area, Shuen Wan, Tolo Harbour, Cape D'Aguilar, Cheung Chau.											2	
50	Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	Fellowes: PRC	Common winter visitor. Widely distributed in coastal areas throughout Hong Kong.											125	1
51	Eurasian Spoonbill	*Platalea leucorodia*	白琵鷺	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Uncommon winter visitor. Found in Deep Bay area.											1	
52	Black-faced Spoonbill	*Platalea minor*	黑臉琵鷺	Fellowes: PGC; RLCV(EN); CSMPS(II); IUCN(EN)	Common winter visitor. Found in Deep Bay area.											31	
53	Black-crowned Night Heron	*Nycticorax nycticorax*	夜鷺	Fellowes: (LC)	Common resident and migrant. Widely distributed in Hong Kong.											9	
54	Striated Heron	*Butorides striata*	綠鷺	Fellowes: (LC)	Common summer visitor. Widely distributed in Hong Kong.											1	
55	Chinese Pond Heron	*Ardeola bacchus*	池鷺	Fellowes: PRC (RC)	Common resident. Widely distributed in Hong Kong.										1	17	
56	Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	Fellowes: (LC)	Resident and common passage migrant. Widely distributed in Hong Kong.											1	
57	Grey Heron	*Ardea cinerea*	蒼鷺	Fellowes: PRC	Common winter visitor. Found in Deep Bay area, Starling Inlet, Kowloon Park, Cape D'Aguilar.										1	26	
58	Great Egret	*Ardea alba*	大白鷺	Fellowes: PRC (RC)	Common resident, migrant and winter visitor. Widely distributed in Hong Kong										87	137	

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
59	Intermediate Egret	*Ardea intermedia*	中白鷺	Fellowes: RC	Resident and passage migrant. Found in Deep Bay area, Tai Long Wan, Starling Inlet, Tai O, Cape D'Aguilar.											46	
60	Little Egret	*Egretta garzetta*	小白鷺	Fellowes: PRC (RC)	Common resident, migrant and winter visitor. Widely distributed in coastal area throughout Hong										2	82	
61	Western Osprey	*Pandion haliaetus*	鶚	Cap.586; Fellowes: RC; CSMPS(II); CITES(II)	Common winter visitor. Widely distributed in coastal areas throughout Hong Kong.											1	
62	Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	Cap.586; Fellowes: (LC); CSMPS(II); CITES(II)	Common resident. Widely distributed in shrublands on hillsides throughout Hong Kong.												1
63	Greater Spotted Eagle	*Clanga clanga*	烏鵰	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(VU); CITES(II)	Common winter visitor. Found in Deep Bay area.											1	
64	Northern Goshawk	*Accipiter gentilis*	蒼鷹	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Vagrant. Found in Mai Po.	1											
65	Eastern Marsh Harrier	*Circus spilonotus*	白腹鷐	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Common winter visitor and passage migrant. Found in Deep Bay area, Starling Inlet area, Kadoorie Farm & Botanic Garden, Mount Austin.											1	
66	Black Kite	*Milvus migrans*	黑鳶	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Common resident and winter visitor. Widely distributed in Hong Kong.											10	1
67	Eastern Buzzard	*Buteo japonicus*	普通鵟	Cap.586; CSMPS(II); CITES(II)	Common winter visitor. Widely distributed in Hong Kong.	1										1	
68	Collared Scops Owl	*Otus lettia*	領角鴞	Cap.586; CSMPS(II); CITES(II)	Common resident. Widely distributed in shrubland throughout Hong Kong		1										
69	White-throated Kingfisher	*Halcyon smyrnensis*	白胸翡翠	Fellowes: (LC)	Common resident. Widely distributed in coastal areas throughout Hong Kong.										1	2	
70	Black-capped Kingfisher	*Halcyon pileata*	藍翡翠	Fellowes: (LC); IUCN(VU)	Uncommon passage migrant and winter visitor. Widely distributed in coastal areas throughout Hong Kong.										1	2	
71	Common Kingfisher	*Alcedo atthis*	普通翠鳥	-	Common passage migrant and winter visitor. Widely distributed in wetland habitat throughout Hong Kong.										1	2	
72	Pied Kingfisher	*Ceryle rudis*	斑魚狗	Fellowes: (LC)	Common resident. Widely distributed in lakes and ponds throughout Hong Kong.											2	1
73	Common Kestrel	*Falco tinnunculus*	紅隼	Cap.586; CSMPS(II); CITES(II)	Common autumn migrant and winter visitor. Widely distributed in Hong Kong.											1	

