

**9.4.2.8** Red Muntjac is listed as being of Potential Regional Concern (Fellowes *et al.* 2002) though is very common in Hong Kong (AFCD 2015). Singles were recorded from camera traps in both the upland grassland and wet woodland of the Project boundary.

## 9.4.3 Avifauna

### Literature Review

**9.4.3.1** PlanD (2010) recorded twenty-two bird species of conservation importance and wetland-dependant species at village and agricultural area south of Sandy Ridge Cemetery (i.e. outside of the Project boundary but within the assessment area). These included Little Grebe, Grey Heron, Great Egret, Intermediate Egret, Little Egret, Cattle Egret, Chinese Pond Heron, Night Heron, Cinnamon Bittern, Common Teal, White-breasted Waterhen, Greater Painted-snipe, Black-winged Stilt, Little Ringed Plover, Common snipe, Wood Sandpiper, Green Sandpiper, Common Sandpiper, Pied Kingfisher, White-throated Kingfisher, Yellow-billed Grosbeak and Red-billed Starling.

**9.4.3.2** During ecological surveys for the PER in 2013, 39 species of bird were seen or heard within the Project boundary of which House Swift, Masked Laughingthrush, Yellow-browed Warbler and Japanese White-eye were the dominant species. Among the 39 recorded bird species, there were two species of conservation interest: Black Kite and Common Buzzard. These two species are widespread and common in Hong Kong; however they are listed as Class II Protected Animals of the PRC. All wild birds are afforded legal protection in Hong Kong under *Wild Animals Protection Ordinance* (Cap. 170).

### Field Survey

**9.4.3.3** A total of 131 bird species were recorded from the assessment area (including Project Site) during surveys (**Appendix 9.5**), including 47 species considered to be of conservation concern (Fellowes *et al.* 2002, IUCN 2013), under State Protection in China and/or listed in CITES. Within the Project boundary, 86 bird species were recorded including 19 species of conservation concern (**Table 9.3**). Given the mobility of this species group, locations of individuals of conservation concern have not been mapped and instead details have been provided in the following table and paragraphs.

**Table 9.3** Bird species of conservation concern recorded between August 2013 and December 2014 (maximum numbers recorded are shown)

Common Name	Scientific Name	Conservation Status <sup>[1]</sup>	Conservation Status <sup>[2]</sup>	Project Site	Assessment Area (excluding Project Site)
Eurasian Teal	<i>Anas crecca</i>	RC		-	15

Common Name	Scientific Name	Conservation Status <sup>[1]</sup>	Conservation Status <sup>[2]</sup>	Project Site	Assessment Area (excluding Project Site)
Little Grebe	<i>Tachybaptus ruficollis</i>	LC		-	4
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	LC		-	1
Malayan Night-heron	<i>Gorsachius melanolophus</i>		EN	-	1
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	(LC)		-	20
Striated Heron	<i>Butorides striata</i>	(LC)		-	1
Chinese Pond Heron	<i>Ardeola bacchus</i>	PRC (RC)		1	9
Eastern Cattle Egret	<i>Bubulcus coromandus</i>	(LC)		-	10
Grey Heron	<i>Ardea cinerea</i>	PRC		-	66
Great Egret	<i>Ardea alba</i>	PRC (RC)		-	12
Intermediate Egret	<i>Egretta intermedia</i>	RC		-	2
Little Egret	<i>Egretta garzetta</i>	PRC (RC)		-	9
Great Cormorant	<i>Phalacrocora carbo</i>	PRC		6	64
Black Kite	<i>Milvus migrans</i>	(RC)		1	1
Crested Serpent Eagle	<i>Spilornis cheela</i>	(LC)	Vu	-	1
Bonelli's Eagle	<i>Aquila fasciata</i>	(RC)	R	-	1
Little Ringed Plover	<i>Charadrius dubius</i>	(LC)		-	3
Wood Sandpiper	<i>Tringa glareola</i>	LC		-	2
Common Greenshank	<i>Tringa nebularia</i>	RC		-	3
Greater Painted-snipe	<i>Rostratula benghalensis</i>	LC		-	9
Pintail/ Swinhoe's Snipe	<i>Gallinago stenura/ Gallinago megala</i>	LC for Swinhoe's Snipe		-	1
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	(LC)		1	3
Pied Kingfisher	<i>Ceryle rudis</i>	(LC)		-	3
Greater Coucal	<i>Centropus sinensis</i>		Vu	-	1
Lesser Coucal	<i>Centropus bengalensis</i>		Vu	-	2

