# Annex A

*Updated Report of the Ecological Impact Assessment*

# REZONING APPLICATION FROM "RESIDENTIAL (GROUP D)" TO "RESIDENTIAL (GROUP C)2" ZONE AT LOT 4822 IN D.D. 104 AND ADJOINING GOVERNMENT LAND, EAST OF KAM POK ROAD, MAI PO, YUEN LONG, NEW TERRITORIES

## Ecology Impact Assessment

## 1. Summary

1.1.1 This report presents the Ecological Impact Assessment on any direct and indirect potential impacts to ecology arising from the construction and operation of the proposed rezoning layout. Ecological baseline conditions of the Subject Site and its surroundings were described, potential ecological impacts including losses or damages of habitats and other potential impacts to the inhabiting flora and fauna were assessed, and the need of mitigation measures such as avoidance, minimization and compensation were investigated. The potential ecological impacts on the identified species and habitats were found acceptable with implementation of mitigation measures.

## 2. Relevant Legislation, Standards, Guidelines and Criteria

2.1.1 The HKSAR ordinances and regulations relevant to ecological assessment of this Project include the following:

- Forests and Countryside Ordinance (Cap. 96) and its subsidiary legislation, the Forestry Regulations (Cap. 96A);
- Town Planning Ordinance (Cap. 131);
- Wild Animals Protection Ordinance (WAPO, Cap. 170);
- Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586);
- Environmental Impact Assessment Ordinance ("the EIAO", Cap. 499) and the associated TM (EIAO-TM), in particular Annexes 8 and 16; and
- Town Planning Board Guidelines for Application for Development within the Deep Bay Area under Section16 of the Town Planning Ordinance.

2.1.2 Ecological assessment also made reference to the following guidelines and standards as well as international conventions:

- Hong Kong Planning Standards and Guidelines (HKPSG) Chapter 10, "Conservation";
- PELB Technical Circular 1/97 / Works Branch Technical Circular 4/97, "Guidelines for Implementing the Policy on Off-site Ecological Mitigation Measures";
- ETWB Technical Circular (Works) No. 5/2005, “Protection of natural streams/rivers from adverse impacts arising from construction works”;
- Relevant wildlife protection laws of the PRC;

- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (the "Ramsar Convention"), which requires parties to conserve and make wise use of wetland areas, particularly those supporting waterfowl populations;
- United Nations Convention on Biological Diversity, which requires parties to regulate or manage biological resources important for the conservation of biological diversity, to promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings. Signatories of the convention are required to make active efforts to protect and manage their biodiversity resources. The Government of the Hong Kong SAR has stated that it will be "committed to meeting the environmental objectives" of the Convention;
- International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species;
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

# 3. Establishment of Ecological Baseline

3.1.1 Ecological baseline condition of the Subject Site and 500m Assessment Area was established by literature review and updating survey of habitat mapping in May 2025.

*Literature Review*

3.1.2 The following literatures were reviewed. Ecological surveys carried out in these projects have gathered a large amount of ecological information of the Subject Site and the surrounding areas.

- "Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.";
- "Proposed Residential cum Passive Recreational Development within "Recreation" ("REC") Zone and "Residential (Group C)" Zone at Various Lots in DD 104, Yuen Long, N.T." (hereafter REC Site EIA);
- "Comprehensive Development and Wetland Protection near Yau Mei San Tsuen" (hereafter YMST EIA);
- On-going construction phase ecological monitoring data of Light Public Housing at Yau Pok Road, Yuen Long (DIR-296/2023);
- "Residential Development within R(D) Zone at Various Lots in DD104, Yuen Long, N.T." (hereafter R(D) Site EcoIA);
- "Light Public Housing at Yau Pok Road, Yuen Long Project Profile";
- "S12A Planning Application Mai Po & Fairview Park OZP No. S/YL-MP/8 – Rezoning from "Residential (Group D)" to "Residential (Group C) 1" Zone For a Proposed Residential Development at Various Lots in D.D. 104 and the Adjoining Government Land in Yuen Long" (Y/YL-MP/10);
- Ecological survey to provide back-up data for the application of variation of environmental permit A/YL-MP/287. Ecological surveys including habitat

mapping, mammal, bird, herpetofauna, dragonfly and butterfly between February and July 2023. Surveys covered the Subject Site and 500m Assessment Area;

- Hong Kong Bird Report published by the Hong Kong Bird Watching Society;
- So, I.W.Y. & Yuen, S.N.F. 2020. Territory-wide Study on Roosting Sites of Ardeids in Winter 2019/20. *Hong Kong Biodiversity Newsletter* Issue No. 26: 2 – 14.

*Habitat Mapping*

3.1.3 A habitat mapping survey was conducted in May 2025. Habitats in the Subject Site and 500m Assessment Area were mapped based on aerial photos and ground truthing. Walk-over surveys were conducted at representative areas of each habitat type.

# 4. Results of Literature Review

## 4.1 Recognized Sites of Conservation Importance

4.1.1 There is no Recognized Site of Conservation Importance within the Subject Site of this application.

*Wetland Buffer Area (WBA)*

4.1.2 The planning intention of WBA is to protect the ecological integrity of the fishponds and wetlands within the Wetland Conservation Area (WCA) and to prevent development that would have a negative off-site impact on the ecological value of those fishponds.

4.1.3 The Subject Site is located immediately outside the boundary of Wetland Buffer Area (WBA), and part of the Assessment Area covered the WBA. The “no-net-loss in wetland” principle and wetland enhancement and management scheme according to the TPB Guidelines (TPB PG-No. 12C) do not apply to this Project. The Subject Site is located within the “R(D)” zone. This zone is intended primarily for improvement and upgrading of existing temporary structures within the rural areas through redevelopment of existing temporary structures into permanent buildings.

*Wetland Conservation Area*

4.1.4 The Subject Site is about 520m away from the boundary of WCA. WCA comprises of the existing and contiguous, active or abandoned fishponds in the Deep Bay Area. The planning intention of WCA is to conserve the ecological value of the fishpond which form an integral part of the wetland ecosystem in the Deep Bay Area. New development within the WCA will not be allowed unless it is required to support the conservation of the ecological value of the area or the development is essential infrastructural project with overriding public interest.

*Site of Special Scientific Interest (SSSI) and Egretries*

4.1.5 There is no SSSI, ardeid winter roost or egretry within the Subject Site or 500m Assessment Area.

4.1.6 There are three SSSIs between 1.2km and 2.1km from the Subject Site, namely the Mai Po Marshes SSSI, the Inner Deep Bay SSSI and the Mai Po Village SSSI (Anon. 2022).

4.1.7 Two active egretries lie within the potential foraging distance of breeding egrets (Young 1993), including Mai Po Village egretry (1.8km from the Assessment Area) and Mai Po Lung egretry (2.3km from the 500m Assessment Area). Foraging ecology of Little Egret and Chinese Pond Heron nesting in Mai Po Village SSSI Egretry was studied previously (Wong 1992, Young 1998, City University of Hong Kong. 2001). Fishpond was the most frequently used habitat by both species. Drained fishponds are particularly attractive to Little Egret (Young 1998). The average distances flown by Little Egret and Chinese Pond Heron were 2.1km and 1.6km respectively (Wong 1992, Young 1998). Foraging ecology of Little Egret and Chinese Pond Heron in Mai Po Village SSSI Egretry was also studied in 2011 during the EIA study of "Proposed Residential Cum Passive Recreation Development within "Recreation" Zone and "Residential (Group C)" Zone at Various Lots in DD 104, Yuen Long, N.T." (ENVIRON Hong Kong Limited. 2013). Most breeding birds of these two species took off from the Mai Po Village egretry flew towards Mai Po, Tam Kon Chau or other nearby wetlands to forage. Foraging ecology of Little Egret and Chinese Pond Heron nesting in Mai Po Lung Egretry was not studied previously, but the uses of foraging habitat and average flight distance of might be similar to the observations in the Mai Po Village SSSI Egretry.

*Mai Po Inner Deep Bay Ramsar Site*

4.1.8 About 1500 ha of wetland in the Mai Po and Inner Deep Bay region was designated as a Ramsar Site on 4 September 1995. The wetland habitats in the Ramsar Site included intertidal mudflats, mangroves, tidal shrimp ponds (*gei wais*), fishponds and reedbeds. The site serves as an important over-wintering and refuelling station site for the migratory waterbirds.

*Proposed Sam Po Shue Wetland Conservation Park*

4.1.9 The Proposed Sam Po Shue Wetland Conservation Park (WCP) is about 400m from the Subject Site and part of this WCP falls within the northern fringe of 500m Assessment Area. Sam Po Shue WCP is one of the five parks to be developed under the multi-functional WCPs System under the Northern Metropolis Development Strategy. The total area will be about 338 ha, covering the wetland in Lok Ma Chau, San Tin and area adjacent to Fairview Park. The WCP will provide four major functions, including: 1) enhance the ecological quality and biodiversity of the Northern Metropolis; 2) compensate for ecological and fisheries impacts arising from development of San Tin Technopole, to achieve no-net-loss in ecological function; 3) provide quality outdoor eco-education and recreation facilities for public enjoyment; and 4) introduce ecologically friendly and modernised aquaculture in the park. The commencement of development of the Sam Po Shue WCP is tentatively scheduled in 2026/2027. Construction works will be completed in phase works and finish in 2039.

*Vegetation*

4.1.10 No plant species considered of conservation importance / concern was reported in the Subject Site or 500m Assessment Area in reviewed literatures.

*Birds*

4.1.11 Only four bird species of conservation importance were recorded in the Subject Site during the EIA stage (AEIAR-205/2017) (**Figure 1**). These waterbird species were only present in low abundance. No bird species of conservation importance was reported in the Subject Site in other reviewed literatures.

4.1.12 Twenty bird species recorded in the Assessment Area during the EIA Stage were considered of conservation importance. These bird species were mainly recorded both in pond habitats and the Ngau Tam Mei Drainage Channel (hereafter NTMDC).

4.1.13 Yau Mei Site is located about 350m to the north of the present Subject Site. The 500m distance of YMST EIA covered the northern half of the present Assessment Area, including the urbanized/disturbed habitat of the Subject Site. Ecological surveys were conducted between September 2007 and August 2008. Thirty-five bird species of conservation importance were recorded in this EIA study (**Table 1**). The bird species of conservation importance were mostly waterbirds (e.g., Northern Shoveler *Anas clypeata*, Yellow Bittern *Ixobrychus sinensis*). These waterbird species were recorded in a variety of habitats, e.g., agricultural land, drainage channel, fishpond habitat, but only moderate numbers of common wetland-dependent species were present in the NTMDC south of the project area.

4.1.14 Ecological surveys of the REC Site EIA were conducted between January 2009 and July 2009 and between August 2010 and January 2011. Twenty-seven bird species of conservation importance were recorded in this EIA study. The bird species of conservation importance were mostly waterbirds (e.g., Black-faced Spoonbill *Platalea minor*). The NTMDC, despite of its concreted bottom and regular human disturbance, supported moderate abundance of foraging ardeids, particularly during low tides in winter.

4.1.15 During the R(D) Site EcoIA, 26 bird species of conservation importance were recorded. The NTMDC was found to provide foraging habitats to ardeids in winter. Food items might be brought in the NTMDC by tides. High counts of ardeids were occasionally recorded during dry season.

4.1.16 Ecological surveys of “Light Public Housing at Yau Pok Road, Yuen Long” were carried out in December 2022. Nine bird species were considered of conservation importance were recorded. These bird species were mainly recorded in NTMDC.

4.1.17 Fifteen bird species were considered of conservation importance were recorded in habitats outside the Subject Site in 2023 (**Appendix 1**). All were waterbird species, including Northern Shoveler *Anas clypeata*, Eurasian Wigeon *Mareca penelope*, Little Grebe *Tachybaptus ruficollis*, Black-crowned Night Heron *Nycticorax nycticorax*, Chinese Pond Heron *Ardeola bacchus*, Grey Heron *Ardea cinerea*, Great Egret *Ardea alba*, Little Egret *Egretta garzetta*, Great Cormorant *Phalacrocorax carbo*, Black Kite *Milvus migrans*, Pied Avocet *Recurvirostra avosetta*, Common Greenshank *Tringa nebularia*, Common Redshank *Tringa tetanus* and Black-winged Stilt *Himantopus himantopus*. As in the EIA stage, these bird species of conservation importance were mostly recorded in the NTMDC and pond habitats.

4.1.18 Ecological surveys of “S12A Planning Application Mai Po & Fairview Park OZP No. S/YL-MP/8 – Rezoning from “Residential (Group D)” to “Residential (Group C) 1” (Y/YL-MP/10) were carried out between January and May 2024. Twenty-six bird species considered of conservation importance were recorded.

4.1.19 Twenty-six bird species were considered of conservation importance were recorded in habitats outside the Subject Site during the ecological monitoring of the Light Public Housing at Yau Pok Road between April 2024 and June 2025. Most of these bird species were waterbird species. Most of these waterbird species were recorded in

NTMDC, flood storage pond and temporary pond of YMST. More than half of the waterbirds (51.5%) recorded in NTMDC between April 2024 and June 2025 were ardeids. Ardeids are known to be able to tolerate high levels of disturbance and human activities (Lansdown *et al*. 2000). Abundance of waterbirds recorded in the temporary pond of YMST was low. Apart from the survey in April 2024, number of waterbirds recorded during the monthly monitoring surveys was lower than 10 birds between April 2024 and June 2025.

4.1.20 During the EIA stage (AEIAR-205/2017), no major flight line of waterbirds was observed over the Subject Site. Waterbirds mainly flew along the drainage channel within the Assessment Area. Very few birds (2.4% of total observed) flew across the Subject Site as it and the surroundings were mainly urbanized/disturbed area, which supported low bird abundance. Area of urbanized/disturbed near the Subject Site increased after the construction of light public house in 2024. This change might further reduce the flight activities across the Subject Site.

4.1.21 The flight line surveys of other previous studies (REC Site EIA, YMST EIA, R(D) Site EcoIA) also revealed that waterbirds mainly flew along NTMDC. The flight zone above the Subject Site was rarely used by waterbirds. During the most recent study carried out in the S12A Planning Application Mai Po & Fairview Park OZP No. S/YL-MP/8 (Y/YL-MP/10), same flight pattern was observed. Only two flight lines were identified above the Subject Site. One of those merely passed across the northern fringe of the Site. A north-southwest flight line across the Site was recorded, but this flight line only accounted for 4.36% of total observed birds.

*Other Terrestrial Fauna*

4.1.22 Significant observations of other terrestrial fauna within the 500m Assessment Area from reviewed literature included Japanese Pipistrelle *Pipistrellus abramus*, Javan Mongoose *Herpestes javanicus*, Many-banded Krait *Bungarus multicinctus*, King Cobra *Ophiophagus hannah*, Chinese Bullfrog *Hoplobatrachus rugulosus*, Pale Palm Dart *Telicota colon*, Plain Hedge Blue *Celastrina lavendularis*, Danaid Eggfly *Hypolimnas misippus*, Scarlet Basker *Urothemis signata* and Coastal Glider *Macrodiplax cora*. Records of these species were only present in very low abundance and irregularly recorded.