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
74	Hair-crested Drongo	*Dicrurus hottentottus*	髮冠卷尾	-	Common migrant and winter visitor, and locally common resident. Widely distributed in wooded area throughout Hong Kong.	2									5		
75	black drongo	*Dicrurus macrocercus*	黑卷尾	-	Common autumn passage migrant and winter visitor. Widely distributed in open area throughout Hong Kong.	2			1								
76	Black-naped Monarch	*Hypothymis azurea*	黑枕王鶲	-	Uncommon winter visitor and migrant. Found in Mai Po, Shek Kong, Tung Ping Chau, Lung Fu Shan, Tai Po Kau.	1											
77	Red-billed Blue Magpie	*Urocissa erythroryncha*	紅嘴藍鵲	-	Common resident. Widely distributed in woodland edges throught Hong Kong.	1	2			2					1	2	
78	Collared Crow	*Corvus torquatus*	白頸鴉	Fellowes: LC; IUCN(VU)	Locally common resident. Found in Inner Deep Bay area, Nam Chung, Kei Ling Ha, Tai Mei Tuk, Pok Fu Lam, Chek lap Kok, Shuen Wan, Lam Tsuen.	2										9	
79	Large-billed Crow	*Corvus macrorhynchos*	大嘴烏鴉	-	Common resident. Widely distributed in Hong Kong.		2								1		1
80	Japanese Tit	*Parus minor*	遠東山雀	-	Common resident. Widely distributed in Hong Kong.		2								1		
81	Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	-	Abundant resident. Widely distributed in Hong Kong	2	2		1		1				6		
82	Red-whiskered Bulbul	*Pycnonotus jocosus*	紅耳鵯	-	Abundant resident. Widely distributed in Hong Kong	6	12		8	6	4				5		
83	Barn Swallow	*Hirundo rustica*	家燕	-	Abundant passage migrant and uncommon winter visitor. Widely distributed in Hong Kong.	7									1	12	24
84	Asian Stubtail	*Urosphena squameiceps*	鱗頭樹鶯	-	Common winter visitor. Widely distributed in woodland and shrubland throughout Hong Kong	1											

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
85	Dusky Warbler	*Phylloscopus fuscatus*	褐柳鶯	-	Abundant winter visitor and migrant. Widely distributed in shrubland and waterside vegetation throughout Hong Kong	3		2							1	2	
86	Pale-legged Leaf Warbler	*Phylloscopus tenellipes*	淡腳柳鶯	-	Uncommon passage migrant. Widely distributed in woodland throughout Hong Kong											1	
87	Styan's Grasshopper Warbler	*Helopsaltes pleskei*	史氏蝗鶯	Fellowes: GC; RLCV(VU); IUCN(VU)	Scarce passage migrant and winter visitor. Found in Ma Tso Lung, Mai Po										1		
88	yellow-bellied prinia	*Prinia flaviventris*	黃腹鷦鶯	-	Common resident. Widely distributed in Hong Kong	1			4						1		
89	Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	-	Common resident. Widely distributed in Hong Kong		1			2					1		
90	Swinhoe's White-eye	*Zosterops simplex*	暗綠繡眼鳥	-	Abundant resident. Widely distributed in Hong Kong	5	10								9		
91	Masked Laughingthrush	*Pterorhinus perspicillatus*	黑臉噪鸝	-	Abundant resident. Widely distributed in shrubland throughout Hong Kong	6	2	4	3						4	2	
92	Crested Myna	*Acridotheres cristatellus*	八哥	-	Abundant resident. Widely distributed in Hong Kong	4									2		
93	Red-billed Starling	*Spodiopsar sericeus*	絲光椋鳥	Fellowes: GC	Abundant winter visitor. Widely distributed in Hong Kong	4											
94	Black-collared Starling	*Gracupica nigricollis*	黑領椋鳥	-	Common resident. Widely distributed in Hong Kong	1	3		3	2	5					2	
95	White-shouldered Starling	*Sturnia sinensis*	灰背椋鳥	Fellowes: (LC)	Locally common passage migrant and uncommon winter visitor. Found in Kam Tin, Deep Bay area,											2	1
96	Grey-backed Thrush	*Turdus hortulorum*	灰背鶇	-	Common winter visitor and migrant. Widely distributed in woodland throughout Hong Kong	2											
97	Oriental Magpie Robin	*Copsychus saularis*	鵲鴝	-	Abundant resident. Widely distributed in Hong Kong	2	1	1	1	2	1				7	2	
98	Siberian Rubythroat	*Calliope calliope*	紅喉歌鴝	-	Common winter visitor and passage migrant. Widely distributed in Hong Kong	1											
99	Fork-tailed Sunbird	*Aethopyga christinae*	叉尾太陽鳥	-	Common resident and winter visitor. Widely distributed in Hong Kong	1	2	1							2		
100	eurasian tree sparrow	*Passer montanus*	樹麻雀	-	Abundant resident. Widely distributed in Hong Kong					4							
101	scaly-breasted munia	*Lonchura punctulata*	斑文鳥	-	Abundant resident. Widely distributed in Hong Kong				2								
102	Eastern Yellow Wagtail	*Motacilla tschutschensis*	東黃鶺鴒	-	Common passage migrant and winter visitor. Widely distributed in agricultural fields and marsh edges						2						
103	White Wagtail	*Motacilla alba*	白鶺鴒	-	Resident, common passage migrant and winter visitor. Widely distributed in Hong Kong	1									2	2	
104	Black-faced Bunting	*Emberiza spodocephala*	灰頭鵐	-	Common winter visitor and passage migrant. Widely distributed in Hong Kong	1											