Common Name	Scientific Name	Conservation Status <sup>[1]</sup>	Conservation Status <sup>[2]</sup>	Project Site	Assessment Area (excluding Project Site)
Grey-chinned Minivet	<i>Pericrocotus solaris</i>	LC		-	2
Ashy Drongo	<i>Dicrurus leucophaeus</i>	LC		1	-
Collared Crow	<i>Corvus torquatus</i>	LC, NT		5	2
Chinese Penduline Tit	<i>Remiz consobrinus</i>	RC		-	6
Goodson's Leaf Warbler	<i>Phylloscopus goodsoni</i>	LC		1	-
Zitting Cisticola	<i>Cisticola juncidis</i>	LC		5	4
Golden-headed Cisticola	<i>Cisticola exilis</i>	LC		16	2
Chestnut-collared Yuhina	<i>Yuhina castaniceps</i>	LC		12	-
Red-billed Starling	<i>Spodiopsar sericeus</i>	GC		-	5
White-cheeked Starling	<i>Spodiopsar cineraceus</i>	PRC		-	8
White-shouldered Starling	<i>Sturnia sinensis</i>	LC		-	10
Grey Bush Chat	<i>Saxicola ferreus</i>	LC		-	1
Red-throated Pipit	<i>Anthus cervinus</i>	LC		1	-
Chinese Grosbeak	<i>Eophona migratoria</i>	LC		8	47
Chestnut-eared Bunting	<i>Emberiza fucata</i>	LC		1	-
Yellow-breasted Bunting	<i>Emberiza aureola</i>	RC, EN		1	-
Eastern Buzzard	<i>Buteo japonicus</i>	Appendix II	Class II	3	2
Common Kestrel	<i>Falco tinnunculus</i>	Appendix II	Class II	2	-
Amur Falcon	<i>Falco amurensis</i>	Appendix II	Class II	1	-
Asian Barred Owllet	<i>Glaucidium cuculoides</i>	Appendix II	Class II	-	1
Silver-backed Needletail	<i>Hirundapus cochinchinensis</i>		Class II	1	-
Chinese Hwamei	<i>Garrulax canorus</i>	Appendix II		2	3
<b>Total Number of Species</b>				<b>19</b>	<b>38</b>

Note:

- [1] Fellowes *et al.* 2002, IUCN 2013, GC = Global Concern; PRC = Potential Regional Concern; RC = Regional Concern; LC = Local Concern, as of Fellowes *et al.* (2002). Those in parenthesis indicate that the assessment is on the basis of restrictedness in breeding and/or roosting rather than general occurrence. EN = Endangered, NT = Near Threatened as of IUCN (2013). Appendix I/II/III = Species Listed under Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and protected under Cap. 586. \* Recorded in flight.
- [2] All bird species protected under Cap 170 in Hong Kong. Conservation Status according to China Red Data Book: Aves (1998): Vu = Vulnerable; EN = Endangered, R= Rare. List of Wild Animals under State Protection (promulgated by State Forestry Administration and Ministry of Agriculture on 14 January 1989): Class I or II

#### Eurasian Teal

- 9.4.3.4** Recorded in small numbers during the winter months from the Ponds at Sha Ling and not recorded from the Project boundary. A maximum of 15 individuals were recorded and such numbers are not of significance in a Hong Kong context for what is an abundant winter visitor to Deep Bay (Carey *et al.* 2001).

#### Little Grebe

- 9.4.3.5** Recorded in small numbers during the year, with a maximum of four individuals in the assessment area but not recorded within the Project boundary. Single pairs probably breed at Yuen Leng Chai and Sha Ling, although breeding was not proven. Such numbers are not of significance in a Hong Kong context for what is a locally resident in Deep Bay (Carey *et al.* 2001).

#### Cinnamon Bittern

- 9.4.3.6** A single individual was recorded outside of the Project boundary at Sha Ling in April 2014, a typical date for a spring migrant. Although a scarce passage migrant in Hong Kong (Carey *et al.* 2001), single records of passage migrants are not of significance in a Hong Kong context.

#### Malayan Night-heron

- 9.4.3.7** A calling individual was recorded from dense woodland on the western limit of the assessment area close to Ho Sheung Heung egretty. Not recorded in Hong Kong until 2003, this is probably a rare breeding species in Hong Kong in undisturbed wooded areas and a rare spring migrant (Welch 2015).

#### Black-crowned Night Heron

- 9.4.3.8** Recorded outside of the Project boundary on two dates with up to 20 noted at Sha Ling. Small numbers were regularly recorded on the Ping Yuen River. There was no evidence of breeding and such numbers are not considered to of significance in a Hong Kong context for what is a common to abundant resident and winter visitor (Carey *et al.* 2001).

#### Striated Heron

**9.4.3.39** Recorded once (ten individuals) during surveys from outside of the Project boundary. A common passage migrant, and scarce breeder and winter visitor in Hong Kong (Carey *et al.* 2001), a single record is not of significance in a Hong Kong context.

Grey Bush Chat

**9.4.3.40** A single wintering bird was recorded in the assessment area during December 2013 and February 2014. There were no records from the Project boundary. A record of a single bird, regularly recorded on a winter territory, which is a scarce winter visitor and passage migrant to Hong Kong (Carey *et al.* 2001) is not of significance in a Hong Kong context.

Red-throated Pipit

**9.4.3.41** A single bird was recorded from the top of Sandy Ridge within upland grassland on a single survey. Given this is for a common winter visitor and passage migrant in Hong Kong (Carey *et al.* 2001), this single record is not of significance in a Hong Kong context.