*Aquatic Fauna*

4.1.23 There was no significant observation in the Subject Site or 500m Assessment Area from the reviewed literatures.

## Table 1 Fauna Species of Conservation Importance from Previous Studies

| Fauna | YMST EIA [1] | REC Site EIA [2] | R(D) Site EcoIA [3] | EIA Stage AEIAR-205/2017 [4] | Yau Pok Light Public House [5] | 2023 Ecological survey | R(D) Site S12A Y/YL-MP/10 | Yau Pok monitoring survey | Local/ Regional/ International Conservation Status [6] | Commonness & distribution in Hong Kong [6] |
|---|---|---|---|---|---|---|---|---|---|---|
| Mammal | | | | | | | | | | |
| Japanese Pipistrelle *Pipistrells abramus* | | + | | + | | + | | | WAPO | Widely distributed throughout Hong Kong |
| Small Asian Mongoose *Herpestes javanicus* | | + | | | | | | | WAPO | Fairly widely distributed in countryside areas in the New Territories. |
| Birds | | | | | | | | | | |
| Common Teal *Anas crecca* | + | + | + | | + | | | | WAPO; RC | Common winter visitor. Found in Deep Bay area, Shuen Wan, Tai Lam Chung Reservoir, Victoria Harbour, Urban Park. |
| Northern Shoveler *Spatula clypeata* | + | | | | + | + | + | + | WAPO; RC | Abundant winter visitor. Found in Deep Bay area |
| Eurasian Wigeon *Mareca penelope* | | | | | | + | | + | WAPO; RC | Abundant winter visitor. Found in Deep Bay area, Tai Lam Chung. |
| Mallad *Anas platyrhynchos* | | | | | | | + | | WAPO, RC | Scarce winter visitor. Found in Deep Bay area, Tai Lam Chung, Hok Tau Reservoirs, Tolo Harbour, Nam Chung, Long Valley, Kam Tin. |
| Eurasian Pintail *Anas acuta* | | | | | | | | + | WAPO, RC | Abundant winter visitor. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin. |
| Little Grebe *Tachybaptus ruficollis* | + | + | + | + | | + | + | | WAPO; LC | Common resident. Found in Deep Bay area. |
| Black-faced Spoonbill *Platalea minor* | + | + | + | + | | | | + | IUCN: endangered; WAPO; PGC | Common winter visitor. Found in Deep Bay area. |
| Yellow Bittern *Ixobrychus sinensis* | + | | | | | | | + | WAPO; (LC) | Uncommon summer visitor and passage migrant. Found in Deep Bay area, Chek Keng, Tai Long Wan. |
| Cinnamon Bittern *Ixobrychus cinnamomeus* | + | | | | | | + | | WAPO; LC | Uncommon passage migrant and scarce summer visitor. Found in Deep |

| Fauna | YMST EIA [1] | REC Site EIA [2] | R(D) Site EcoIA [3] | EIA Stage AEIAR-205/2017 [4] | Yau Pok Light Public House [5] | 2023 Ecological survey | R(D) Site S12A Y/YL-MP/10 | Yau Pok monitoring survey | Local/ Regional/ International Conservation Status [6] | Commonness & distribution in Hong Kong [6] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Bay area, Long Valley, Tai Yuen (Sheung Shui), Pui O. |
| Black-crowned Night Heron *Nycticorax nycticorax* | + | + | + | + | | + | + | + | WAPO; (LC) | Common resident and migrant. Widely distributed in Hong Kong |
| Striated Heron *Butorides striatus* | + | | | | | | | | WAPO; (LC) | Common summer visitor. Widely distributed in Hong Kong. |
| Chinese Pond Heron *Ardeola bacchus* | + | + | + | + | + | + | + | + | WAPO; PRC (RC) | Common resident. Widely distributed in Hong Kong. |
| Grey Heron *Ardea cinerea* | + | + | + | + | + | + | + | + | WAPO; PRC | Common winter visitor. Found in Deep Bay area, Starling Inlet, Kowloon Park, Cape D'Aguilar. |
| Purple Heron *Ardea purpurea* | + | + | | + | | | | | WAPO; RC | Uncommon passage migrant. Found in Deep Bay area. |
| Great Egret *Ardea abla* | + | + | + | + | + | + | + | + | WAPO; PRC (RC) | Common resident and winter visitor. Widely distributed in Hong Kong. |
| Intermediate Egret *Ardea intermedia* | + | + | + | | | | + | + | WAPO; RC | Resident and passage migrant. Found in Deep Bay area, Tai Long Wan, Starling Inlet, Tai O, Cape D'Aguilar. |
| Little Egret *Egretta garzetta* | + | + | + | + | + | + | + | + | WAPO; PRC (RC) | Common resident, migrant and winter visitor. Widely distributed in coastal area throughout Hong Kong. |
| Eastern Cattle Egret *Bubulcus coromandus* | | | | + | | | | + | WAPO (Cap 170); (LC) | Resident and common passage migrant. Widely distributed in Hong Kong |
| Great Cormorant *Phalacrocorax carbo* | + | + | + | + | | + | + | + | WAPO; PRC | Common winter visitor. Widely distributed in coastal areas throughout Hong Kong. |
| Black Kite *Milvus migrans* | + | | | + | | + | + | + | WAPO; (RC) | Common resident and winter visitor. Widely distributed in Hong Kong. |
| Besra *Accipiter virgatus* | | | | | | | + | | WAPO (Cap 170); Class 2 Protected Animal of China; | Common resident and migrant. Found in Tai Po Kau, Deep Bay area, Chek Lap Kok, Cheung Chau, Soko Islands |

| **Fauna** | **YMST EIA [1]** | **REC Site EIA [2]** | **R(D) Site EcoIA [3]** | **EIA Stage AEIAR-205/2017 [4]** | **Yau Pok Light Public House [5]** | **2023 Ecological survey** | **R(D) Site S12A Y/YL-MP/10** | **Yau Pok monitoring survey** | **Local/ Regional/ International Conservation Status [6]** | **Commonness & distribution in Hong Kong [6]** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Appendix 2 of CITES | |
| Common Kestrel *Falco tinnunculus* | | | | + | | | | | WAPO (Cap 170); Class 2 Protected Animal of China; Appendix 2 of CITES | Common autumn migrant and winter visitor. Widely distributed in Hong Kong |
| Eastern Buzzard *Buteo japonicus* | | | | + | | | | + | WAPO (Cap 170); Class 2 Protected Animal of China; Appendix 2 of CITES | Common winter visitor. Widely distributed in Hong Kong |
| Black-winged Stilt *Himantopus himantopus* | + | + | + | | | + | + | + | WAPO; RC | Common migrant and wintor visitor. Found in Deep Bay area, Long Valley, Kam Tin. |
| Little Ringed Plover *Charadrius dubius* | + | + | + | + | | | | | WAPO; (LC) | Resident, common winter visitor and passage migrant. Widely distributed in freshwater areas throughout Hong Kong. |
| Greater Painted-snipe *Rostratula benghalensis* | + | + | + | | | | + | + | WAPO; LC | Locally common resident. Found in Ha Tsuen, Lok Ma Chau, Kam Tin, Long Valley, Hong Kong Wetland Park. |
| Pintailed/Swinhoe's Snipe *Gallinago stenura/megala* | + | + | + | | | | | | WAPO; LC | - |
| Black-tailed Godwit *Limosa limosa* | | | | | | | | + | WAPO; RC | Abundant passage migrant and winter visitor. Found in Deep Bay area. |
| Common Redshank *Tringa totanus* | | | | + | | + | + | + | WAPO (Cap 170); RC | Abundant passage migrant and winter visitor. Found in Deep Bay area. |
| Marsh Sandpiper *Tringa stagnatilis* | | | | | | | + | | WAPO; RC | Abundant winter visitor and migrant. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin, Sai Kung. |
| Common Greenshank *Tringa nebularia* | + | + | + | | + | + | + | + | WAPO; RC | Abundant winter visitor and migrant. Found in Deep Bay area. |
| Wood Sandpiper *Tringa glareola* | + | + | + | + | | | + | + | WAPO; LC | Common passage migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong. |

| **Fauna** | **YMST EIA [1]** | **REC Site EIA [2]** | **R(D) Site EcoIA [3]** | **EIA Stage AEIAR-205/2017 [4]** | **Yau Pok Light Public House [5]** | **2023 Ecological survey** | **R(D) Site S12A Y/YL-MP/10** | **Yau Pok monitoring survey** | **Local/ Regional/ International Conservation Status [6]** | **Commonness & distribution in Hong Kong [6]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Pied Avocet *Recurvirostra avosetta* | | | | | | + | | | WAPO; RC | Abundant winter visitor. Found in Deep Bay area |
| Black-capped Kingfisher *Halcyon pileata* | | | | | | | | + | WAPO; (LC) | Uncommon passage migrant and winter visitor. Widely distributed in coastal areas throughout Hong Kong. |
| White-throated Kingfisher *Halcyon smyrnensis* | + | + | + | + | | + | + | + | WAPO; (LC) | Common resident. Widely distributed in coastal areas throughout Hong Kong |
| Pied Kingfisher *Ceryle rudis* | + | | | | | | + | | WAPO; (LC) | Common resident. Widely distributed in lakes and ponds throughout Hong Kong. |
| Grey-chinned Minivet *Pericrocotus solaris* | | | | | | | | + | WAPO, LC | Locally common resident. Found in Tai Po Kau, Shing Mun, Ho Chung, Kadoorie Farm & Botanic Garden, Tung Ping Chau. |
| Greater Coucal *Centropus sinensis* | | + | + | + | + | | | + | WAPO; China Red Data Book: Vulnerable | Common resident. Widely distributed in Hong Kong. |
| Collared Crow *Corvus torquatus* | + | + | + | | + | | + | + | IUCN: near-threatened; WAPO; LC | 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. |
| Chinese Penduline Tit *Remiz consobrinus* | + | | | | | | + | | WAPO; RC | Common passage migrant and winter visitor. Found in Deep Bay area, Tai O , Mui Wo, Long Valley, Luk Keng, Chek Lap Kok |
| Red-throated Pipit *Anthus cervinus* | | + | + | | | | | | WAPO; LC | Common passage migrant and winter visitor. Widely distributed in dry agricultural areas throughout Hong Kong |
| Pallas's Grasshopper Warbler *Helopsaltes certhiola* | + | + | + | | | | | | WAPO; LC | Common autumn passage migrant. Found in wetland areas throughout Hong Kong |

| **Fauna** | **YMST EIA [1]** | **REC Site EIA [2]** | **R(D) Site EcoIA [3]** | **EIA Stage AEIAR-205/2017 [4]** | **Yau Pok Light Public House [5]** | **2023 Ecological survey** | **R(D) Site S12A Y/YL-MP/10** | **Yau Pok monitoring survey** | **Local/ Regional/ International Conservation Status [6]** | **Commonness & distribution in Hong Kong [6]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Bright-capped Cisticola *Cisticola exilis* | | + | + | | | | + | | WAPO; LC | Locally common winter visitor. Widely distributed in grassland throughout Hong Kong. |
| Zitting Cisticola *Cisticola juncidis* | + | + | + | + | | | + | | WAPO; LC | Common passage migrant and winter visitor. Widely distributed in grassland throughout Hong Kong. |
| Collared Crow *Corvus torquatus* | | | | + | | | | | IUCN: near-threatened; WAPO (Cap 170); LC | 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. |
| Red-billed Starling *Spodiopsar sericeus* | + | + | + | | | | | | WAPO; GC | Abundant winter visitor. Widely distributed in Hong Kong |
| White-cheeked Starling *Spodiopsar cineraceus* | + | | | | | | | | WAPO; PRC | Locally common winter visitor. Found in Deep Bay area, Kam Tin, Long Valley. |
| Daurian Starling *Agropsar sturninus* | + | | | | | | | | WAPO; LC | Uncommon autumn passage migrant. Found in Mai Po, Long Valley, Kam Tin, Lam Tsuen, Tolo Harbour area, Kowloon Park, Mui Wo, Ho Chung. |
| White-shouldered Starling *Sturnia sinensis* | + | + | + | | | | + | | WAPO; (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. |
| Bluethroat *Luscinia svecica* | + | | | | | | | | WAPO; LC | Locally common winter visitor. Widely distributed in wet agricultural areas throughout Hong Kong. |
| Red-throated Pipit *Anthus cervinus* | + | | | | | | | | WAPO; LC | Common winter visitor. Found in Kam Tin, Nam Chung, Shek Kong, Deep Bay area, Ho Chung, Lam Tsuen, Hok Tau, Island House and Kowloon Park. |

| **Fauna** | **YMST EIA [1]** | **REC Site EIA [2]** | **R(D) Site EcoIA [3]** | **EIA Stage AEIAR-205/2017 [4]** | **Yau Pok Light Public House [5]** | **2023 Ecological survey** | **R(D) Site S12A Y/YL-MP/10** | **Yau Pok monitoring survey** | **Local/ Regional/ International Conservation Status [6]** | **Commonness & distribution in Hong Kong [6]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Chinese Grosbeak *Eophona migratoria* | + | + | + | | | | | | WAPO; LC | Common winter visitor. Found in Kam Tin, Nam Chung, Shek Kong, Deep Bay area, Ho Chung, Lam Tsuen, Hok Tau, Island House and Kowloon Park. |
| Herpetofauna | | | | | | | | | | |
| King Cobra *Ophiophagus hannah* | | | | + | | | | | Appendix 2 of CITES; IUCN Red List: Vulnerable China Red Data Book: Critically endangered | Common and widespread in Hong Kong |
| Many-banded Krait *Bungarus multicinctus* | + | | | | | | | | China Red Data Book: Vulnerable PRC | Common and widely distributed in Hong Kong. |
| Chinese Bullfrog *Hoplobatrachus rugulosus* | | | | | | | + | | PRC | Widely distributed in Hong Kong |
| Butterfly | | | | | | | | | | |
| Pale Palm Dart *Telicota colon* | | + | + | | | | | | LC | Widely distributed throughout Hong Kong. |
| Plain Hedge Blue *Celastrina lavendularis* | + | | | | | | | | LC | Chuen Lung, Kap Lung, Tai Po Kau, Shing Mun Country Park, Tai Lam Country Park, Kadoorie Farm and Botanic Garden, Ngau Ngak Shan. |
| Danaid Egg-fly *Hypolimnas misippus* | + | + | + | | | | | | LC | Ngau Ngak Shan, Lung Kwu Tan, Hong Kong Wetland Park, Mount Parker, Cloudy Hill, Lin Ma Hang. |
| Dragonfly | | | | | | | | | | |
| Coastal Glider *Macrodiplax cora* | + | + | + | | | | | | LC | Frequents marshes and ponds with dense vegetation, especially adjacent to coastal areas. |
| Scarlet Basker *Urothemis signata* | + | + | + | | | | | | LC | Common in areas with abandoned fish ponds throughout Hong Kong. |

1: ENVIRON Hong Kong Limited (2015); 2: ENVIRON Hong Kong Limited (2013); 3: AEC (2014); 4: Glory Queen (2016); 5: Atkins (2023); 6: AFCD (2022)
LC = local concern, PRC = potential regional concern, RC = regional 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 (Fellowes *et al*,.2002).

# 5. Results of Habitat Mapping

**5.1.1** Habitats identified within the Subject Area in 2025 included plantation and urbanised/disturbed area (**Figures 1 & 2**, **Table 2**). Most area of the Subject Site was concrete paved and operated as public vehicle park. Plantations were mainly found on the engineering slope on the northern fringe of the Subject Site.

**Table 2 Habitats recorded within the Subject Site**

| Habitats | Size (ha) | Percentage (%) |
|---|---|---|
| Plantation | 0.27 | 7.14 |
| Urbanised/Disturbed | 3.51 | 92.86 |
| **Total** | **3.78** | **100** |

5.1.2 Habitats recorded within the Assessment Area included plantation, agricultural land, grassland, pond (fishpond and flood storage pond), drainage channel/nullah, reed and urbanised/disturbed (**Figures 1 & 3, Table 3**). Coverage of urbanised/disturbed habitat increased since the EIA stage and made up more than three quarters (77.56%) of the total area of the 500m Assessment Area. Other habitats within the Assessment Area (e.g., plantation, pond) were mostly fragmented and small in sizes. Another major change was that agricultural land at the northern fringe of the Assessment Area was managed as temporary wetland enhancement area prior to the construction of the Wetland Restoration Area (WRA) of the YMST EIA. This temporary pond is about 400m from the Subject Site and separated from the Subject Site by other habitats in between.

**Table 3 Habitats recorded within the 500m Assessment Area (excluding Subject Site)**

| Habitats | Size (ha) | Percentage (%) |
|---|---|---|
| Plantation | 4.52 | 3.54 |
| Agricultural Land | 0.13 | 0.10 |
| Grassland | 9.13 | 7.14 |
| Urbanised/Disturbed | 99.15 | 77.56 |
| Pond (fishpond & flood storage pond) | 8.88 | 6.95 |
| Reed | 0.13 | 0.10 |
| Drainage Channel / Nullah | 5.90 | 4.61 |
| **Total** | **127.84** | **100** |

# 6. Evaluation of Habitats and Species of Conservation Importance

6.1.1 The Subject Site is adjacent to the R(D) Site and located at the opposite site of the NTMDC of the REC Site (also the project area of Yau Pok Light Public House). The 500m Assessment Area of the Subject Site in fact largely overlapped with those of ecological studies carried out for development projects in the R(D) and REC Sites. Hence habitats within similar areas were ranked in these studies and the current application (i.e., also in AEIAR-205/12017).

6.1.2 The Subject Site fell within the assessment areas of previous studies conducted for the R(D) and REC Sites. Habitats identified within the Subject Site in 2025 included urbanised/disturbed and plantation. The ecological values of urbanised/disturbed and plantation habitats in EIA stage and 2023 were same as to those evaluated in studies performed for the R(D) and REC Sites (**Table 4**).

**Table 4 Comparison of ranking of ecological value of habitats within the Subject Site**

| Habitat | REC Site (Survey period: Jan 2009 – July 2011) | R(D) Site EcoIA (Survey period: Jan 2009 – July 2011) | AEIAR-205/2017 (Survey period: Jul 2009 – Jun 2010, Feb – Mar 2011, Jul 2014, Nov – Dec 2015, Jan 2016) | 2023 Ecological Surveys (Survey period: Feb – Jul 2023) | Light Public Housing at Yau Pok Road (Survey period: December 2022) | Planning Application Mai Po & Fairview Park OZP No. S/YL-MP/8 (Y/YL-MP/10) (Survey period: Jan – May 2024) |
|---|---|---|---|---|---|---|
| Urbanised/disturbed | Very Low | Very Low | Very Low | Very Low | Very Low | Very Low |
| Plantation | Very Low | Very Low | Very Low | Very Low | Very Low | Very Low |

6.1.3 Ecological value of habitats within the Assessment Area in 2023 (**Appendix 1**) remained largely similar to that of EIA stage, and ranked in other studies (**Table 5**). The ecological values of habitats were largely similar. Habitats of "moderate" ecological value included NTMDC and temporary pond of YMST project. The other habitats were ranked as value of "low to moderate", "low" or "very low".

6.1.4 With the increase of coverage of urbanised/disturbed habitats (i.e., also human activities), waterbirds utilising the wetland habitats in 500m Assessment Area are more disturbance tolerant compared to other wetland habitats in Hong Kong. The ecological value of agricultural land at the northern fringe of the 500m Assessment Area is managed as the temporary pond of YMST project, and the ecological value increased from "low to moderate" to "moderate". However, this pond will only exist temporarily. Once the Wetland Restoration Area of the YMST project operates, the pond will be filled for development.

6.1.5 Ecological values of habitats within the Subject Site and 500m Assessment Area remained largely similar over years. It is likely that the ecological values of habitats within the Subject Site and Assessment Area remained similar in 2025.

6.1.6 Previous studies consistently revealed that the main issue within this area is waterbird. Sensitive receivers of the current application will include waterbirds utilising the NTMDC and the temporary pond of YMST, and flight line of waterbirds along the NTMDC.