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
					TOTAL	**28**	**18**	**5**	**11**	**8**	**5**	**0**	**0**	**0**	**30**	**73**	**8**

Notes:

1. Conservation and Protection Status:
   a. All birds in Hong Kong are protected under Cap. 170 – Protected under Wild Animals Protection Ordinance
   b. Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
   c. Fellowes – Fellowes et al. (2002): LC = Local Concern, PRC = Potential Regional Concern, RC = Regional Concern, PGC = Potential Global Concern, GC = Global Concern.
   Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
   d. RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable, EN = Endangered
   e. CSMPS – China State Major Protection Status: Appendix I/II
   f. CRDB – China Red Data Book (1998): VU = Vulnerable
   f. IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable, EN = Endangered
   g. CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna
2. Distribution as per AFCD database. Available at https://bih.gov.hk/en/home/index.html:
3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.

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Annex 6 Relative Abundance of Amphibian Species Recorded Within Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation and Protection Status[1]	Rarity in Hong Kong[2]	Distribution in Hong Kong[3]	Habitat[4/5] 500m Study Area										
							WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Asian Common Toad	*Duttaphrynus melanostictus*	黑眶蟾蜍	-	Least Concern	Widely distributed in HK		++							++	+	
2	Asiatic Painted Frog	*Kaloula pulchra*	花狹口蛙	-	Least Concern	Widely distributed in HK		+							+	+	
3	Günther's Frog	*Sylvirana guentheri*	沼蛙	-	Least Concern	Widely distributed throughout										+	
4	Brown Tree Frog	*Polypedates megacephalus*	斑腿泛樹蛙	-	Least Concern	Widely distributed throughout Hong Kong		+								+	
5	Greenhouse Frog	*Eleutherodactylus planirostris*	溫室蟾	-	-	Widely distributed throughout Hong Kong		+++									
						TOTAL	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**0**

Notes:

1. Conservation and Protection Status:
2. Rarity as per AFCD. 2009. The Proposed Action Plan for the Conservation of Amphibians in Hong Kong (NCSC 4/09). Annex 1.
3. Distribution as per AFCD database. Available at https://bih.gov.hk/en/home/index.html
4. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
5. Relative abundance: +: Scarce, ++: Uncommon, +++: Common, ++++: Abundant
6. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

AFCD. 2009. The Proposed Action Plan for the Conservation of Amphibians in Hong Kong (NCSC 4/09). Annex 1. Accessed from <http://www.epd.gov.hk/epd/textonly/english/boards/advisory_council/files/ncsc_paper04_2009.pdf> in Sep 2014

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Annex 7 Maximum Count of Reptile Species Recorded Within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation and Protection Status[1]	Distribution in Hong Kong[2]	Habitat[3] 500m Study Area										
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Changeable Lizard	*Calotes versicolor*	變色樹蜥	-	Widely distributed throughout Hong Kong		1									
2	Long-tailed Skink	*Eutropis longicaudata*	長尾南蜥	-	Widely distributed throughout Hong Kong		1									
3	Slender Forest Skink	*Scincella modesta*	寧波滑蜥	-	Scattered in woodlands in the New Territories, Lantau Island and Hong Kong Island		1									
4	Bowring's Gecko	*Hemidactylus bowringii*	原尾蜥虎	-	Distributed throughout Hong Kong		2				2					
5	Bamboo Snake	*Cryptelytrops albolabris*	白唇竹葉青	-	Very common and widespread in Hong Kong		1				1					
					TOTAL	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**

Notes:

1. Conservation and Protection Status:
2. Distribution as per AFCD database. Available at https://bih.gov.hk/en/home/index.html
3. Habitats: Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.

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Zhao, E. 1998. China Red Data Book of Endangered Animals: Amphibia and Reptilia. Science Press. Beijing. China. 330pp.

Annex 8 Maximum Count of Butterfly Species Recorded within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Consevation/ Protection Status [1]	Rarity in Hong Kong [2]	Distribution in Hong Kong [2]	Habitat[3] 500m Study Area										
							WL	PL	SL	GL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Formosan Swift	*Borbo cinnara*	秈弄蝶	-	Common	Widely distributed throughout Hong Kong.		1									1	
2	Water Snow Flat	*Tagiades litigiosus*	沾邊裙弄蝶	-	Common	Widely distributed throughout Hong Kong.		1										
3	Pale Grass Blue	*Zizeeria maha*	酢漿灰碟	-	Very Common	Widely distributed throughout Hong Kong.		1										
4	Blue-spotted Crow	*Euploea midamus*	藍點紫斑蝶	-	Very Common	Widely distributed throughout Hong Kong.		1										
5	Staff Sergeant	*Athyma selenophora*	新月帶蛺蝶	-	Common	Widely distributed throughout Hong Kong.		1										
6	Great Eggfly	*Hypolimnas bolina*	幻紫斑蛺蝶	-	Common	Widely distributed throughout Hong Kong.		1									1	
7	Southern Sullied Sailer	*Neptis clinia*	珂環蛺蝶	-	Common	Widely distributed throughout Hong Kong.		1										
8	Common Sailer	*Neptis hylas*	中環蛺蝶	-	Very Common	Widely distributed throughout Hong Kong.		1										
9	Five-dot Sergeant	*Parathyma sulpitia*	殘鍔線蛺蝶	-	Common	Widely distributed throughout Hong Kong.		2										
10	Common Palmfly	*Elymnias hypermnestra*	翠袖鋸眼蝶	-	Common	Widely distributed throughout Hong Kong.		1										
11	South China Bush Brown	*Mycalesis zonata*	平頂眉眼蝶	-	Common	Widely distributed throughout Hong Kong.		1										
12	Tailed Jay	*Graphium agamemnon*	統帥青鳳蝶	-	Common	Widely distributed throughout Hong Kong.		1										
13	Common Jay	*Graphium doson*	木蘭青鳳蝶	-	Common	Widely distributed throughout Hong Kong.											1	
14	Red Helen	*Papilio helenus*	玉斑鳳蝶	-	Very Common	Widely distributed throughout Hong Kong.		1										
15	Paris Peacock	*Papilio paris*	巴黎翠鳳蝶	-	Very Common	Widely distributed throughout Hong Kong.	1	1										
16	Common Mormon	*Papilio polytes*	玉帶鳳蝶	-	Very Common	Widely distributed throughout Hong Kong.		1										
17	Lemon Emigrant	*Catopsilia pomona*	遷粉蝶	-	Common	Widely distributed throughout Hong Kong.		1									1	
18	Common Grass Yellow	*Eurema hecabe*	寬邊黃粉蝶	-	Very Common	Widely distributed throughout Hong Kong.	1	1										
19	Painted Jezebel	*Delias hyparete*	優越斑粉蝶	-	Uncommon	Widely distributed throughout Hong Kong.		2										
20	Red-base Jezebel	*Delias pasithoe*	報喜斑粉蝶	-	Very Common	Widely distributed throughout Hong Kong.	10	14									2	
						TOTAL	**3**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

Notes:

1. Conservation and Protection Status:
   a. Fellowes – Fellowes et al. (2002): LC = Local Concern.
   Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
2. Distribution in Hong Kong refers to AFCD database:
Chan, A., Cheung, J., Sze, P., Wong, A., Wong, E. and Yau, E. 2011. A Review of the Local Restrictedness of Hong Kong Butterflies.
Hong Kong Biodiversity 21: 1-12
3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.
Chan, A., Cheung, J., Sze, P., Wong, A., Wong, E. and Yau, E. 2011. A Review of the Local Restrictedness of Hong Kong Butterflies. Hong Kong Biodiversity 21: 1-12