**Table 5 Comparison of ranking of ecological value of habitats within the Assessment Area**

| Habitat | REC Site (Survey period: Jan 2009 – July 2011) | R(D) Site EcoIA (Survey period: Jan 2009 – July 2011) | AEIAR-205/2017 (Survey period: Jul 2009 – Jun 2010, Feb – Mar 2011, Jul 2014, Nov – Dec 2015, Jan 2016) | 2023 Ecological Surveys (Survey period: Feb – Jul 2023) | Light Public Housing at Yau Pok Road (Survey period: December 2022) | Planning Application Mai Po & Fairview Park OZP No. S/YL-MP/8 (Y/YL-MP/10) (Survey period: Jan – May 2024) |
|---|---|---|---|---|---|---|
| Plantation | Very Low | Very Low | Very Low | Very Low | Very Low | Very Low |
| Agricultural Land | Low to moderate | Low | Low to moderate | Those managed as Temporary Pond of YMST Project: Moderate; Others: Low to moderate | Low | East of NTMDC: Low; West of NTMDC: Low to Moderate |
| Grassland* | Low to moderate | Low | Low to moderate | Low to moderate | Low | Low |
| Urbanised/Disturbed | Very Low | Very Low | Very Low | Very Low | Very Low | Very Low |
| Pond | Low | Low | Low to moderate | Low to moderate | Temporary Pond of YMST EIA: Moderate; Others: Low | Temporary Pond of YMST EIA: Moderate; Others: Low |
| Nullah | Low | Low | Low | Low | Low | Low |
| Drainage Channel | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| Reed** | Low | Low | Low to moderate | Low to moderate | Low | Low to Moderate |

* mapped as “grassland/shrubland” in REC Site, R(D) Site EcoIA and AEIAR 205/2017

** mapped as “grassland/shrubland” and “grassland” in AEIAR205/2017 and 2023 Ecological Surveys respectively

# 7. Impact Identification and Evaluation

## 7.1 Proposed Construction Works

7.1.1 The potential impacts to terrestrial and aquatic habitats arising from the construction works, including direct loss of habitats and indirect disturbance to habitats and associated wildlife, were assessed in accordance with Annexes 8 and 16 of the EIAO-TM. The main revisions of the layout plan of the current application from the EIA stage are the construction of medium rise buildings and increase of population.

## 7.2 Construction Phase Impacts

**Direct Habitat Loss and Direct Impact to Fauna species of Conservation Importance**

7.2.1 The Subject Site was covered by habitats of very low ecological value. The ecological impact of loss of these habitats is considered **insignificant** (**Table 6**). No mitigation for loss of these habitats is required.

7.2.2 The reviewed previous studies showed that there is no important habitat for fauna species of conservation importance within the Subject Site. Potential impact to species of conservation importance due to loss of the habitats in the Subject Site is considered **Insignificant**. No mitigation for loss of these habitats is required.

**Table 6 Potential direct ecological impacts to existing habitat within the Subject Site**

| Criteria | Urbanised/disturbed | Plantation |
|---|---|---|
| Habitat Quality* | Very low | Very low |
| Species* | Low flora and fauna diversity;<br><br>No floral species of conservation from previous studies;<br><br>Fauna species of conservation importance from previous studies: Japanese Pipistrelle, Little Grebe, Chinese Pond Heron, Little Egret and Grey Heron. All were present in very low abundance. | |
| Size/ Abundance | Major habitat loss in the Subject Site: 3.51ha;<br><br>Low faunal abundance | Very small: 0.27 ha;<br><br>Very low faunal abundance |
| Duration | Permanent loss of existing habitat | Permanent loss of existing habitat |
| Reversibility | Habitat loss would be permanent and irreversible. | Habitat loss would be permanent and irreversible. |
| Magnitude | Insignificant | Insignificant |
| Overall Impact Severity without Mitigation | **Insignificant** | **Insignificant** |

* based on 2023 Ecological Surveys and previous studies

### Indirect disturbance Impact due to Construction Disturbance

7.2.3 The construction activities, including excavation and piling during foundation works, and materials loading/unloading, and concreting during superstructure works, are likely to produce noise and dust, and cause disturbance.

7.2.4 Noise and dust generated during construction phase might lead to temporary reduced utilisation/avoidance of habitats adjacent to the Subject Site. The significance of construction impacts will depend upon the distance between the source of disturbance and sensitive receivers, the type and frequency of disturbance and the tolerance of species to disturbance. The immediate surroundings of the Subject Site are mostly urbanized/disturbed habitat, which is considered of very low ecological value. Other habitat types near the Subject Site included grassland (low to moderate ecological value), flood storage pond (low to moderate ecological value) and NTMDC. Grassland and flood storage pond are of low to moderate ecological value. The NTMDC and temporary pond of YMST project are ranked of moderate ecological value. The latter is away from (about 400m) the Subject Site. The major concern would be the potential disturbance to waterbirds utilising the NTMDC, which is adjacent to the Subject Site, during the wintering season.

7.2.5 Traditional percussive piling method, which will cause significant noise and vibration, will be avoided. Alternative piling method (non-percussive piling methods) that are

quieter than the percussive piling method causing less shocks or vibrations, will be adopted as mitigation. With the adoption of non-percussive piling method, it is expected that the potential impact of construction noise to fauna utilizing the habitats adjacent to the Subject Site, particularly NTMDC, will be reduced from **Moderate to Minor**. The potential impact of dust to fauna utilizing the habitats adjacent to the Subject Site will be reduced from **Moderate to Minor** by implementation of good site practice and measures recommended in relevant chapters of this application. The temporary pond of YMST is away from (about 400m) the Subject Site and hence impact by construction noise and dust is anticipated to be **Minor**.

7.2.6 There will be a setback area of 50m between the buildings and NTMDC. The setback area will increase the distance between buildings and NTMDC, and hence will reduce the potential disturbance to NTMDC and associated fauna during both construction and operation phases. Potential disturbance to flight line along the NTMDC will also be minimised by the setback area during both construction and operation phases.

7.2.7 Hoarding of 3.5m tall with colour blending with the environment will be erected along site boundary. These hoardings will delineate the works site boundary can screen disturbance to the nearby habitats during construction phase. The workers will be instructed not to disturb any nearby habitats. Furthermore, the site boundary will be clearly defined and any works beyond the boundary would be strictly prohibited.

7.2.8 Potential impacts to nearby aquatic habitats (e.g., NTMDC, flood storage pond) during the construction phase would mainly arise from sedimentation due to surface runoff. The temporary pond of YMST is not likely to be affected by runoff as it is separated from the Subject Site by the NTMDC. Elevated suspended solids levels caused by site runoff could increase the suspended solids load in the water bodies and could decrease dissolved oxygen levels. A lower oxygen level would affect stationary species, whilst mobile species would tend to temporarily avoid the area. The result could be a temporary reduction in aquatic life abundance, and might affect the uses as foraging and roosting habitats by waterbirds. The potential impact due to runoff is considered **Minor** to **Moderate**. Potential impacts due to runoff will be reduced to **Insignificant** by implementation of good site practice and measures recommended in relevant chapters of this application.

**Potential Impact to Recognized Sites of Conservation Importance**

7.2.9 The Subject Site is located outside WBA and is 520m away from the WCA. Construction works will not affect the ecological integrity of the fishponds and wetlands within WCA, or cause directly habitat loss in WBA or WCA.

7.2.10 Other recognized sites of conservation importance in Northwest New Territories, including the Mai Po Inner Deep Bay Ramsar Site, Mai Po Nature Reserve, Mai Po Village SSSI, Mai Po Marshes SSSI, are further away from the Subject Site, and also sheltered from the Subject Site by other developed areas in between. Construction disturbance from the proposed project will be localized, reversible and short-term. The potential impact to these recognized sites of conservation importance is considered **Insignificant**.

**Indirect Impact to Species of Conservation Importance**

7.2.11 Construction works will affect the habitats adjacent to the Subject Site, including grassland, flood storage pond and NTMDC. Utilisation of these habitats by these fauna species might be affected by the construction works (e.g., noise, dust). The potential indirect impact to species of conservation importance is ranked as

**Moderate**. Potential disturbance due to construction works to these species will be reduced from **Moderate** to **Minor** by measures described in **Section 8** of this chapter.

## 7.3 Operational Phase Impacts

7.3.1 Potential impacts during operational phase will include human activities and noise, traffic, artificial lightings and noise barriers.

**Human activities and Noise**

7.3.2 Although the current application will result in higher population, human activities will mainly be indoors and noise from residential houses will be screened by walls of houses and fence wall of the Subject Site. Adverse impact to fauna of surrounding habitats due to human activities is not expected.

7.3.3 High counts of waterbirds were occasionally recorded in the NTMDC near the Subject Site at low tides in dry season. However, due to the long distance of setback area, indoors human activities in the buildings are not likely to affect the waterbirds utilising the NTMDC. In addition, mudflat in the NTMDC is lower in elevation and birds foraging in these habitats might not be able to see the human activities in the Subject Site. Furthermore, as revealed by ecological monitoring of the Light Public Housing at Yau Pok Road between April 2024 and June 2025. More than half of the waterbird species recorded in NTMDC were ardeids. Ardeids are known to be able to tolerate high levels of disturbance and human activities (Lansdown *et al*. 2000). Severe impact to waterbirds utilising the NTMDC due to human activities in the Subject Site is not expected.

7.3.4 The Tin Shui Wai channel is near high-rise buildings of more than 28 storeys of housing areas (e.g., Tin Yan, Tin Chak). Utilisation of this channel by Black-faced Spoonbills is reported in social media, e.g., 83 birds on 9 February 2025, 107 birds on 10 February 2025, 63 birds on 15 February 2025. These observations showed that even waterbird species of conservation importance do not avoid wetland habitats near high-rise buildings and high level of human activities. Uses of foraging habitats by waterbirds (including Black-faced Spoonbill) within the sight of Castle Peak Road was reported in “EcoIA for Proposed Residential Development within R(D) zone at Various Lots in DD 104 and Adjoining G.L. Yuen Long, N.T. (Y/YL-MP/6 and Y/YL-MP/10)”. This example showed that waterbird species of conservation importance do not avoid wetland habitats subjected to high level of traffic activities.

7.3.5 The Subject Site and the surrounding area are mainly composed of urbanized/disturbed, which is subjected to the high level of disturbance (e.g., noise of existing traffic). Fauna in the surrounding habitats have been habituated to disturbance from noise. Waterbirds in NTMDC and other wetlands in Assessment Area are already habituated to the relatively high levels of existing human activity compared to other wetlands in Hong Kong. In fact, the two sides of the NTMDC are adjacent to roads (i.e., Yau Pok Road and Kam Pok Road). Due to the existing traffic on these roads, significant increase in human activities near the NTMDC is not expected during operational phase. Also, it is not expected that all residents would go out or stay in open areas at the same time. Waterbirds in NTMDC is not expected to be adversely affected by increase human activities.

7.3.6 The Temporary Pond of YMST is about 400m from the Subject Site. Fauna utilising habitats in this pond is not likely to be affected by noise and human activities from the Subject Site due to the long distance. In addition, the interface of between the pond

and Yau Pok Road is fenced and screened by tall vegetation. This will further reduce disturbance to fauna in this pond by human activities.

7.3.7 Potential impact to fauna of surrounding habitats due to human activities and noise is ranked as **Insignificant**.

**Traffic Noise and Disturbance**

7.3.8 Traffic flow will increase during operational phase. Traffic in-and-out of the Subject Site will mainly make use of Kam Pok Road. Traffic activities on Kam Rok Road will be separated from the temporary pond of YMST by the NTMDC and hence will not adversely affect the fauna utilising this area. Traffic will potentially cause disturbance to habitats along the Kam Pok Road, including urbanized/disturbed, grassland, flood storage pond, upstream section of NTMDC and agricultural land. These habitats are already subjected to the existing disturbance from traffic of Kam Pok Road and Yau Pok Road. Hence, the increase of traffic flow will only be quantitative change, rather than a qualitative change. In addition, traffic peak hours will only occasionally coincide with peak bird activities in NTMDC (which is related to tidal cycle). The potential impact to surrounding habitats and associated fauna due to traffic noise during operation phase will be **Insignificant**. No mitigation measure is necessary.

**Runoff and drainage/effluent discharge**

7.3.9 The potential impacts of surface runoff and drainage/effluent discharge have been addressed in relevant chapters of this application. During operation, sewage generated from the proposed development site will be pumped to Yuen Long Effluent Polishing Plant (YLEEP). Surface runoff from the development site will be collected by drainage system and discharged into the NTMDC after passing through screening facilities. The impact due to surface runoff and drainage/effluent discharge will be **Insignificant**.

**Habitat Fragmentation**

7.3.10 The east and west parts of the Assessment Area are already fragmented by the drainage channel in existing condition. The Subject Site is mainly surrounded by urbanized/disturbed, which support low abundance of fauna. Frequent movement of wildlife through the Subject Site in existing condition is not expected. The proposed development project will only convert urbanized/disturbed habitat to residential landscape area during operational phase and hence will not cause additional habitat discontinuities. The potential impact due to habitat fragmentation is anticipated to be **Insignificant**.

**Artificial Lightings**

7.3.11 The Assessment Area is mostly developed/formed and the proposed buildings will be 50m away from the NTMDC. Residential buildings and other lighting sources are already present in localities near the Subject Site for long and fauna inhabiting in nearby habitats have probably habituated to lighting or avoided these areas. Light public houses to the west of the NTMDC built recently resulted in further increase of developed area and amount of artificial lightings in the Assessment Area. Lights from the residential buildings in the Subject Site are not expected to be very strong and cause significant additional lighting impact. Other lightings in the Subject Site will only be directed to target areas and lighting will be kept to minimum lux level for safety. Potential impacts to fauna from this source are ranked as **Insignificant**.

**Barrier Effect to Bird Flight**

7.3.12 As revealed from reviewed literature, the flight zone above the Subject Site was rarely used by waterbirds. Large waterbirds mainly flew along the NTMDC within the

Assessment Area. There will be setback area of 50m between the buildings in the Subject Site and the NTMDC. Flights of waterbirds will not be impeded by buildings in the Subject Site. The potential impact due to barrier to the flight of birds is considered **Insignificant**.

7.3.13 Ecological surveys of the S12A Planning Application Mai Po & Fairview Park OZP No. S/YL-MP/8 (Y/YL-MP/10) identified two minor flight lines were above the Subject Site. The flight line passed near the northern fringe of the Subject Site will not be impeded by buildings. The layout will not be create any barrier to the north to southwest flight line in the Subject Site during operation phase

**Noise Barrier and Bird Collision**

7.3.14 No major flight line was observed over the Subject Site from reviewed literature. Due to the disturbed nature of the Subject Site and surrounding areas, the Subject Site is not considered as important ecological corridor. The potential impact of bird collision is ranked as **Insignificant**. As a precautionary measure, building materials such as are opaque, non-reflective panels with color will be used for construction of noise barriers (if needed) to mimimise the risk of bird collision.

**Landscape Planting**

7.3.15 The Subject Site was mostly devoid of vegetation cover and only surrounded by narrow strips of plantation of an exotic species *Leucaena leucocephala*. These vegetation cover made up of exotic plant species generally support low diversity of fauna. Some trees of existing plantation will be preserved in the current application.

7.3.16 Vegetation cover in the Subject Site will increase from about 7% of existing condition to not be less than 30% during operational phase. Plant species providing berry (e.g., *Ficus microcarpa*, *Cinnamomum camphora*) and nectar (e.g., *Bauhinia variegata*, *Hibiscus rosa*) can be included in the planting list. Plants producing berry will enhance the food resources of birds. Nectar plants will also provide food resources for butterflies. Both fauna groups will benefit from landscape planting. The planting of trees will also provide roosting habitats for birds. The potential impact of replacement of existing plantation by landscape planting to birds and butterflies will be **positive**.

**Potential Impact to Recognized Sites of Conservation Importance**

7.3.17 Regarding the potential disturbance impacts during operational phase to recognised sites of conservation importance in Northwest New Territories, including the Mai Po Inner Deep Bay Ramsar Site, Mai Po Nature Reserve, Mai Po Village SSSI Egretry, Mai Po Lung Egretry, Mai Po Marshes SSSI, Wetland Conservation Area and Wetland Buffer Area, it is considered unlikely as the Subject Site is separated from these sites by long distances. Disturbance of noise and artificial lighting from the residential buildings will be confined to areas adjacent to the Subject Site. The potential impact to these sites from the development project during operational phase is considered **Insignificant**.

**Potential Impact to Species of Conservation Importance**

7.3.18 The Project will provide residential areas during operational phase. The building layout is with 50m buffer area from the NTMDC, no intense disturbance is anticipated. The club house is located more than 100m away from the NTMDC so human activities inside the Subject Site will be screened by the wall of buildings, fence wall and landscape buffer. Traffic peak hours will only occasionally coincide with peak bird activity, which changes with tidal levels. Potential impact affecting the utilization of habitats surrounding the Subject Site by the fauna species of conservation importance listed in **Table** is considered **Insignificant**.