Annex 9 Maximum Count of Odonate Species Recorded within the Assessment Area

Item No.	Common Name	Chinese Name	Scientific Name	Consevation/ Protection Status	Rarity in Hong Kong [1]	Distribution in Hong Kong [2]	Habitat[3] 500m Study Area										
							WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Coastal Glider	高翔澤蜻	*Macrodiplax cora*	Fellows: LC	Abundant	Frequents marshes and ponds with dense vegetation, especially adjacent to coastal areas										7	
2	Russet percher	網脈蜻	*Neurothemis fulvia*	-	Abundant	Found in marshes, cultivated areas, streams, tanks and irrigation feeders, sometimes even found in nearly dried out marshy areas. Widely distributed throughout Hong Kong										1	
3	Common Blue Skimmer	黑尾灰蜻	*Orthetrum glaucum*	-	Abundant	Widely distributed in streams, conduits, drainage channels, seepages and road gutters throughout Hong Kong		2									
4	Mangrove Skimmer	斑灰蜻	*Orthetrum poecilops poecilops*	Fellowes: GC; Reels: CI; IUCN(VU)	Abundant	Occurs where small freshwater streams cascade into tidal mangroves. Found mainly in the Northeast New Territories, including Double Island, Lai Chi Wo, Nam Chung, So Lo Pun, Yim Tso Ha, Yung Shue Au and Yung Shue O etc; also recorded in Tung Chung and Tai O										1	
5	Wandering Glider	黃蜻	*Pantala flavescens*	-	Abundant	Widely distributed all over Hong Kong		5								29	
6	Variegated Flutterer	斑麗翅蜻	*Rhyothemis variegata arria*	-	Abundant	Widely distributed in marshes, ponds and tanks throughout Hong Kong										24	
						TOTAL	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

Notes:

1. Conservation and Protection Status:
   a. Fellowes – Fellowes et al. (2002): LC = Local Concern, GC = Global Concern
   b. Reels. G. (2019): CI = Species of Conservation Importance
   c. IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable
2. Rarity as per AFCD. 2014.: Available at http://www.afcd.gov.hk/english/conservation/hkbiodiversity/database/search.asp?lang=en.
3. Distribution as per AFCD database. Available at https://bih.gov.hk/en/home/index.html
4. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
5. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.
IUCN. (2024). The IUCN Red List of Threatened Species (Version 2024-2). Accessed from <http://www.iucnredlist.org> in Jan 2025.

Annex 10 Relative Abundance of Aquatic Fauna Recorded within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat[1] 500m Study Area										
					WL	FSW	PL	SL	SWG	VA	DA	PO	WC	MG	MF
Freshwater Fish															
1	Nile Tilapia	*Oreochromis niloticus*	尼羅口孵非鯽	-											+++
2	Bluespotted Mudskipper	*Boleophthalmus pectinirostris*	大彈塗魚	-											++++
Freshwater Invertebrates															
1	Diving Beetle	*Copelatus oblitus*	奧刻翅龍蝨	-									+++		
2	Mosquito Larva	*Culicidae sp.*	孑孓	-									++++		
3	Water Flea	*Diplostraca sp.*	水蚤	-									+++++		
				TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**2**

Notes:

1. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
2. Relative abundance: +: Scarce (1-5), ++: Uncommon (6-20), +++: Common (20 - 50), ++++: Abundant (>50)
3. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

Annex 11 Maximum Count of Firefly Species Recorded within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Habitat[3] 500m Study Area															
					WL	FSW	PL	SL	GL	M	SWG	WAG	DAG	VA	DA	PO	SWC	CWC	MG	MF
1	Maipo Bent-winged Firefly	*Pteroptyx maipo*	米埔屈翅螢	IUCN(EN)															17	
				TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

Notes:

1. Conservation and Protection Status:
   a. Fellowes – Fellowes *et al.* (2002): PGC = Potential Global Concern, GC = Global Concern.
      Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
   b. CRDB – China Red Data Book (1998): VU = Vulnerable
   c. IUCN – IUCN (2022): VU = Vulnerable

3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body

4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.

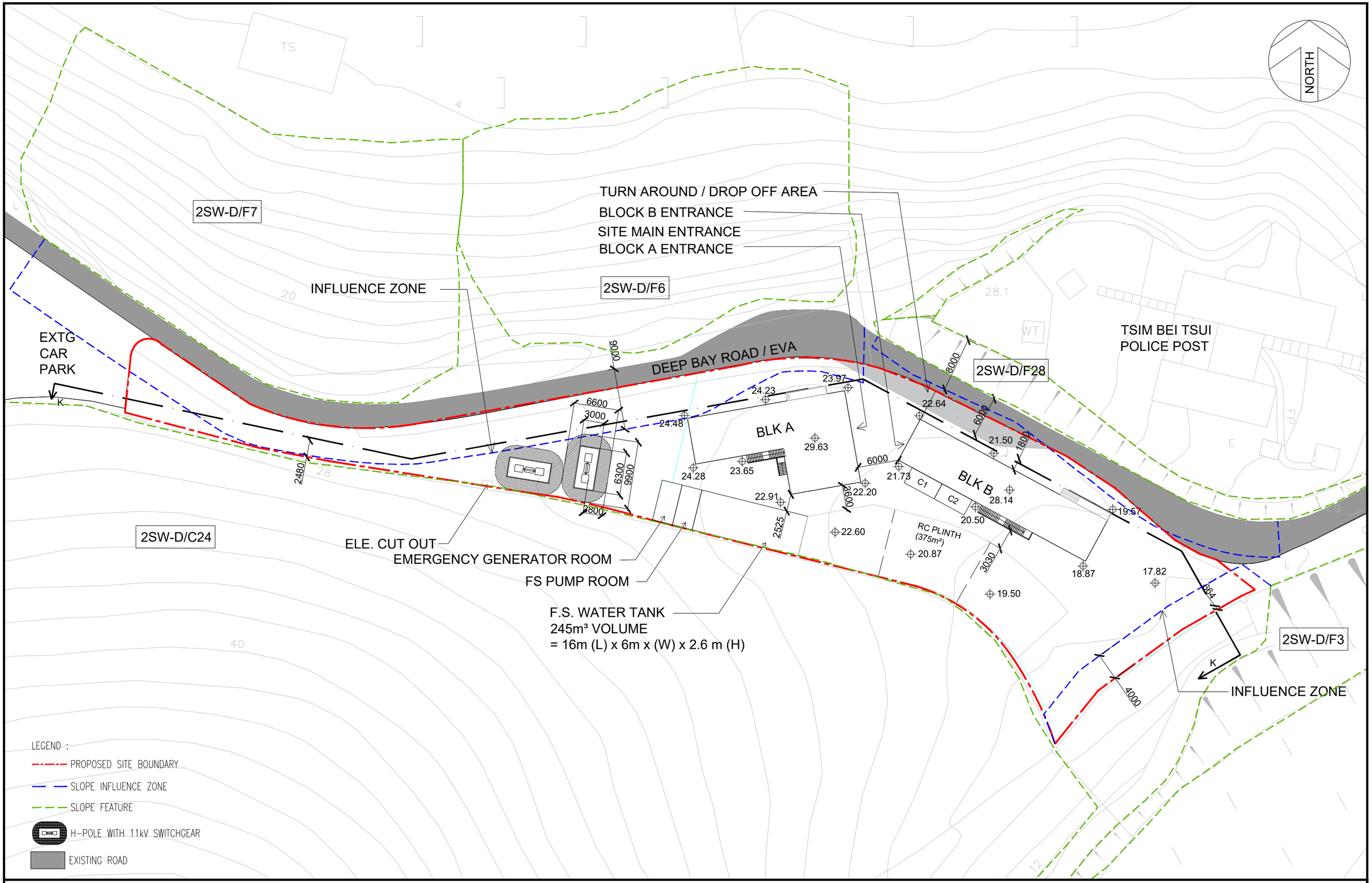
IUCN. (2024). The IUCN Red List of Threatened Species (Version 2024-2). Accessed from <http://www.iucnredlist.org> in Jan 2025.