7.3.19 Potential impacts during both construction and operational phases are summarised in **Table 7**.

## Table 7 Summary of Potential Impact During Construction and Operational Phases

| Impact | Source | Receiver | Nature of Impacts | | | | | | Significance of an ecological impact | Mitigation Required |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Habitat quality | Species affected | Size-abundance | Duration | Reversibility | Magnitude | | |
| Construction phase | | | | | | | | | | |
| Direct habitat loss | Construction works | Urbanised/disturbed and plantation | Very low | Low diversity of flora and fauna | Urbanised/disturbed: 3.51 ha; Plantation: 0.27ha | Permanent | Irreversible | Insignificant | Insignificant | No |
| Direct impact to fauna species of conservation importance | Construction works | Urbanised/disturbed and plantation | Very low | Japanese Pipistrelle, Little Grebe, Chinese Pond Heron and Grey Heron from reviewed literature | Very low | Permanent | Irreversible | Insignificant | Insignificant | No |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Indirect disturbance impact to nearby habitats and "Recognized Sites of Conservation Importance" due to construction disturbance (noise and dust) | Construction works | Surrounding habitats included urbanised/dsiturbed, flood storage pond, grassland, NTMDC, temporary pond of YMST | Very low for urbanised/disturbed;<br>Low to moderate for grassland and flood storage pond;<br>Moderate for NTMDC and temporary pond of YMST | Mostly common species, but some are of conservation importance | Moderate bird abundance in NTMDC, low/very low fauna abundance in other habitats | Temporary | Transient and reversible | Moderate to adjacent habitats if no mitigation measures;<br>Minor to Temporary Pond of YMST due to away from the Subject Site,<br>Insignificant for "Recognized Sites of Conservation Importance" due to long distance | Minor with mitigation measures applied | Yes<br>Erection of 3.5m tall hoardings along site boundary;<br>Use of non-percussive piling method;<br>Use of quiet/silenced equipment (QPMEs);<br>Provision of mobile noise barriers in adjacent to construction plants or provision of acoustic screens by the Contractor(s);<br>Implementation of good site practice |

| Impact | Source | Receiver | Nature of Impacts | | | | | | Significance of an ecological impact | Mitigation Required |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Habitat quality | Species affected | Size-abundance | Duration | Reversibility | Magnitude | | |
| Indirect impacts to fauna species of conservation importance | Construction works | Surrounding habitats included urbanised/disturbed, flood storage pond, grassland, NTMDC | Refer to above | Mainly waterbirds species recorded in NTMDC | Abundance within the Assessment Area are very small in comparison to the Deep Bay population. | Temporary | Transient and reversible | Refer to above | Refer to above | Refer to above |

| Impact | Source | Receiver | Nature of Impacts | | | | | | Significance of an ecological impact | Mitigation Required |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Habitat quality | Species affected | Size-abundance | Duration | Reversibility | Magnitude | | |
| Site runoff | Construction works | NTMDC | Moderate | Mostly common species, but some are of conservation importance | Low abundance | Temporary | Reversible | Minor to Moderate with no mitigation measures | Insignificant with mitigation measures applied | Yes, by implementation of Good Site Practice |
| Operation phase | | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Indirect disturbance to nearby habitats and "Recognizrd Sites of Conservation Importance" due to human activities and noise, traffic noise and disturbance | Proposed development | Urbanised/disturbed habitat, grassland,agricultural land, flood storage pond, NTMDC and temporary pond of YMST, Recognized Sites of Conservation Importance | Very low for urbanised/disturbed;<br>Low to moderate for grassland, agricultural land and flood storage pond;<br>Moderate for NTMDC and temporary pond of YMST | Mostly common species, but some are of conservation importance | Low abundance | Permanent | Irreversible | Insignificant | Insignificant | No |
| Indirect disturbance to fauna species of | Proposed development | Surrounding habitats included urbanised/d | Refer to above | Mainly waterbirds species recorded in NTMDC | Abundance within the Assessment Area are very | Permanent | Irreversible | Insignificant | Insignificant | Human activities in the Subject Site will be indoors and screened by |

| Impact | Source | Receiver | Nature of Impacts | | | | | | Significance of an ecological impact | Mitigation Required |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Habitat quality | Species affected | Size-abundance | Duration | Reversibility | Magnitude | | |
| conservation importance | | siturbed, flood storage pond, grassland, NTMDC | | | small in comparison to the Deep Bay population. | | | | | landscape plantation in 50m setback area; |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Runoff, drainage /effluent discharge | Proposed development | NTMDC | Moderate | Mostly common species, but some are of conservation importance | Low abundance | Permanent | Irreversible | Insignificant | Insignificant | Discharge will pass through screening facilities such as standard gully grating and trash grille, Discharge of the sewage will be eventually pumped to YLEPP, and will follow the requirement of no net increase of pollution loading<br>There will be no adverse impact on water quality. |
| Habitat fragmentation | Proposed development | Fauna inhabiting the habitats within the | Vary with habitat types, mostly are of low ecological value | Mostly common species | Low | Permanent | Irreversible | Insignificant | Insignificant | No.<br>The Project will convert disturbed habitats to residential areas, and will not cause |

| Impact | Source | Receiver | Nature of Impacts | | | | | | Significance of an ecological impact | Mitigation Required |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Habitat quality | Species affected | Size-abundance | Duration | Reversibility | Magnitude | | |
| | | Assessment Area | | | | | | | | fragmentation of continouous habitats. |
| Artificial light | Lightings in the Subject Site | Nocturnal fauna | Low | Common species | Low | Permanent | Irreversible | Insignificant | Insignificant | No.<br>Areas surrounding the Subject Site are subjected to existing lightings for long time. Fauna sensitive to lightings probably have avoided these areas. |

| Impact | Source | Receiver | Nature of Impacts | | | | | | Significance of an ecological impact | Mitigation Required |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Habitat quality | Species affected | Size-abundance | Duration | Reversibility | Magnitude | | |
| Barrier effect to bird flight | Buildings in the Subject Site | Large waterbirds of low flight manoeuvrability | Vary with habitat types, mostly are of low ecological value | Mostly common species | Low | Permanent | Irreversible | Insignificant | Insignificant | No<br>These birds mostly flew along the Ngau Tam Mei Drainage Channel;<br>Potential impact minimised by the 50m setback area between buildings and the NTMDC |

| Impact | Source | Receiver | Nature of Impacts | | | | | | Significance of an ecological impact | Mitigation Required |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Habitat quality | Species affected | Size-abundance | Duration | Reversibility | Magnitude | | |
| Noise barrier and bird collision | Noise barriers | Birds | Low | Mostly common species | Low | Permanent | Irreversible | Insignificant | Insignificant | Minimise by using materials which are opaque, non-reflective panels with colour for construction of noise barriers (if needed) |
| Landscape Planting | Landscape Planting | Birds and butterflies | Low | Mostly common species | Low | Permanent | Irreversible | Positive | Positive | Planting of bird-attracting and butterfly-attracting plant species |

# 8. Mitigation Measures

8.1.1 The proposed mitigation measures under the previous approvals will be adopted in the current proposed development scheme. Literature review and ecological surveys showed that high counts of waterbirds occasionally foraged in the NTMDC during low tides in winter. Piling method (non-percussive piling methods) that are quieter than the percussive piling method causing less shocks or vibrations, will be adopted as mitigation). With the adoption of non-percussive piling method, it is expected that the disturbance impact to fauna utilizing the habitats near the Subject Site, particularly NTMDC, could be reduced to **Minor**.

8.1.2 Hoarding of 3.5m tall with colour blending with the environment will be erected to delineate the works site boundary. These hoardings will screen disturbance to the nearby habitats during construction phase. The workers will be instructed not to disturb any nearby habitats. Furthermore, the site boundary will be clearly defined (i.e. fenced with the screening materials mentioned above) and any works beyond the boundary would be strictly prohibited.

8.1.3 Construction noise will be further minimised by the use of quiet/silenced equipment (QPMEs), provision of mobile noise barriers in adjacent to construction plants, or provision of acoustic screens by the Contractor(s). Other measures proposed in compliance with the Noise Control Ordinance will also be enforced and monitored as a mitigation measure under the Noise Impact Assessment.

8.1.4 Other indirect construction disturbance (e.g., dust, surface runoff) will be mitigated by good site practice and measures discussed in relevant chapters of this report.

8.1.5 Provision of 50m building setback on the western side measured between the residential towers and the edge of the nullah in NTMDC for planting/landscaping treatment and internal circulation purposes. The setback area will include preserved the number of 80 existing trees of about 16m+ in height and newly planted heavy standard trees. The landscape planting area facing Kam Pok Road will be 8 to 20m in width. Trees and shrub will also be planted near T6 and T2, in the direction facing Kam Pok Road. This layout design will screen off human activities within the Subject Site and minimize the potential impact to wildlife in the surrounding areas, particularly waterbirds in the NTMDC, during construction and operational phases.

8.1.6 Most birds were observed flying along the NTMDC, located on the western side of the Subject Site. The 50m building setback area will minimise the potential impact to bird flight alone the NTMDC. The flight zone above the Subject Site is rarely used by birds. There will be no barrier to the north to southwest flight line mentioned in Section 4.1.21 in the current layout. Waterbirds can still fly across the Subject Site using this flight line during operational phase.

8.1.7 Minimization of bird collision will also be taken into account in the design of noise barrier (if needed). Building materials such as opaque, non-reflective

panels with colour blend in with the environment will be used for construction of noise barriers to reduce the risk of bird collision, particularly under dim condition (e.g., dusk and dawn) to reduce bird collision.

# 9. Cumulative Impacts

9.1.1 Potential cumulative impact of habitat loss, construction disturbance, increased human activities and noise, and traffic noise of the Project with other projects in nearby locations are evaluated in the following sections.

9.1.2 There are a few works projects near the Subject Site. These included two planned private development sites as following:

- "S12A Planning Application Mai Po & Fairview Park OZP No. S/YL-MP/8 – Rezoning from "Residential (Group D)" to "Residential (Group C) 1" Zone For Various Lots in D.D. 104 and the Adjoining Government Land in Yuen Long" (Y/YL-MP/10);
- "Light Public Housing at Yau Pok Road, Yuen Long Project Profile"; and
- EIA 227/2015 Comprehensive Development and Wetland Protection near Yau Mei San Tsuen, Yuen Long.

9.1.3 The current Subject Site is located outside the boundary of WBA. The planning intention of WBA is to protect the ecological integrity of the fishponds and wetlands within WCA and to prevent development that would have a negative off-site impact on the ecological value of those fishponds. This planning intention is therefore not applicable to the Subject Site.

9.1.4 The construction of light public houses at the REC Site mainly affected non-wetland habitats (e.g., grassland, urbanised/disturbed). Only very small area and highly fragmented wetland habitats (including 0.22ha reed, 0.5ha pond and 0.1ha seasonal wet grassland) of low or very low ecological value were lost.

9.1.5 The proposed development at the YMST Site will affect 4.9ha agricultural land, 1.2ha pond area, 0.9ha marsh, 0.2ha reed bed, 0.2ha grassland/ shrubland, and 0.7ha seasonally wet grassland. All significant impacts would be mitigated by appropriate measures during both the construction and operational phases of the project. A wetland restoration area with long-term management plan will be created.

9.1.6 The proposed development at the R(D) Site (Y/YL-MP/10) will be regulated by relevant guidelines, and requirements in the respective zoning intention of Outline Zoning Plan. Therefore, the loss of important habitats due to development in the R(D) Site is not expected.

9.1.7 The current application will only cause loss of urbanised/disturbed and plantation, which are of very low ecological value. Cumulative impact of loss of wetland habitat in the Deep Bay area due to the current application and other nearby projects is considered **Insignificant**.

9.1.8 The construction disturbance caused by the development projects nearby (i.e., the YMST Site and R(D) Site) will be resolved by the mitigation measures recommended during the EIA studies. Impacts during the construction phase of the current application will also be mitigated by measures recommended in **Section 8**. Hence, the cumulative impact due to construction disturbance from the Project will be **Insignificant**.

9.1.9 Human activities in the Subject Site and the other nearby planned developments will be mainly indoors and screened by walls of houses during operation phase. It is not expected that all residents would go out or stay in open areas at the same time. The proposed development is planned to be a self-contained manner. It will not result in a significant increase in human activities in the surrounding areas during the operational phase. Most areas within the Assessment Area are developed areas and fauna utilizing these habitats are mainly disturbance tolerant. Hence, the potential cumulative increase in disturbance to wildlife due to human activities and noise from the current Project and other nearby projects is considered **Insignificant**.

9.1.10 There is existing traffic in the Assessment Area. The increased traffic flow due to the proposed residential development is not anticipated to impose significant additional impact on waterbirds utilizing NTMDC. NTMDC is located at lower elevation than Kam Pok Road, screened by dense tall existing trees on both sides. Traffic peak hours will only occasionally coincide with peak bird activities in NTMDC. Hence, the cumulative impact due to traffic from the Project will be **Insignificant**.

**Cumulative Impact to Sites of Recognized Conservation Importance**

9.1.11 The Subject Site is located 1km from the sites of recognized conservation importance (e.g., Mai Po Nature Reserve) in Deep Bay area described in **Section 4**. Therefore, these sites are not likely to be significantly affected during both construction and operation phases of the Project. With the implementation of mitigation measures recommended in **Section 8**, the cumulative impact of disturbance to sites of recognized conservation importance during construction and operational phases will be **Insignificant**.

**Cumulative Impact due to effluent/ sewage discharge during Operation Phase**

9.1.12 Cumulative impact due to effluent/ sewage discharge from the current Project and other nearby projects to NTMDC has been assessed in relevant chapter of the report. The sewage generated from the current and nearby planned/ approved development projects will be discharged into future public sewerage system, thus no adverse impact is expected.

# 10. Residual Ecological Impacts

10.1.1 The residual environmental impacts refer to the net environmental impacts after the implementation of mitigation measures. The residual impact will be the loss of 3.51ha of urbanised/disturbed area and 0.27ha of plantation of limited ecological value. The loss of these habitats was considered as **Insignificant** and no corresponding mitigation is required. Potential indirect impacts during both construction and operation phases will be mitigated by the recommended measures. With implementation of landscape planting

which will be beneficial to birds and butterflies, the residual ecological impacts of the project are considered acceptable.

# 11. Impact Summary and Conclusion

11.1.1 The Subject Site is located outside WBA and thus of distance with WCA so there is no critical concern regarding wetland conservation. Habitats map reflects the existing plantation, agricultural land, grassland, fishpond, flood storage pond, drainage channel/nullah, and urbanised/disturbed areas. Ecological baseline established by the literature review and updating habitat survey revealed that no habitat of ecological importance in the Subject Site or in the vicinity. Potential construction impacts will only involve 3.51ha of urbanised/disturbed area and 0.27ha of plantation. The potential impact of habitat loss was ranked as **Insignificant**. Potential impact to surrounding habitats and associated fauna due to construction disturbance was considered **Moderate**. Mitigation measures including utilization of quieter construction method and machinery will be implemented. Ecological monitoring of utilization of the Ngau Tam Mei Drainage Channel within the Assessment Area by birds between October and March during construction phase is proposed. Baseline surveys will be conducted prior to site construction works. Observations during construction phase monitoring will be compared against the baseline data. Effectiveness of the recommended measures will be evaluated by ecological monitoring surveys.

11.1.2 With the implementation of the recommended mitigation measures, there will be no significant adverse residual impact during construction and operation phases.

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# 13. Figures

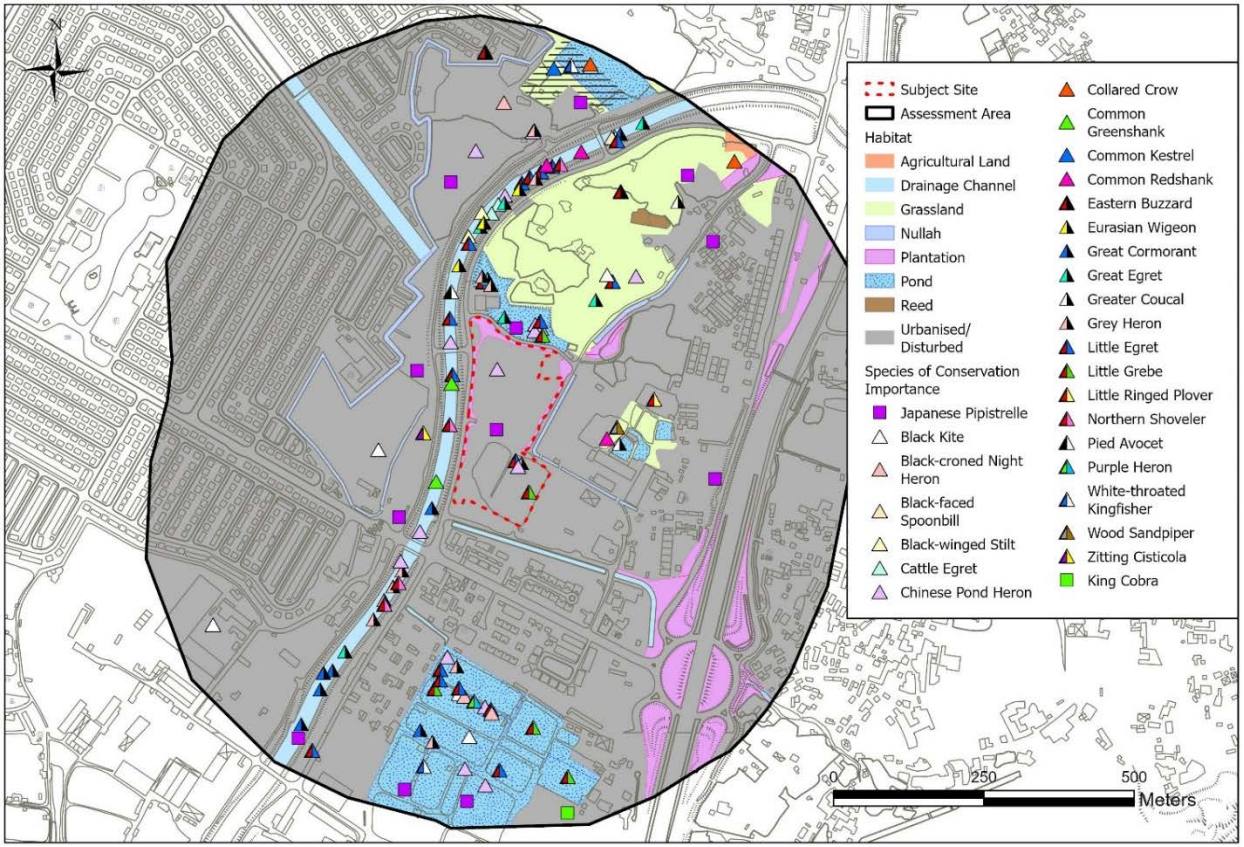


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Figure 1. Habitat Map of 2025 (Temporary Pond of YMST Project is indicated by "\\\") and locations of sighting of species of conservation importance form reviewed literatre

**Figure 2 Habitats within the Subject Site**

Plantation

Urbanised/Disturbed

**Figure 3 Habitats within the 500m Assessment Area**

Plantation

Agricultural Land

Grassland

**Figure 3 Habitats within the 500m Assessment Area (cont'd)**

Urbanised/Disturbed

Fishpond

Flood Storage Pond

Nullah

Drainage Channel

Temporary Pond of YMST

# 14. Appendices

## Appendix 1 Ecological Survey Report 2023

# Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.

## Ecological Survey Report 2023

1. Basic Project Information

1.1.1 The EIA report of the development project "Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T." was approved with conditions in January 2017. The Environmental Permit No. EP-515/2017 was awarded in January 2017.

1.1.2 The approved Master Layout Plan (hereafter as "the EIA Approved Scheme") was revised in 2023 (hereafter as "the Proposed Scheme"), which mainly involved an increase in number of houses. The Project Area boundary, footprint of the development and height of buildings will remain the same. Both the scale and scope of the Proposed Scheme will be the same as that in the EIA Approved Scheme. The construction methodology, construction activities, and powered mechanical equipment inventory proposed in the EIA Report will also remain valid.

1.1.3 This report summarized the findings of the verification survey conducted between February and July 2023, to provide update data for the planning application A/YL-MP/287. Changes of habitat coverage within the Project Area and Assessment Area were reported. Implication of the changes of habitat coverage, if any, on the validity of the impact evaluated in AEIAR-205/2017 was discussed.

2. Ecological Surveys

2.1.1 Verification surveys for establishment of updated ecological information of the Project Area and 500m Assessment Area of the Project Area were conducted between February and July 2023.

2.1.2 Surveys of Habitat Mapping, Vegetation, Mammal, Bird, Herpetofauna, Dragonfly & Butterfly and Aquatic Fauna were conducted (**Table 1**). Survey methodology in Section 8.4 of AEIAR-205/2017 were used. Waterbird was identified as the main ecological issue during the EIA stage. The surveys covered dry season, when both abundance and species richness of waterbirds are generally higher in Hong Kong.

**Table 1 Verification Survey Programme between February and July 2023**

| | Feb | Mar | Apr | May | Jun | Jul |
|---|---|---|---|---|---|---|
| Habitat and Vegetation | 10th, 14th | 9th, 22nd | 6th | | 9th | 20th |
| Bird | 10th, 14th, 17th | 9th | 6th, 13th | 4th, 11th | 9th, 23rd | 14th |
| Mammal | 17th | 22nd | 6th | | 23rd | 14th |
| Herpetofauna | 10th | 22nd | 6th | 11th | 23rd | 14th |
| Night Survey | | 9th | 6th | 11th | 23rd | 6th |
| Butterfly & Dragonfly | 10th | 22nd | 6th, 13th | 11th | 9th | 14th |
| Aquatic Fauna | 17th | | | | 9th | |

*Habitat Mapping*

2.1.3 Habitats in the Subject Site and Assessment Area were mapped based on aerial photos and ground truthing. Walk-over surveys were conducted at representative areas of each habitat type. Plant species in each habitat type were identified (with the aid of binoculars when necessary) and their relative

abundance were recorded, with special attention to rare and protected species. Colour photographs were taken of all habitats encountered on site and of ecological features of special importance.

*Bird*

2.1.4 Bird surveys were conducted monthly during the survey period. The surveys covered both breeding season and overwintering season of birds. Birds within the Subject Site and Assessment Area were surveyed quantitatively using transect count method. All birds seen or heard were identified and their abundance recorded. As some birds (e.g., owls, nightjars) are nocturnal, night surveys were conducted.

*Other Terrestrial Fauna*

2.1.5 Mammals within the Subject Site and Assessment Area were surveyed qualitatively. All sightings, tracks, and signs of mammals found were recorded. As some mammal species (e.g. bats) are nocturnal, night surveys were conducted.

2.1.6 Herpetofauna within Subject Site and the Assessment Area were surveyed qualitatively. All reptiles and amphibians sighted were recorded. As herpetofauna are mostly nocturnal and more active during wet season, night surveys were carried out in wet seasons of 2023. Potential microhabitats of herpetofauna such as wall, fallen logs, litter, channel/nullah, fishpond margins, underneath of stones or other materials, artificial container (e.g. pots) were searched during surveys to locate cryptic or secretive herpetofauna species. Amphibians were also identified by their calls during night surveys.

2.1.7 Dragonflies and butterflies within Subject Site and the Assessment Area were surveyed quantitatively using the transect count method. Dragonflies and butterflies observed were identified and recorded.

*Aquatic Fauna*

2.1.8 Aquatic fauna (such as freshwater fish and invertebrates) within the Subject Site and Assessment Area were studied by active searching and direct observation. Baited fish cages were deployed inside the pond within the Subject Site, while direct observations were made at the pond as well as other aquatic habitats (nullah and drainage channel) in the Assessment Area.

## 3. Survey results

*Habitat & Vegetation*

3.1.1 Habitats recorded within the Project Area in 2023 included plantation, fishpond (abandoned), and urbanised/disturbed area (**Figures 1 & 2**, **Table 2**). Coverage of these habitats was similar to that in EIA stage. Most of the Subject Site was concrete-paved. Plantations mainly made up of exotic species (e.g., *Leucaena leucocephala*) were found on the engineering slope on the northern fringe of the Subject Site. The pond in the Subject Site was already isolated from the continuous and contiguous Deep Bay wetland system in 1990. There was no sign of operation for fish farming in this pond during the EIA stage. Hence, trash shrimps and fishes, which are abundant in active fishponds during drain-down for harvesting of commercial fishes and attracting many waterbirds, were not available in this fishpond. This pond was still abandoned in 2023. The habitats in the Subject Site supported limited biodiversity (**Appendices 1 – 6**). A total of 29 plant species were recorded in the Subject Site, 14 of which are exotic species (**Appendix 1**). None of the recorded plant species was considered of conservation importance / concern.

**Table 2 Habitats recorded within the Project Area**

| Habitat | Size (ha) | |
|---|---|---|
| | EIA stage | 2023 |
| Plantation | 0.3 | 0.3 |
| Urbanised/Disturbed | 3.17 | 3.17 |
| Fishpond | 0.33 | 0.33 |
| **Total** | **3.8** | **3.8** |

3.1.2 Habitats recorded within the Assessment Area included plantation, agricultural land, grassland/shrubland, fishpond, drainage channel/nullah, and urbanised/disturbed, (**Figures 1 & 3, Table 3**). Coverage of these habitats was similar to that in EIA stage. Most of the Assessment Area was still covered by urbanised/disturbed in 2023. Other habitats within the Assessment Area (e.g., plantation, fishpond) were mostly fragmented and small in sizes. A total of 211 plant species were recorded within the Assessment Area, 126 of which are exotic species (**Annex 1**). No plant species considered of conservation importance / concern was recorded during the verification survey within the Assessment Area.

**Table 3 Habitats recorded within the Assessment Area**

| Habitat | Size (ha) | |
|---|---|---|
| | EIA stage | 2023 |
| Plantation | 4.03 | 3.74 |
| Agricultural Land | 3.34 | 3.34 |
| Grassland/Shrubland | 13.85 | 15.88 |
| Urbanised/Disturbed | 91.28 | 91.59 |
| Fishpond | 8.96 | 6.91 |
| Flood Storage Pond | 0.82 | 0.82 |
| Nullah | 1.61 | 1.61 |
| Drainage Channel | 3.95 | 3.95 |
| **Total** | **127.84** | **127.84** |

3.1.3 Plantation was mainly found on engineered slopes along the Ngau Tam Mei Drainage Channel, roadsides and the surrounding of the Subject Site. Major trees recorded were *Leucaena leucocephala*, *Melaleuca quinquenervia*, *Albizia lebbeck*, *Lagerstroemia speciosa*, and *Macaranga tanarius*. The understorey was planted with amenity shrubs including *Hibiscus rosa-sinensis*, *Schefflera arboricola*, and *Calliandra hematocephala*.

3.1.4 A small area of agricultural land was found near the northern boundary of the Assessment Area. Major crops were lettuce (Lactuca sativa) while fruit trees such as longan (*Dimocarpus longan*) and papaya (*Cairica papaya*) were also seen. Part of the agricultural land adjacent to the REC Site was managed to provide habitats (temporary pond of YMST) for wetland fauna before the construction of the Wetland Restoration Area under the Yau Mei Site EIA AEIAR-189/2015 during the verification survey.

3.1.5 The urbanised/disturbed area was composed of the existing residential area, open storage area, villages, highways and roads and was the dominant habitat in the Assessment Area. Ornamental or landscaping species recorded in this habitat included *Acacia confusa*, *Melaleuca quinquenervia*, *Albizia lebbeck* and *Syzygium jambos*.

3.1.6 Most drainage channel and nullah were concreted with little vegetation grown on banks or bottom, and hence provide very little habitat for floral or faunal utilisation. Most recorded species are ruderal herbs or weeds such as *Panicum maximum* and *Conyza canadensis*. A few individuals of mangrove species, i.e. *Acanthus ilicifolius*, colonised on channel banks. The Ngau Tam Mei Drainage Channel passing through the Assessment Area had grasscreted banks and in some sections the channel bed was covered by muddy sediment. Waterbirds were observed roosting and foraging in this drainage channel

during low tides in winter.

3.1.7 Grassland was formed apparently from abandonment of agricultural land followed by earthwork and possibly also hydroseeding. This habitat was dominated by weeds and ruderals while a few isolated trees were also seen.

3.1.8 Two kinds of ponds were recorded in the Assessment Area: fish ponds and flood storage pond. The fish ponds recorded in both the Subject Site and Assessment Area were found abandoned when the field survey commenced in 2009 during the EIA stage. Some were overgrown with reeds while others had disturbed bunds and little vegetation cover. During the verification surveys in 2023, all fishponds in the Assessment Area still found remained abandoned. The flood storage pond is an engineering pond which was part of the drainage channel element where surplus water during wet season was stored. The bunds were planted with some ornamental and native vegetation.

*Terrestrial & Aquatic Fauna*

3.1.9 Fauna recorded in the Project Area and Assessment Area were mostly disturbance tolerant species (**Annexes 2 - 6**). This is similar to that reported in AEIAR-205/2017. Apart from Japanese Pipistrelle *Pipistrellus abramus* and 15 species of bird species of conservation importance, there was no significant observation for fauna during the verification survey (**Annexes 2 - 6**). As in the EIA stage, fauna of conservation importance were mainly bird species.

3.1.10 Japanese Pipistrelles were observed in the Project Area, urbanised/disturbed, agricultural land, grassland/shrubland, drainage channel and fishpond habitats within the Assessment Area (**Figure 3**). This species is widely distributed throughout Hong Kong. Japanese Pipistrelle was recorded in EIA stage. The potential impact to this species was evaluated in AEIAR-205/2017.

3.1.11 A total of 10 species of bird were recorded in the Project Area (**Annex 2**). Both abundance and species richness of birds in the Subject Site were considered very low. No bird species of conservation importance was recorded within the Subject Site.

3.1.12 Fifteen bird species were considered of conservation importance (**Table 4**). These included Northern Shoveler *Anas clypeata*, Eurasian Wigeon *Mareca penelope*, Little Grebe *Tachybaptus ruficollis*, Black-crowned Night Heron *Nycticorax nycticorax*, Chinese Pond Heron *Ardeola bacchus*, Grey Heron *Ardea cinerea*, Great Egret *Ardea alba*, Little Egret *Egretta garzetta*, Great Cormorant *Phalacrocorax carbo*, Black Kite *Milvus migrans*, Pied Avocet *Recurvirostra avosetta*, Common Greenshank *Tringa nebularia*, Common Redshank *Tringa tetanus* and Black-winged Stilt *Himantopus himantopus*. As in the EIA stage, these bird species of conservation importance were mostly recorded in the Ngau Tam Mei Drainage Channel and ponds (**Figure 3**). Potential impact to waterbirds in the Ngau Tam Mei drainage Channel was evaluated in AEIAR-205/2017 and mitigation measures were recommended.

**Table 4 Mean number per survey of bird species of conservation importance recorded in Project Area and Assessment Area. Number in parenthesis is maximum count recorded during surveys.**

| **Common Name** | ***Scientific Names*** | **Subject Site** | **Assessment Area** | **Conservation Status** |
|---|---|---|---|---|
| Northern Shoveler | *Spatula clypeata* | 0.0 | 0.5 (5) | WAPO (Cap 170); Regional Concern |
| Eurasian Wigeon | *Mareca penelope* | 0.0 | 0.1 (1) | WAPO (Cap 170); Regional Concern |
| Little Grebe | *Tachybaptus ruficollis* | 0.0 | 0.1 (1) | WAPO (Cap 170); Local Concern |

| Common Name | *Scientific Names* | Subject Site | Assessment Area | Conservation Status |
|---|---|---|---|---|
| Black-crowned Night Heron | *Nycticorax nycticorax* | 0.0 | 0.3 (3) | WAPO (Cap 170); Local Concern |
| Chinese Pond Heron | *Ardeola bacchus* | 0.0 | 0.4 (2) | WAPO (Cap 170); Potential Regional Concern |
| Grey Heron | *Ardea cinerea* | 0.0 | 0.9 (5) | WAPO (Cap 170); Potential Regional Concern |
| Great Egret | *Ardea alba* | 0.0 | 0.5 (1) | WAPO (Cap 170); Potential Regional Concern |
| Little Egret | *Egretta garzetta* | 0.0 | 1.8 (6) | WAPO (Cap 170); Potential Regional Concern |
| Great Cormorant | *Phalacrocorax carbo* | 0.0 | 0.2 (1) | WAPO (Cap 170); Potential Regional Concern |
| Black Kite | *Milvus migrans* | 0.0 | 0.3 (1) | WAPO (Cap 170); Appendix 2 of CITES |
| Pied Avocet | *Recurvirostra avosetta* | 0.0 | 0.2 (2) | WAPO (Cap 170); Regional Concern |
| Common Greenshank | *Tringa nebularia* | 0.0 | 0.2 (1) | WAPO (Cap 170); Regional Concern |
| Common Redshank | *Tringa totanus* | 0.0 | 0.2 (2) | WAPO (Cap 170); Local Concern |
| Black-winged Stilt | *Himantopus himantopus* | 0.0 | 0.4 (3) | WAPO (Cap 170); Regional Concern |
| White-throated Kingfisher | *Halcyon smyrnensis* | 0.0 | 0.1 (1) | WAPO (Cap 170); Local Concern |

4. Evaluation of Habitats and Species of Conservation Importance

4.1.1 The ecological importance of the habitats within the Project Area and 500m Assessment Area was evaluated based on the observations of the verification surveys in accordance with the criteria stipulated in Annex 8 of EIAO-TM (**Tables 5 - 11**).

4.1.2 In accordance with Table 6, Annex 8 of the EIAO(TM), the ecological value of species was assessed in terms of protection status (e.g. fauna protected under WAPO (except birds), and flora and fauna protected under regional/global legislation/conventions), species distribution (e.g. endemic), and rarity (e.g. rare or restricted). No plant species of conservation importance were identified within the Assessment Area. Fauna of conservation importance recorded within the Assessment Area are evaluated according to the EIAO(TM) in Annex 8 (**Table 12**).