Annex 12 Relative Abundance of Intertidal Species Recorded in Survey

Taxa Group	Scientific Name	Relative Abundance	
		Dry Season (Jan)	Wet Season (Jul)
Algae	*Hildenbrandia* sp.	+	
Barnacle	*Amphibalanus amphitrite*	+	++
Barnacle	*Microeuraphia withersi*	+	+
Bivalve	*Geloina erosa*	+	
Bivalve	*Saccostrea cucullata*		+
Crab	*Macrophthalmus spp.*	+++	+++
Crab	*Metopograpsus quadridentatus*		+
Crab	*Perisesarma bidens*	++	++
Crab	*Uca arcuata*		++
Crab	*Uca spp.*		+++
Crustaceans	*Ligia (Megaligia) exotica*		+++
Cyanobacteria	*Kyrtuthrix maculans*		+
Fish	*Boleophthalmus pectinirostris*	++	++
Fish	*Periophthalmus modestus*		+
Gastropod	*Ellobium aurisjudae*	+++	++
Number of species recorded		**8**	**13**

Notes:

1. Relative abundance: +: Scarce, ++: Uncommon, +++: Common



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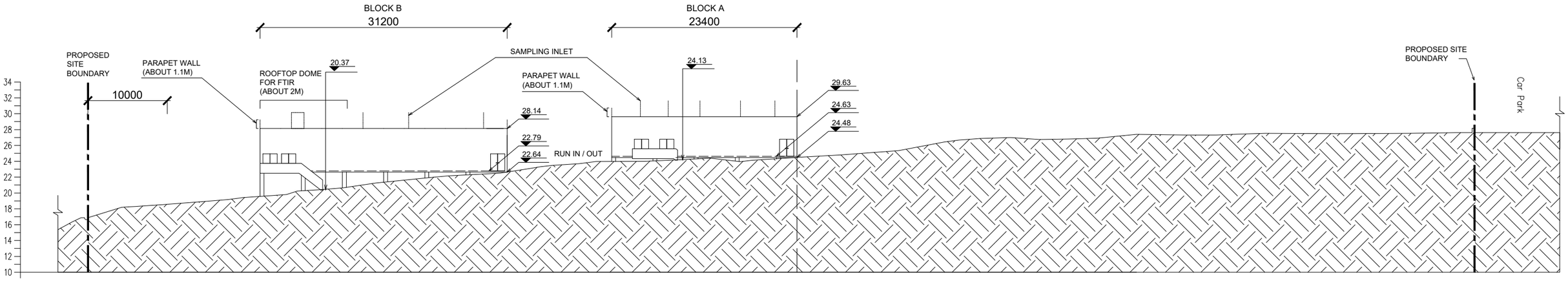

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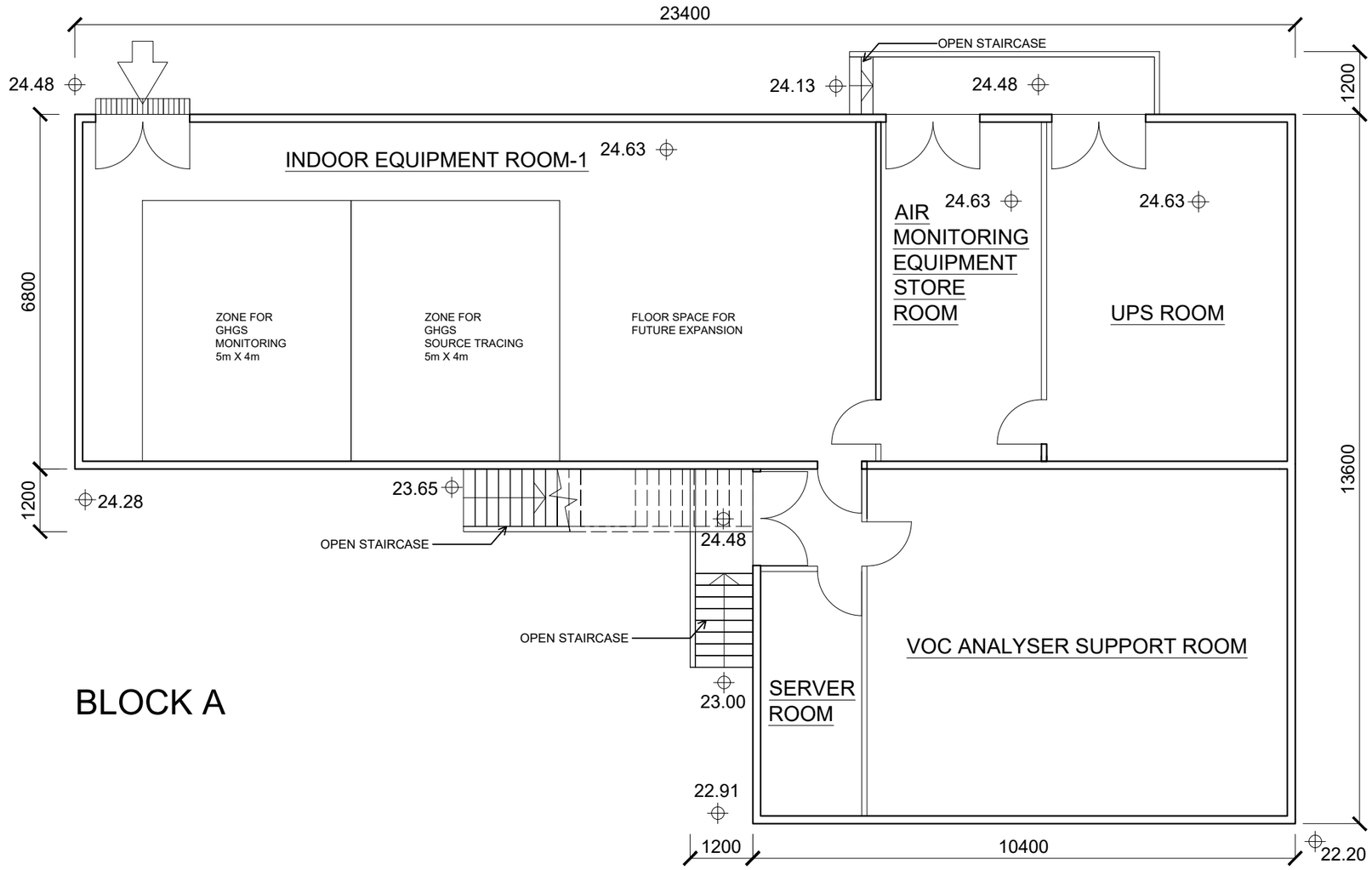