**Table 5 Evaluation of Habitats within the Project Area**

| Criterion | Description | | |
|---|---|---|---|
| | **Urbanised/disturbed** | **Plantation** | **Abandoned Fishpond** |
| Naturalness | Man-made habitat | Man-made (planted). | Man-made habitat |
| Size | 3.17 ha | 0.3 ha | 0.33 ha |
| Diversity | Low flora diversity. Low diversity of butterfly, low diversity of bird, and very low diversity of dragonfly. | Low flora diversity. Low diversity of butterfly, bird, and very low diversity of dragonfly. | Low flora diversity. Low diversity of butterfly and bird, and very low diversity of dragonfly. |

| Criterion | Description | | |
|---|---|---|---|
| | **Urbanised/disturbed** | **Plantation** | **Abandoned Fishpond** |
| Rarity | None for flora<br>Fauna species of conservation importance: Japanese Pipistrelle | No flora or fauna species of conservation importance | None for flora or fauna species |
| Re-creatability | Easy to recreate | Easy to recreate | Easy to recreate |
| Fragmentation | None | Formed thin belts on engineered slopes | Isolated from other continuous wetland ecosystem of Deep Bay. |
| Ecological linkage | Not functionally linked to habitats of conservation importance | Not functionally linked to habitats of conservation importance | Not functionally linked to habitats of conservation importance |
| Potential value | Low | Low due to small footprint and regular maintenance | Very low due to isolation, small size and subject to high level of disturbance. |
| Nursery/breeding ground | No significant record. | No significant records. | No significant record. |
| Age | N/A | Young | N/A |
| Abundance/richness of wildlife | Low for butterfly and bird, very low for dragonfly. | Low for butterfly and bird, and very low for dragonfly | Low for butterfly and bird, very low for dragonfly. |
| Overall ecological value | Very Low | Very Low | Very Low |

**Table 6 Evaluation of Plantation Habitat within the Assessment Area**

| Criteria | Description |
|---|---|
| Naturalness | Man-made (planted). |
| Size | A total of 3.74 ha |
| Diversity | Low flora diversity. Low diversity of butterfly, bird, and very low diversity of dragonfly. |
| Rarity | None for flora and fauna. |
| Re-creatability | Easy to recreate |
| Fragmentation | Formed thin belts on engineered slopes |
| Ecological linkage | Not functionally linked to habitats of conservation importance |
| Potential value | Low due to small footprint and subjected to high level of disturbance from traffic |
| Nursery/breeding ground | No significant records. Value as breeding habitat for terrestrial fauna is low due to sparse canopy and exotic tree species composition, and subjected to high level of disturbance from traffic. |
| Age | Young |
| Abundance/richness of wildlife | Low for butterfly and bird, and very low for dragonfly |
| Overall ecological value | **Very Low** |

**Table 7 Evaluation of Agricultural Land within the Assessment Area**

| Criteria | Description |
|---|---|
| Naturalness | Man-made habitat, mostly left fallow/abandoned |
| Size | 3.34 ha |
| Diversity | Low flora diversity. Low to moderate diversity of bird, low diversity of butterfly and very low diversity of dragonfly. |
| Rarity | None for flora. |

| Criteria | Description |
|---|---|
| | Fauna species of conservation importance: Japanese Pipistrelle. |
| Re-creatability | Easy to re-create |
| Fragmentation | Isolated stand |
| Ecological linkage | Not functionally linked to habitats of conservation importance |
| Potential value | Limited. |
| Nursery/breeding ground | No significant record. Minimal due to high level of disturbance from intensive management |
| Age | N/A |
| Abundance/richness of wildlife | Low for butterfly and bird, and very low dragonfly abundance |
| Overall ecological value | **Moderate** for those managed as temporary pond of YMST project; **Low** to moderate for the rest |

**Table 8 Evaluation of Urbanised/Disturbed Habitat within the Assessment Area**

| Criteria | Description |
|---|---|
| Naturalness | Man-made habitat |
| Size | 91.59 ha |
| Diversity | Low flora diversity. Low to moderate diversity of butterfly, low diversity of bird, and very low diversity of dragonfly. |
| Rarity | None for flora.<br>Fauna species of conservation importance: Japanese Pipistrelle and Little Egret |
| Re-creatability | Easy to recreate |
| Fragmentation | None |
| Ecological linkage | Not functionally linked to habitats of conservation importance |
| Potential value | Low |
| Nursery/breeding ground | No significant record. Minimal due to high level of disturbance |
| Age | N/A |
| Abundance/richness of wildlife | Low for butterfly and bird, very low for dragonfly. |
| Overall ecological value | **Very Low** |

**Table 9 Evaluation of Grassland/Shrubland within the Assessment Area**

| Criteria | Description |
|---|---|
| Naturalness | Man-made habitat, with earthwork and possibly hydroseeded after abandonment of agriculture |
| Size | 15.88 ha |
| Diversity | Low flora diversity. Low diversity of butterfly and bird, and very low diversity of dragonflies.' |
| Rarity | None for flora;<br>Fauna species of conservation importance: Japanese Pipistrelle and Black Kite |
| Re-creatability | Easy to recreate |
| Fragmentation | None |
| Ecological linkage | Not functionally linked to habitats of conservation importance |
| Potential value | Low |
| Nursery/breeding ground | No significant record. Minimal as nursey/breeding ground due to high level of disturbance |
| Age | N/A |
| Abundance/richness of wildlife | Low for butterfly and bird, and very low for dragonfly. |
| Overall ecological value | **Low to moderate** |

**Table 10 Evaluation of Pond (Fish Pond and Flood Storage Pond) within the Assessment Area**

| Criteria | Description |
|---|---|
| Naturalness | Man-made habitat |
| Size | 6.91 ha (abandoned fish pond), 0.82 ha (flood storage pond) |
| Diversity | Low flora diversity. Low diversity of butterfly and bird, and very low diversity of dragonfly. |
| Rarity | None for flora. Fauna species of conservation importance: Japanese Pipistrelle, Little Grebe, Chinese Pond Heron, Black-crowned Night Heron, Little Egret, Great Egret, Grey Heron and White-throated Kingfisher |
| Re-creatability | Easy to recreate |
| Fragmentation | The flood storage pond and fishponds to the east of the Project Area are isolated from other wetland habitats. Fishponds in the southern corner of the Assessment Area exist as a fairly large patch |
| Ecological linkage | The flood storage pond and fishponds to the east of the Project Area are not functionally linked to habitats of conservation importance.<br>Fishponds in the southern corner of the Assessment Area fall within WBA. |
| Potential value | Very low for the fishponds to the east of the Project Area due to isolation, small size and subject to high level of disturbance.<br>Low to moderate for those fishponds in the south corner of the Assessment Area due to larger size and located within/close to WBA |
| Nursery/breeding ground | No significant record. Minimal for the fishponds to the east of the Project Area as nursey/breeding ground due to subjected to high level of disturbance. The abandoned fishponds in the south corner of the Assessment Area might provide breeding habitats for birds, amphibians and dragonflies. |
| Age | N/A |
| Abundance/richness of wildlife | Low for butterfly and bird, very low for dragonfly. |
| Overall ecological value | **Very low** for the fishponds to the east of the Project Area due to isolation, small size and subject to high level of disturbance.<br>**Low to moderate** for the fish ponds in the south corner of the Assessment Area due to larger size and located within/close to WBA |

**Table 11 Evaluation of Drainage Channel/Nullah within the Assessment Area**

| Criteria | Description |
|---|---|
| Naturalness | Man-made, with concrete bank and bottom |
| Size | 1755 m, 3.95ha (Drainage channel), 2283 m, 1.61ha (nullah) |
| Diversity | Low flora diversity. Low diversity of bird and butterfly, very low diversity of dragonflies. |
| Rarity | Fauna species of conservation importance: Japanese Pipistrelle, Northern Shoveler, Eurasian Wigeon, Great Cormorant, Grey Heron, Little Egret, Chinese Pond Heron, Great Egret, Pied Avocet, Common Greenshank, Common Rerdshank and Black-winged Stilt. |
| Re-creatability | Easy to recreate |
| Fragmentation | The Ngau Tam Mei Main Drainage Channel is connected to the Kam Tin River Channel. Other drainage channel/nullahs are fragmented by urbanised/disturbed habitats |
| Ecological linkage | Hydrological linked to Inner Deep Bay |
| Potential value | Low due to the main function for flood control, surrounded by urbanised/disturbed habitats.<br>The Ngau Tam Mei Main Drainage Channel could provide foraging and roosting habitats for some water birds |
| Nursery/breeding ground | No significant record. Minimal as nursey/breeding ground due to subjected to high level of disturbance and low habitat complexity |
| Age | N/A |

| Criteria | Description |
|---|---|
| Abundance/richness of wildlife | Low aquatic fauna abundance. Moderate for bird, low for butterfly and very low for dragonfly. |
| Overall ecological value | **Moderate** for the Ngau Tam Mei Main Drainage Channel<br>**Low** for other drainage channel/nullah |

**Table 12 Evaluation of fauna species of conservation importance within the Assessment Area**

| Common name | Locations | Protection status | Distribution | Rarity |
|---|---|---|---|---|
| Japanese Pipistrelle | Recorded in urbanized/disturbed, agricultural land, grassland/shrubland, drainage channel and pond within Assessment Area | WAPO (Cap 170) | Widely distributed throughout Hong Kong | Very common |
| Northern Shoveler | Recorded in drainage channel within Assessment Area | WAPO (Cap 170); Regional Concern | Found in Deep Bay area | Abundant winter visitor |
| Eurasian Wigeon | Recorded in drainage channel within Assessment Area | WAPO (Cap 170); Regional Concern | Found in Deep Bay area, Tai Lam Chung. | Abundant winter visitor. |
| Little Grebe | Recorded in pond within the Assessment Area | WAPO (Cap 170); Local Concern | Found in Deep Bay area | Common resident |
| Black-crowned Night Heron | Recorded in pond within the Assessment Area | WAPO (Cap 170); Local Concern | Widely distributed in Hong Kong | Common resident and migrant |
| Chinese Pond Heron | Recorded in drainage channel and pond within the Assessment Area | WAPO (Cap 170); Potential Regional Concern | Widely distributed in Hong Kong | Common resident |
| Grey Heron | Recorded in drainage channel, grassland/shrubland and pond within the Assessment Area | WAPO (Cap 170); Potential Regional Concern | Found in Deep Bay area, Starling Inlet, Kowloon Park, Cape D'Aguilar | Common winter visitor |
| Great Egret | Recorded in drainage channel, grassland/shrubland, agricultural land and pond within the Assessment Area | WAPO (Cap 170); Potential Regional Concern | Widely distributed in Hong Kong | Common resident, migrant and winter visitor |
| Little Egret | Recorded in drainage channel, agricultural land and pond within the Assessment Area | WAPO (Cap 170); Potential Regional Concern | Widely distributed in coastal area throughout Hong Kong | Common resident, migrant and winter visitor |
| Great Cormorant | Recorded in drainage channel and pond within the Assessment Area | WAPO (Cap 170); Potential Regional Concern | Widely distributed in coastal areas throughout Hong Kong | Common winter visitor |
| Black Kite | Recorded in urbanized/disturbed, grassland/shrubland | WAPO (Cap 170); Appendix 2 of CITES | Widely distributed in Hong Kong | Common resident and winter visitor |

| Common name | Locations | Protection status | Distribution | Rarity |
|---|---|---|---|---|
| | and pond within the Assessment Area | | | |
| Pied Avocet | Recorded in drainage channel within the Assessment Area | WAPO (Cap 170); Regional Concern | Found in Deep Bay area | Abundant winter visitor |
| Common Greenshank | Recorded in drainage channel within Assessment Area | WAPO (Cap 170); Regional Concern | Found in Deep Bay area. | Abundant passage migrant and winter visitor. |
| Common Redshank | Recorded in drainage channel within Assessment Area | WAPO (Cap 170); Local Concern | Found in Deep Bay area. | Abundant passage migrant and winter visitor. |
| Black-winged Stilt | Recorded in drainage channel within Assessment Area | WAPO (Cap 170); Regional Concern | Found in Deep Bay area, Long Valley, Kam Tin. | Common migrant and wintor visitor |
| White-throated Kingfisher | Recorded in pond within the Assessment Area | WAPO (Cap 170); Local Concern | Widely distributed in coastal areas throughout Hong Kong | Common resident. |

## 5. Reference

Fellowes, J.R., Lau, M.W.N., Dudgeon, D., Reels, G.T., Ades, G.W.J., Carey, G.J., Chan, B.P.L., Kendrick, R.C., Lee, K.S., Leven, M.R., Wilson, K.D.P. and Yu, Y.T. 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.

## Figure 1. Habitat Map of 2023 (Shaded area: temporary pond of YMST)

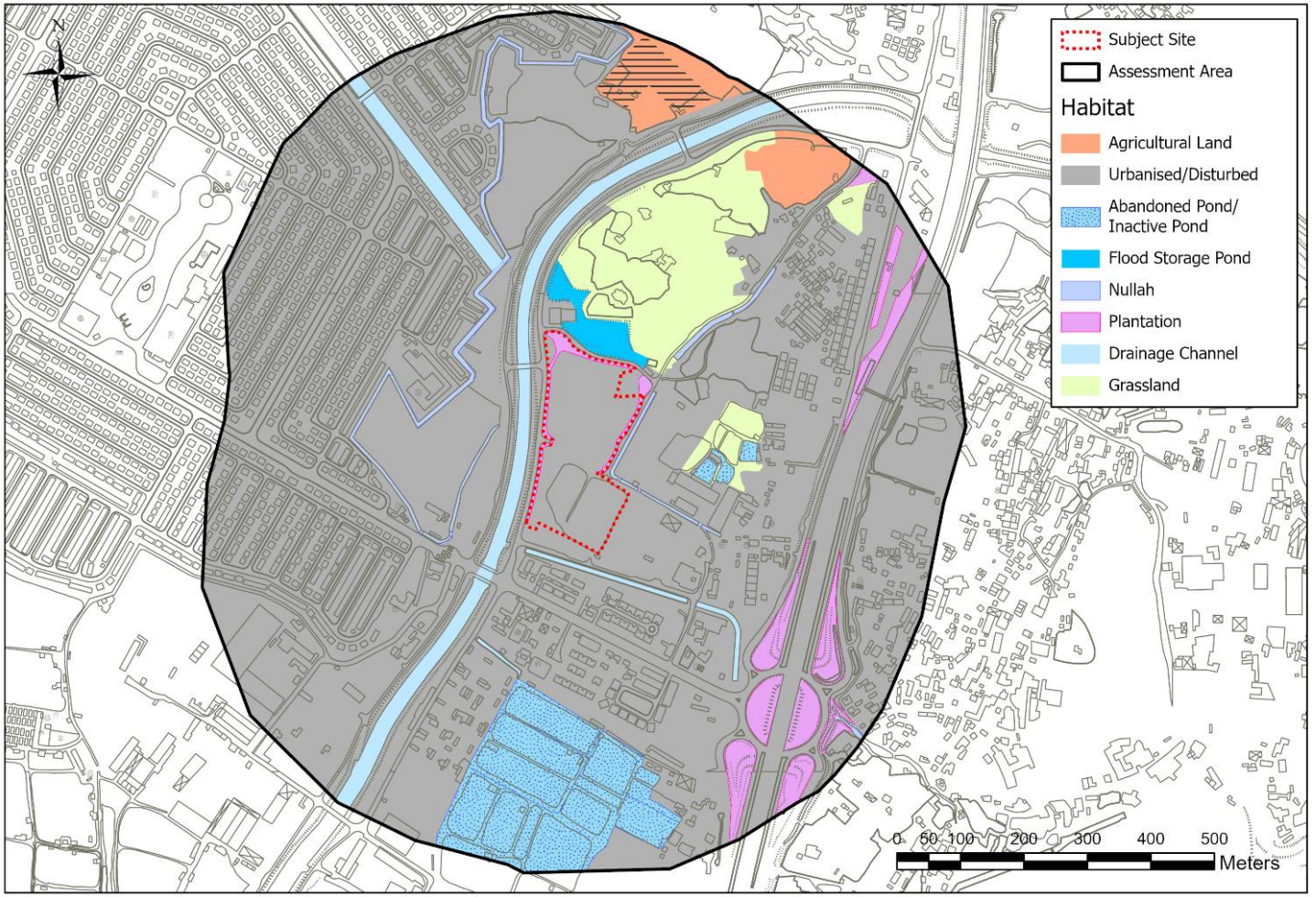

**Figure 2 Habitats within the Project Area**

| | | |
|---|---|---|
|  |  |  |
| Plantation | Urbanised/Disturbed | Fishpond (abandoned) |

## Figure 3 Habitats within the 500m Assessment Area

| | | |
|---|---|---|
|  |  |  |
| Plantation | Agricultural Land | Grassland/Shrubland |
|  |  |  |
| Urbanised/Disturbed | Fishpond (abandoned) | Flood Storage Pond |

**Figure 3 Habitats within the Assessment Area (cont'd)**

| | | |
|---|---|---|
|  |  | |
| Nullah | Drainage Channel | |

# Annexes

**Annex 1** **Plant Species recorded within the Assessment Area during the verification surveys (Habitats: DC/N = drainage channel/nullah, Pl = plantation, U/D = urbanized/disturbed, G/S = grassland/shrubland, A = agricultural land, Po = fishpond & flood storage pond; PA = Project Area)**

| Species | Habit | Origin | Relative abundance | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | PA | DC/ N | Pl | U/D | G/S | A | Po |
| *Acacia auriculiformis* | Tree | Exotic | | | | S | | | |
| *Acacia confusa* | Tree | Exotic | | | C | C | | | S |
| *Aglaia odorata* var. *microphyllina* | Shrub | Exotic | | | | C | | | |
| *Albizia lebbeck* | Tree | Exotic | | | S | C | | | |
| *Aleurites moluccana* | Tree | Exotic | | | | S | | | |
| *Alocasia macrorrhizos* | Herb | Native | | O | O | C | | | O |
| *Aloe vera* | Herb | Exotic | | | | | | O | |
| *Alternanthera philoxeroides* | Herb | Exotic | S | | | | | | O |
| *Amaranthus viridis* | Herb | Native | S | | S | O | | | S |
| *Aporusa dioica* | Tree | Native | | | S | | | | |
| *Araucaria heterophylla* | Tree | Exotic | | | | O | | | |
| *Archontophoenix alexandrae* | Tree | Exotic | | | | C | | | |
| *Asystasia micrantha* | Herb | Exotic | | | | C | | | |
| *Bambusa* sp. | Bamboo | Unknown | | | | C | | | |
| *Bauhinia purpurea* | Tree | Exotic | | S | | | | | |
| *Bauhinia variegata* | Tree | Exotic | | | | S | | | |
| *Bauhinia variegata* var. *candida* | Tree | Exotic | | | | S | | | |
| *Bauhinia* x *blakeana* | Tree | Native | | | | C | | | |
| *Bidens alba* | Herb | Exotic | S | C | O | C | C | S | C |
| *Bischofia javanica* | Tree | Native | | S | | S | | | |

| Species | Habit | Origin | Relative abundance | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | PA | DC/ N | PI | U/D | G/S | A | Po |
| *Boehmeria nivea* | Shrub | Exotic | S | | | S | | | |
| *Bombax ceiba* | Tree | Exotic | | | S | C | O | | |
| *Bothriochloa bladhii* | Herb | Native | S | | S | O | | | |
| *Bougainvillea spectabilis* | Climber | Exotic | | | | O | | | |
| *Brachiaria mutica* | Herb | Exotic | S | | | | C | | C |
| *Brassica oleracea var. capitata* | Herb | Exotic | | | | | | C | |
| *Broussonetia papyrifera* | Tree | Native | | | | O | | | |
| *Bridelia tomentosa* | Shrub | Native | | | S | S | | | |
| *Bruguiera gymnorrhiza* | Tree | Native | | S | | | | | |
| *Camellia japonica* | Shrub | Exotic | | | | S | | | |
| *Calliandra haematocephala* | Shrub | Exotic | | | | C | | | |
| *Callistemon viminalis* | Tree | Exotic | | | S | O | | | |
| *Carica papaya* | Tree | Exotic | | | | O | | O | |
| *Caryota mitis* | Tree | Exotic | | | | S | | | |
| *Cassia fistula* | Tree | Native | | | S | | | | |
| *Casuarina equisetifolia* | Tree | Exotic | | | | S | | | |
| *Catharanthus roseus* | Shrub | Exotic | | | | S | | | |
| *Celosia argentea* | Herb | Native | | | | | | | S |
| *Celtis sinensis* | Tree | Native | S | S | O | C | S | | |
| *Cenchrus echinatus* | Herb | Exotic | | | | S | | | |
| *Centotheca lappacea* | Herb | Native | | | | O | | | |
| *Chenopodium ficifolium* | Herb | Native | | | S | O | | | S |
| *Chloris barbata* | Herb | Native | | S | | O | O | | S |
| *Cinnamomum camphora* | Tree | Native | | | | O | | | |
| *Citrus maxima* | Tree | Exotic | | | | S | | | |
| *Coccinia grandis* | Climber | Native | | | | | | | S |

| **Species** | **Habit** | **Origin** | **Relative abundance** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **PA** | **DC/ N** | **Pl** | **U/D** | **G/S** | **A** | **Po** |
| *Cocculus orbiculatus* | Climber | Native | O | | S | O | | | S |
| *Codiaeum variegatum* | Shrub | Exotic | | | | O | | | |
| *Colocasia esculenta* | Herb | Native | | S | | S | | | S |
| *Commelina diffusa* | Herb | Native | | | | | | | O |
| *Conyza canadensis* | Herb | Exotic | S | | | S | | | |
| *Cordyline fruticosa* | Shrub | Exotic | | | | S | | | |
| *Crateva unilocularis* | Tree | Exotic | | | S | | | | |
| *Cuphea hyssopifolia* | Shrub | Exotic | | | | S | | | |
| *Cuscuta* sp. | Climber | Native | S | | | S | | | S |
| *Cycas revoluta* | Tree | Exotic | | | | S | | | |
| *Cyclosorus parasiticus* | Herb | Native | | | | S | | | S |
| *Cynodon dactylon* | Herb | Native | | | | C | | | |
| *Cyperus eragrostis* | Herb | Unknown | S | | | | | | O |
| *Cyperus involucratus* | Herb | Exotic | | S | S | | | | |
| *Cyperus odoratus* | Herb | Exotic | | O | | S | | | |
| *Delonix regia* | Tree | Exotic | | | S | O | | | |
| *Desmos chinensis* | Climber | Native | | | | S | | | |
| *Dimocarpus longan* | Tree | Exotic | | | S | C | | | S |
| *Dracaena reflexa* var. *angustifolia* | Shrub | Exotic | | | | | S | | |
| *Duranta erecta* | Climber | Exotic | | | | C | | | |
| *Dypsis lutescens* | Shrub | Exotic | | | | S | | | |
| *Eclipta prostrata* | Herb | Native | | | | S | | | |
| *Ehretia monopyrena* | Shrub | Exotic | | | | S | | | |
| *Eichhornia crassipes* | Herb | Exotic | | S | | | | | |
| *Emilia sonchifolia* | Herb | Native | | | | C | | | |
| *Eragrostis tenella* | Herb | Native | | | | O | | | |

| **Species** | **Habit** | **Origin** | **Relative abundance** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **PA** | **DC/ N** | **PI** | **U/D** | **G/S** | **A** | **Po** |
| *Eucalyptus citriodora* | Tree | Exotic | | | C | O | | | |
| *Eucalyptus robusta* | Tree | Exotic | | | O | | | | |
| *Eucalyptus tereticornis* | Tree | Exotic | | | C | O | | | |
| *Euphorbia hirta* | Herb | Exotic | | | | S | | | |
| *Euphorbia milii* | Shrub | Exotic | | | | S | | | |
| *Euphorbia thymifolia* | Herb | Native | | | | S | | | O |
| *Excoecaria cochinchinensis* | Shrub | Exotic | | | | S | | | |
| *Fagraea ceilanica* | Shrub | Exotic | | | | S | | | |
| *Ficus altissima* | Tree | Native | | | | S | | | |
| *Ficus benjamina* | Tree | Exotic | | | | S | | | |
| *Ficus hispida* | Shrub | Native | | S | | C | S | | |
| *Ficus lyrata* | Tree | Exotic | | | | S | | | |
| *Ficus maclellandii 'Alii'* | Tree | Exotic | | | | S | | | |
| *Ficus microcarpa* | Tree | Native | | | C | C | | | |
| *Ficus pumila* | Climber | Native | | | | C | | | |
| *Ficus religiosa* | Tree | Exotic | | | | S | | | |
| *Ficus virens* var. *sublanceolata* | Tree | Native | | S | O | S | | | |
| *Ficus subpisocarpa* | Tree | Native | | | | S | | | |
| *Flueggea virosa* | Shrub | Native | | S | | S | | | |
| *Handroanthus chrysanthus* | Tree | Exotic | | | | O | S | | |
| *Hedyotis corymbosa* | Herb | Native | | | | O | | | |
| *Heteropanax fragrans* | Tree | Exotic | | | | S | | | |
| *Hibiscus rosa-sinensis* | Shrub | Exotic | | | | O | | | |
| *Hibiscus tiliaceus* | Tree | Exotic | | S | | | | | |
| *Hydrocotyle verticillata* | Herb | Exotic | | S | | S | | | |
| *Imperata cylindrica* var. *major* | Herb | Native | | | | | C | O | S |

| Species | Habit | Origin | Relative abundance | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | PA | DC/ N | PI | U/D | G/S | A | Po |
| *Ipomoea aquatica* | Herb | Exotic | | | | | | | C |
| *Ipomoea cairica* | Climber | Exotic | | O | | C | O | S | C |
| *Ipomoea triloba* | Cimber | Exotic | S | | | O | | | O |
| *Ixora chinensis* | Shrub | Native | | | O | C | | | |
| *Ixora coccinea* | Shrub | Exotic | | | | O | | | |
| *Juniperus chinensis* | Tree | Exotic | | | | S | | | |
| *Kalanchoe tubiflora* | Herb | Exotic | | | | S | | | |
| *Khaya senegalensis* | Tree | Exotic | | | O | S | | | |
| *Koelreuteria bipinnata* | Tree | Exotic | | | S | O | | | |
| *Lactuca sativa* | Herb | Exotic | | | | | | C | |
| *Lagerstroemia speciosa* | Tree | Native | | | O | O | | | |
| *Lantana camara* | Shrub | Exotic | S | | O | C | | | |
| *Lantana montevidensis* | Shrub | Exotic | | | S | S | | | |
| *Lemna minor* | Herb | Native | | | | | | | S |
| *Leucaena leucocephala* | Tree | Exotic | O | C | C | C | O | S | O |
| *Ligustrum sinense* | Tree | Native | | | S | C | | | |
| *Liquidambar formosana* | Tree | Native | | | | O | | | |
| *Litchi chinensis* | Tree | Exotic | | | | O | | O | |
| *Litsea glutinosa* | Tree | Native | | | | S | | | |
| *Livistona chinensis* | Tree | Exotic | | | O | O | | | |
| *Lophostemon confertus* | Tree | Exotic | | | S | S | | | S |
| *Loropetalum chinense* f. *rubrum* | Shrub | Exotic | | | | S | | | |
| *Ludwigia octovalvis* | Herb | Native | S | | | S | | | |
| *Macaranga tanarius* var. *tomentosa* | Tree | Native | S | S | S | C | O | S | C |
| *Macroptilium atropurpureum* | Herb | Exotic | | | | O | | | |
| *Malvastrum coromandelianum* | Shrub | Native | | | | C | | | |

| **Species** | **Habit** | **Origin** | **Relative abundance** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **PA** | **DC/ N** | **PI** | **U/D** | **G/S** | **A** | **Po** |
| *Mangifera indica* | Tree | Exotic | | | | O | | O | |
| *Melaleuca bracteata* | Tree | Exotic | | | O | | | | |
| *Melaleuca cajuputi* subsp. *cumingiana* | Tree | Exotic | | | C | C | | | S |
| *Melia azedarach* | Tree | Exotic | S | S | O | C | S | S | S |
| *Microcos nervosa* | Tree | Native | | | | S | | | |
| *Microstegium ciliatum* | Herb | Native | S | | | S | | | |
| *Mikania micrantha* | Herb | Exotic | O | C | O | C | C | S | |
| *Mimosa pudica* | Herb | Exotic | S | | | O | S | | |
| *Miscanthus floridulus* | Herb | Native | S | O | | | | | O |
| *Monstera deliciosa* | Shrub | Exotic | | S | | | | | |
| *Murraya paniculata* | Tree | Exotic | | C | | O | | | |
| *Musa* x *paradisiaca* | Herb | Exotic | | | | S | S | | O |
| *Nelumbo nucifera* | Herb | Exotic | | | | S | | | |
| *Neyraudia reynaudiana* | Herb | Native | | | | C | S | | O |
| *Osmanthus fragrans* | Shrub | Exotic | | | | S | | | |
| *Osmunda vachellii* | Herb | Native | | | | | | | O |
| *Oxalis corniculata* | Herb | Native | | | | O | | | |
| *Oxalis debilis* subsp. *corymbosa* | Herb | Exotic | | S | C | O | | | |
| *Pachira aquatica* | Tree | Exotic | | | | | | | S |
| *Paederia scandens* | Climber | Native | S | O | O | O | S | | |
| *Panicum dichotomiflorum* | Herb | Native | | S | | | | | |
| *Panicum maximum* | Herb | Exotic | S | C | C | C | S | S | C |
| *Passiflora foetida* | Climber | Exotic | S | | | S | | | O |
| *Passiflora suberosa* | Climber | Exotic | | | | S | | | |
| *Pennisetum polystachion* | Herb | Exotic | | | | O | | | |
| *Pennisetum purpureum* | Herb | Exotic | S | | | S | S | | C |

| Species | Habit | Origin | Relative abundance | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | PA | DC/ N | PI | U/D | G/S | A | Po |
| *Peperomia obtusifolia* | Herb | Exotic | | | | S | | | |
| *Persicaria barbata* | Herb | Native | | S | | | | | |
| *Persicaria chinensis* | Herb | Native | | S | | S | | | |
| *Persicaria lapathifolia* | Herb | Native | | | | S | | | |
| *Persicaria perfoliata* | Herb | Native | | | | S | | | |
| *Phoenix roebelenii* | Tree | Exotic | | | O | S | | | |
| *Phragmites australis* | Herb | Native | | S | | | S | S | C |
| *Phyllanthus reticulatus var. glaber* | Shrub | Unknown | | | | S | S | | |
| *Phyllanthus tenellus* | Herb | Unknown | | | | S | | | |
| *Physalis angulata* | Herb | Native | | | | | | | S |
| *Pilea microphylla* | Herb | Exotic | | S | | | | | |
| *Platycladus orientalis* | Tree | Exotic | | | | S | | | |
| *Plumeria rubra* | Tree | Exotic | | | S | S | | | |
| *Podocarpus macrophyllus* | Tree | Native | | | | O | | | |
| *Portulaca pilosa* | Herb | Native | | | | S | | | |
| *Pouzolzia zeylanica* | Herb | Native | | | | S | | | |
| *Psidium guajava* | Tree | Exotic | | | | O | | S | |
| *Pteris insignis* | Herb | Native | | | | S | | | |
| *Pteris vittata* | Herb | Native | | | | S | S | | |
| *Pueraria lobata* var. *montana* | Climber | Native | | | S | O | | | |
| *Pueraria lobata* var. *thomsonii* | Climber | Exotic | | | | S | | | |
| *Pyrrosia adnascens* | Climber | Native | | | S | S | | | |
| *Ranunculus sceleratus* | Herb | Native | | S | | | | | |
| *Rhaphiolepis indica* | Shrub | Native | | | | S | | | |
| *Rhododendron pulchrum* | Shrub | Exotic | | | | S | | | |
| *Rhus hypoleuca* | Tree | Native | | | S | | | | |

| **Species** | **Habit** | **Origin** | **Relative abundance** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **PA** | **DC/ N** | **Pl** | **U/D** | **G/S** | **A** | **Po** |
| *Ricinus communis* | Shrub | Exotic | | | | | S | | |
| *Ruellia simplex* | Herb | Exotic | | | | S | | | |
| *Rumex japonicus* | Herb | Native | | | | | | | S |
| *Rumex trisetifer* | Herb | Native | S | S | | | | | |
| *Schefflera arboricola* | Climber | Exotic | | | | C | | | |
| *Schefflera heptaphylla* | Tree | Native | | | | S | | | |
| *Scoparia dulcis* | Herb | Exotic | | | | S | | | |
| *Senna siamea* | Tree | Exotic | | | | S | | | |
| *Senna surattensis* | Tree | Exotic | | | S | | | | |
| *Sesbania javanica* | Herb | Native | | | | | S | | |
| *Sesbania cannabina* | Herb | Exotic | | | | | S | | S |
| *Sida rhombifolia* | Shrub | Native | | | | O | | | |
| *Solanum americanum* | Herb | Exotic | | S | | O | | | S |
| *Solanum torvum* | Shrub | Exotic | | S | | S | | | |
| *Solanum lycopersicum* | Herb | Exotic | | | | | | O | |
| *Sonchus oleraceus* | Herb | Exotic | | | | O | | | |
| *Sporobolus fertilis* | Herb | Native | | | | O | | | |
| *Stephania longa* | Climber | Native | | | | S | | | |
| *Sterculia lanceolata* | Tree | Native | | | | S | | | |
| *Stromanthe sanguinea* | Herb | Exotic | | | | S | | | |
| *Syzygium cumini* | Tree | Exotic | | | | S | | | |
| *Syzygium jambos* | Tree | Exotic | | | | O | | | |
| *Terminalia catappa* | Tree | Exotic | | | | S | | | |
| *Terminalia mantaly* | Tree | Exotic | | | | O | | | |
| *Terminalia mantaly* cv. “Tricolor’ | Tree | Exotic | | | | S | | | |
| *Thunbergia grandiflora* | Climber | Exotic | | S | | | | | |

| Species | Habit | Origin | Relative abundance | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | PA | DC/ N | PI | U/D | G/S | A | Po |
| *Tradescantia zebrina* | Herb | Exotic | | | | S | | | |
| *Tradescantia spathacea* | Herb | Exotic | | | | S | | | |
| *Tridax procumbens* | Herb | Exotic | S | | | O | | | |
| *Typha angustifolia* | Herb | Exotic | S | | | | | | S |
| *Vernonia cinerea* | Herb | Native | | | | O | | | |
| *Wedelia trilobata* | Herb | Exotic | S | | O | C | O | | |
| *Youngia japonica* | Herb | Native | | O | | O | | | |
| *Zanthoxylum avicennae* | Tree | Native | | | S | | | | |
| *Zea mays* | Herb | Exotic | | | | S | | | |