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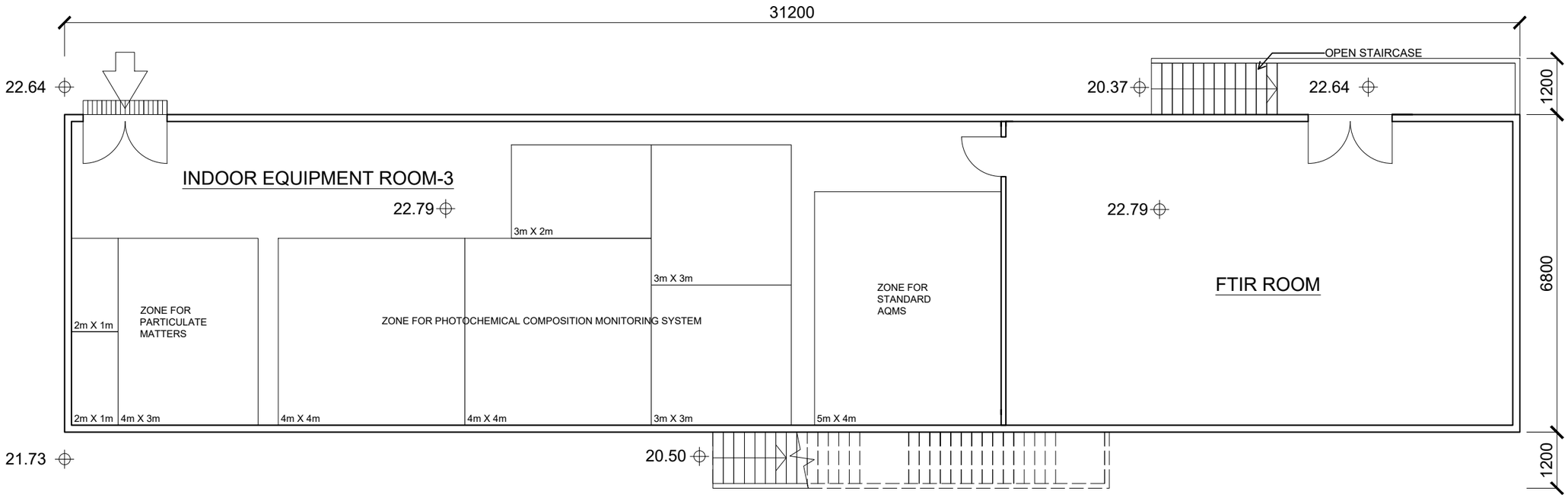

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