## Annex 2 Bird Species recorded within the Assessment Area during the verification surveys (Habitats: DC/N = drainage channel/nullah, Pl = plantation, U/D = urbanized/disturbed, G/S = grassland/shrubland, A = agricultural land, Po = fishpond & flood storage pond; PA = Project Area)

| **Common names** | ***Scientific names*** | **DC /N** | **Pl** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Northern Shoveler | *Spatula clypeata* | + | | | | | | | Abundant winter visitor. Found in Deep Bay area. | Regional Concern |
| Eurasian Wigeon | *Mareca penelope* | + | | | | | | | Abundant winter visitor. Found in Deep Bay area, Tai Lam Chung. | Regional Concern |
| Little Grebe | *Tachybaptus ruficollis* | | | | | | + | | Common resident. Found in Deep Bay area. | Local Concern |
| Black-crowned Night Heron | *Nycticorax nycticorax* | | | | | | + | | Common resident and migrant. Widely distributed in Hong Kong. | Local Concern |
| Chinese Pond Heron | *Ardeola bacchus* | + | | | | | + | | Common resident. Widely distributed in Hong Kong. | Regional Concern |
| Grey Heron | *Ardea cinerea* | + | | | | | + | | Common winter visitor. Found in Deep | Potential Regional Concern |

| **Common names** | ***Scientific names*** | **DC /N** | **PI** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Bay area, Starling Inlet, Kowloon Park, Cape D'Aguilar. | |
| Great Egret | *Ardea alba* | + | | | | | + | | Common resident and winter visitor. Widely distributed in Hong Kong. | Regional Concern |
| Little Egret | *Egretta garzetta* | ++ | | + | | | + | | Common resident, migrant and winter visitor. Widely distributed in coastal area throughout Hong Kong. | Regional Concern |
| Great Cormorant | *Phalacrocorax carbo* | + | | | | | | | Common winter visitor. Widely distributed in coastal areas throughout Hong Kong. | Potential Regional Concern |
| Black Kite | *Milvus migrans* | | | | + | | | | Common resident and winter visitor. Widely distributed in Hong Kong. | Regional Concern |
| White-breasted Waterhen | *Amaurornis phoenicurus* | + | | + | | | + | | Common resident. Widely distributed in | |

| **Common names** | ***Scientific names*** | **DC /N** | **PI** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | wetland throughout Hong Kong. | |
| Pied Avocet | *Recurvirostra avosetta* | + | | | | | | | Abundant winter visitor. Found in Deep Bay area. | Regional Concern |
| Common Greenshank | *Tringa nebularia* | + | | | | | | | Abundant passage migrant and winter visitor. Found in Deep Bay area. | Regional Concern |
| Common Redshank | *Tringa totanus* | + | | | | | | | Abundant passage migrant and winter visitor. Found in Deep Bay area. | Local Concern |
| Common Sandpiper | *Actitis hypoleucos* | + | | | | | + | | Common passage migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong. | |
| Black-winged Stilt | *Himantopus himantopus* | + | | | | | | | Common migrant and wintor visitor. Found in Deep Bay area, Long Valley, Kam Tin. | Regional Concern |

| **Common names** | ***Scientific names*** | **DC /N** | **PI** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Domestic Pigeon | *Columba livia* | | + | + | + | + | + | + | Locally common resident. Widely distributed in urban area throughout Hong Kong. | |
| Spotted Dove | *Spilopelia chinensis* | | + | + | + | + | | + | Abundant resident. Widely distributed in Hong Kong. | |
| Greater Coucal | *Centropus sinensis* | | | + | | + | + | | Common resident. Widely distributed in Hong Kong. | |
| Plaintive Cuckoo | *Cacomantis merulinus* | | | | | | + | | Passage migrant and common visitor. Widely distributed in open area throughout Hong Kong. | |
| Asian Koel | *Eudynamys scolopaceus* | + | + | | | + | + | + | Common resident. Widely distributed in Hong Kong. | |
| White-throated Kingfisher | *Halcyon smyrnensis* | | | | | | + | | Common resident. Widely distributed in coastal areas throughout Hong Kong | Local Concern |

| **Common names** | ***Scientific names*** | **DC /N** | **PI** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Common Kingfisher | *Alcedo atthis* | + | | | | | + | | Common passage migrant and winter visitor. Widely distributed in wetland habitat throughout Hong Kong. | |
| Long-tailed Shrike | *Lanius schach* | | | + | | + | + | | Common resident. Widely distributed in open areas throughout Hong Kong. | |
| Black Drongo | *Dicrurus macrocercus* | | | + | | | | | Common autumn passage migrant and winter visitor. Widely distributed in open area throughout Hong Kong. | |
| Azure-winged Magpie | *Cyanopica cyanus* | | ++ | | | | | | Locally common breeding resident. Found in Mai Po. | |
| Eurasian Magpie | *Pica serica* | | | | | + | + | | Common resident. Widely distributed in Hong Kong | |

| **Common names** | ***Scientific names*** | **DC /N** | **PI** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Large-billed Crow | *Corvus macrorhynchos* | | | | + | + | | | Common resident. Widely distributed in Hong Kong | |
| Cinereous Tit | *Parus cinereous* | | + | | | | | | Common resident. Widely distributed in Hong Kong. | |
| Red-whiskered Bulbul | *Pycnonotus jocosus* | + | + | + | + | + | + | + | Abundant resident. Widely distributed in Hong Kong. | |
| Chinese Bulbul | *Pycnonotus sinensis* | | + | + | + | + | + | + | Abundant resident. Widely distributed in Hong Kong. | |
| Barn Swallow | *Hirundo rustica* | + | + | | | | | + | Abundant passage migrant and uncommon winter visitor. Widely distributed in Hong Kong. | |
| Cinereous Tit | *Parus cinereus* | + | + | | | + | | | Common resident. Widely distributed in Hong Kong. | |
| Dusky Warbler | *Phylloscopus fuscatus* | | | | | + | | + | Abundant winter visitor and migrant. Widely distributed in | |

| **Common names** | ***Scientific names*** | **DC /N** | **PI** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | shrubland and waterside vegetation throughout Hong Kong. | |
| Yellow-browed Warbler | *Phylloscopus inornatus* | | + | | + | | | | Abundant winter visitor and migrant. Widely distributed in woodland throughout Hong Kong. | |
| Yellow-bellied Prinia | *Prinia flaviventris* | + | | + | | + | | + | Common resident. Widely distributed in Hong Kong. | |
| Plain Prinia | *Prinia inornata* | + | | | | + | + | | Locally common resident. Widely distributed in grassland throughout Hong Kong. | |
| Common Tailorbird | *Orthotomus sutorius* | | + | | | + | | + | Common resident. Widely distributed in Hong Kong. | |
| Masked Laughingthrush | *Pterorhinus perspicillatus* | + | | + | + | + | + | | Abundant resident. Widely distributed in shrubland throughout Hong Kong. | |

| **Common names** | ***Scientific names*** | **DC /N** | **PI** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Japanese White-eye | *Zosterops japonicus* | + | + | | + | + | | + | Abundant resident. Widely distributed in Hong Kong. | |
| Crested Myna | *Acridotheres cristatellus* | + | + | + | + | | + | + | Common resident. Widely distributed in Hong Kong. | |
| Common Myna | *Acridotheres tristis* | | | + | | | | | Locally common resident. Found in Mai Po, Sheung Uk Tsuen, Sheung Shui, Kam Tin, Shek Kong, Ping Shan, Mong Tseng. | |
| Black-collared Starling | *Gracupica nigricollis* | | + | + | | + | + | + | Common resident. Widely distributed in Hong Kong. | |
| Grey-backed Thrush | *Turdus hortulorum* | | | | | | | + | Common winter visitor and migrant. Widely distributed in woodland throughout Hong Kong. | |
| Oriental Magpie Robin | *Copsychus saularis* | | + | + | + | | + | + | Abundant resident. Widely distributed in Hong Kong. | |

| **Common names** | ***Scientific names*** | **DC /N** | **PI** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Commonness & Distribution in Hong Kong [1]** | **Local/ Regional/ International Conservation Status / Level of concern [1]** |
|---|---|---|---|---|---|---|---|---|---|---|
| Daurian Redstart | *Phoenicurus auroreus* | + | + | | | | | | Common winter visitor. Widely distributed in Hong Kong. | |
| Eurasian Tree Sparrow | *Passer montanus* | | | ++ | +++ | + | ++ | ++ | Abundant resident. Widely distributed in Hong Kong. | |
| White Wagtail | *Motacilla alba* | + | | + | | | | + | Resident, common passage migrant and winter visitor. Widely distributed in Hong Kong. | |
| Olive-backed Pipit | *Anthus hodgsoni* | | | + | | | + | + | Common passage migrant and winter visitor. Widely distributed in Hong Kong. | |
| Black-faced Bunting | *Emberiza spodocephala* | | | + | | | | + | Common winter visitor and passage migrant. Widely distributed in Hong Kong. | |

Relative Abundance: +++ = abundant, ++ = moderate, + = few
1: AFCD (2022)
Level of concern: LC = local concern, PRC = potential regional concern, RC = regional 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 (Fellowes et al,.2002)

## Annex 3 Mammal and Herpetofauna Species recorded within the Assessment Area during the verification surveys (Habitats: DC/N = drainage channel/nullah, Pl = plantation, U/D = urbanized/disturbed, G/S = grassland/shrubland, A = agricultural land, Po = fishpond & flood storage pond; PA = Project Site)

| Common names | *Scientific names* | DC/ N | Pl | U/D | G/S | A | Po | PA | Distribution in Hong Kong* |
|---|---|---|---|---|---|---|---|---|---|
| **Mammal** | | | | | | | | | |
| Domestic Ox | *Bos taurus* | | | | | | + | | Widely distributed in countryside areas throughout Hong Kong, except for Hong Kong Island and northwestern New Territories. |
| Domestic Water Buffalo | *Bubalus bubalis* | | | + | | | | | Found in Kam Tin, and the southern part of Lantau Island. |
| Japanese Pipistrelle** | *Pipistrellus abramus* | + | | + | + | + | + | + | Widely distributed throughout Hong Kong. |
| Indochinese Forest Rat | *Rattus andamanensis* | | + | | | | | | Widely distributed in countryside areas throughout Hong Kong. |
| **Amphibian** | | | | | | | | | |
| Asian Common Toad | *Duttaphrynus melanostictus* | | + | + | + | + | + | | Widely distributed throughout Hong Kong |
| Asiatic Painted Frog | *Kaloula pulchra* | + | | + | | + | + | | Widely distributed throughout Hong Kong |
| Gunther's Frog | *Sylvirana guentheri* | + | | | + | + | ++ | + | Widely distributed throughout Hong Kong |

| **Common names** | ***Scientific names*** | **DC/ N** | **Pl** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Distribution in Hong Kong*** |
|---|---|---|---|---|---|---|---|---|---|
| Brown Tree Frog | *Polypedates megacephalus* | | | + | | + | + | + | Widely distributed in Hong Kong |
| **Reptile** | | | | | | | | | |
| Red-eared Slider | *Trachemys scripta* | ++ | | | | | | | Widely distributed and commonly found in reservoirs or ponds in urban parks |
| Long-tailed Skink | *Eutropis longicaudata* | + | | + | + | | | + | Widely distributed throughout Hong Kong |
| Reeves's Smooth Skink | *Scincella reevesii* | + | + | | + | | + | | Widely distributed in woodlands throughout Hong Kong. |
| Chinese Gecko | *Gekko chinensis* | | | + | + | + | | + | Widely distributed throughout Hong Kong |
| Bowring's Gecko | *Hemidactylus bowringii* | | | ++ | | | | + | Distributed throughout Hong Kong |

Relative Abundance: +++ = abundant, ++ = moderate, + = few
* AFCD (2022)
** protected under WAPO in Hong Kong

**Annex 4** **Butterfly Species recorded within the Assessment Area during the verification surveys (Habitats: DC/N = drainage channel/nullah, Pl = plantation, U/D = urbanized/disturbed, G/S = grassland/shrubland, A = agricultural land, Po = fishpond & flood storage pond; PA = Project Site)**

| **Common names** | ***Scientific names*** | **DC/ N** | **Pl** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Abundance and Distribution in Hong Kong*** |
|---|---|---|---|---|---|---|---|---|---|
| Forest Hopper | *Astictopterus jama* | | | + | | | | | Common. Widely distributed throughout Hong Kong. |
| Lime Blue | *Chilades lajus* | | | + | + | + | | + | Common. Widely distributed throughout Hong Kong |
| Dark Grass Blue | *Zizeeria karsandra* | | + | | | | + | + | Uncommon. High Junk Peak, Kat O, Po Toi Island, Shek Mun Kap, Lai Chi Wo, Yung Shue O |
| Red-base Jezebel | *Delias pasithoe* | + | + | | + | + | + | + | Very common. Widely distributed throughout Hong Kong |
| Great Orange Tip | *Hebomoia glaucippe* | | + | + | + | | + | | Common. Widely distributed throughout Hong Kong |
| Indian Cabbage White | *Pieris canidia* | | | + | + | + | + | + | Very common. Widely distributed throughout Hong Kong |
| Common Grass Yellow | *Eurema hecabe* | + | | + | + | + | + | + | Very common. Widely distributed throughout Hong Kong |
| Mottled Emigrant | *Catopsilia pyranthe* | | | + | | | | | Very common. Widely distributed throughout Hong Kong |

| **Common names** | ***Scientific names*** | **DC/ N** | **Pl** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Abundance and Distribution in Hong Kong*** |
|---|---|---|---|---|---|---|---|---|---|
| Lemon Emigrant | *Catopsilia pomona* | | | | + | | | | Common. Widely distributed throughout Hong Kong |
| Common Mormon | *Papilio polytes* | + | + | | | | | | Very common. Widely distributed throughout Hong |
| Great Mormon | *Papilio memnon* | | + | | + | + | | + | Very common. Widely distributed throughout Hong |
| Red Helen | *Papilio helenus* | | | | | | + | | Very common. Widely distributed throughout Hong Kong |
| Paris Peacock | *Papilio paris* | | | + | | + | | | Very common. Widely distributed throughout Hong Kong |
| Common Five-ring | *Ypthima baldus* | | | | + | | | | Very common. Widely distributed throughout Hong Kong |
| Common Mapwing | *Cyrestis thyodamas* | | | | | + | | | Common. Widely distributed throughout Hong Kong |
| Rustic | *Cupha erymanthis* | | + | + | | | | | Very common. Widely distributed throughout Hong Kong |
| Angled Castor | *Ariadna airadne* | | | + | | | | | Common. Widely distributed throughout Hong Kong. |
| Plum Judy | *Abisara echerius* | + | | | | | + | | Very common. Widely distributed throughout Hong Kong |

| **Common names** | ***Scientific names*** | **DC/ N** | **Pl** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Abundance and Distribution in Hong Kong*** |
|---|---|---|---|---|---|---|---|---|---|
| Punchinello | *Zemeros flegyas* | + | + | | | | | | Common. Very common. Widely distributed throughout Hong Kong |
| Common Tiger | *Danaus genutia* | | | + | | | | | Common. Widely distributed throughout Hong Kong |
| Common Indian Crow | *Euploea core* | + | + | | | | | | Common. Widely distributed throughout Hong Kong |
| Blue-spotted Crow | *Euploea midamus* | | | | | + | | | Very common. Widely distributed throughout Hong Kong |
| Ceylon Blue Glassy Tiger | *Ideopsis similis* | | + | + | | | | | Very Common. Widely distributed throughout Hong Kong |

Relative Abundance: +++ = abundant, ++ = moderate, + = few
* AFCD (2022)

## Annex 5 Dragonfly Species recorded within the Assessment Area during the verification surveys (Habitats: DC/N = drainage channel/nullah, Pl = plantation, U/D = urbanized/disturbed, G/S = grassland/shrubland, A = agricultural land, Po = fishpond & flood storage pond; PA = Project Area)

| **Common names** | ***Scientific names*** | **DC/ N** | **Pl** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Abundance and Distribution in Hong Kong*** |
|---|---|---|---|---|---|---|---|---|---|
| Orange-tailed Midget | *Agriocnemis femina* | | | | | + | + | | Abundant. Widely distributed in disused paddy fields, marshes, ditches and weedy ponds margins. |
| Orange-tailed Sprite | *Agriocnemis pygmaea* | | | | | + | + | + | Abundant. Widely distributed in weedy ponds, marshes, abandoned fields or grasslands adjacent to waters. |
| Common Bluetail | *Ischnura senegalensis* | | | | | + | + | + | Abundant. Widely distributed in all wetland habitats except fast flowing rivers throughout Hong Kong. |
| Red-faced Skimmer | *Orthetrum chrysis* | + | | | | | | | Abundant. Widely distribute in pools and marshy areas adjacent to flowing streams throughout Hong Kong |
| Common Blue Skimmer | *Orthetrum glaucum* | | + | | | | + | | Abundant. Widely distributed in streams, conduits, drainage channels, seepages and road gutters throughout Hong Kong |
| Common Red Skimmer | *Orthetrum pruinosum* | | | | | + | | | Abundant. Widely distributed in slow streams, ponds, rain puddles and irrigation conduits |

| **Common names** | ***Scientific names*** | **DC/ N** | **Pl** | **U/D** | **G/S** | **A** | **Po** | **PA** | **Abundance and Distribution in Hong Kong*** |
|---|---|---|---|---|---|---|---|---|---|
| Green Skimmer | *Orthetrum sabina* | | | + | + | + | | + | Abundant. Widely distributed in all wetland habitats throughout Hong Kong |
| Asian Amberwing | *Brachythemis contaminata* | | | | | | + | + | Abundant. Widely distributed in weedy ponds and sluggish streams |
| Wandering Glider | *Pantala flavescens* | | + | + | + | + | + | + | Abundant. Widely distributed all over Hong Kong |
| Blue Dasher | *Brachydiplax chalybea* | | | | | + | | | Common. Widely distribute in marshes and weedy ponds throughout Hong Kong |
| Crimson Dropwing | *Trithemis aurora* | + | | + | | + | | | Abundant. Found in marshes, ponds, streams, and or even ornamental ponds in urban areas. Widely distributed throughout Hong Kong. |

Relative Abundance: +++ = abundant, ++ = moderate, + = few
* AFCD (2022)

## Annex 6 Aquatic fauna Species recorded within the Assessment Area during the verification surveys

| **Common names** | ***Scientific names*** | **DC/ N** | **Commonness in Hong Kong*** |
|---|---|---|---|
| Mozambique Tilapia | *Oreochromis mossambicus* | ++ | Widespread in brackish waters, freshwater ponds, ditches, rivers and reservoirs. The fish is also cultivated in some local fish farms. |
| Grey Mullet | *Mugil cephalus* | + | Widespread in estuaries and marine environment in Hong Kong. |

| **Common names** | ***Scientific names*** | **DC/ N** | **Commonness in Hong Kong*** |
|---|---|---|---|
| Mudskipper | *Periophthalmus cantonensis* | + | It is the commonest mudskipper in Hong Kong and almost found in all mudflats and estuaries. |
| Apple Snail | *Pomacea canaliculata* | +++ | Common |
| Freshwater Snail | *Melanoides tuberculata* | + | Common |

Relative Abundance: +++ = abundant, ++ = moderate, + = few
* AFCD (2022)