Chinese Grosbeak

**9.4.3.42** Recorded regularly from December 2013 to February 2014, most records were from the assessment area with a peak count of 47 individuals at Man Kam To in December 2013. The highest count at a single site was 32 individuals at Man Kam To in December 2013. There was a single record within the Project boundary comprising of eight birds in December 2013. This is a scarce and localised winter visitor to Hong Kong (Carey *et al.* 2001), and the assessment area, but not the Project boundary, is probably of importance to this species in a Hong Kong context.

Chestnut-eared Bunting

**9.4.3.43** Single migrants were recorded in upland grassland within the Project boundary during November 2013 and March 2014. Although a scarce migrant and rare winter visitor in Hong Kong (Carey *et al.* 2001), single records of passage migrants are not of significance in a Hong Kong context.

Yellow-breasted Bunting

**9.4.3.44** A single migrant was recorded in upland grassland within the Project boundary during November 2013. This species is listed as Endangered by BirdLife International (2014), and is considered an uncommon to common passage migrant by Carey *et al.* (2001). However, single records of passage migrants are not of significance in a Hong Kong context.

**Eastern Buzzard**

**9.4.3.45** Up to three birds were recorded on four different occasions within the Project boundary (i.e. as delineated in the EIA Study Brief) and twice from the assessment area. All records were of birds soaring overhead

(except at “Agriculture” in “Assessment Area”). Such numbers are not of significance for a species in a Hong Kong context which is a common winter visitor (Carey et al. 2001).

#### Common Kestrel

- 9.4.3.46** Up to two birds recorded on three occasions patrolling over upland grassland bird outside of the works area in the Project boundary. As such, it is not considered to be of conservation importance in a Hong Kong context. It is a common autumn migrant and winter visitor to open country in Hong Kong (Welch 2015).

#### Amur Falcon

- 9.4.3.47** A single bird seen perched on overhead lines at the summit of Sandy Ridge, outside of the works area, on a single occasion. An uncommon autumn passage migrant (Welch 2015), this single record is not considered that this species is of conservation importance in a Hong Kong context.

#### Asian Barred Owlet

- 9.4.3.48** Single birds were recorded on three occasions from woodland and areas of upland grassland in the wider Study Area. This species is common, though locally-distributed, resident from forest and open country areas in the north and central New Territories (Welch 2015). These records of individual birds are not considered to be of conservation importance in a Hong Kong context.

#### Silver-backed Needletail

- 9.4.3.49** A single bird recorded on one occasion passing over Sandy Ridge, this species is a scarce spring passage migrant (Welch 2015). As such this single record is not considered that this species is of conservation importance in a Hong Kong context.

#### Chinese Hwamei

- 9.4.3.50** Up to two birds recorded calling from several habitats (Shrubland, Upland Grassland, Plantation and Woodland) in the wider Project Site boundary and up to three birds calling from Shrubland in the 500m assessment area. Regularly recorded throughout the Project boundary and assessment area during the survey period. A common and widespread resident in shrubland with a maximum count of 21 (Welch 2015), the records from this Study are not considered to be of conservation importance in a Hong Kong context.

**Table 9.20** Summary of bird species of conservation importance recorded within the Project boundary and the assessment area

Species/Group	Conservation Status <sup>^</sup>	Conservation Status <sup>^^</sup>	Locations/ Habitats Recorded in Project Site (PS)/ Assessment Area (AA)	Rarity/HK Status (AFCD 2015, Carey <i>et al.</i> 2001)
Birds (all birds protected under WAPO) (Rarity/HK Status as of Carey <i>et al.</i> 2001)				
Eurasian Teal	RC	-	Pond, Agriculture (AA)	Abundant winter visitor to Deep Bay
Little Grebe	LC	-	Pond (AA)	Local resident in Deep Bay
Cinnamon Bittern	LC	-	Agriculture (AA)	Scarce passage migrant
Malayan Night Heron	-	En	Woodland (AA)	Rare breeder and passage migrant
Black-crowned Night Heron	(LC)	-	Watercourse, Pond (AA)	Common to abundant resident and winter visitor
Striated Heron	(LC)	-	Woodland (AA)	Locally uncommon in summer and scarce in winter
Chinese Pond Heron	PRC (RC)	-	Agriculture, Pond, Watercourse, Woodland (PS/AA)	Common resident
Eastern Cattle Egret	(LC)	-	Agriculture, Upland Grassland, Woodland, Pond, Watercourse (AA)	Uncommon to common
Grey Heron	PRC	-	Pond, Agriculture, Watercourse, Shrubland (Overhead) (AA)	Abundant winter visitor to Deep Bay

Species/Group	Conservation Status <sup>^</sup>	Conservation Status <sup>^^</sup>	Locations/Habitats Recorded in Project Site (PS)/ Assessment Area (AA)	Rarity/HK Status (AFCD 2015, Carey <i>et al.</i> 2001)
Great Egret	PRC (RC)	-	Pond, Woodland, Watercourse (AA)	Common to abundant
Intermediate Egret	RC	-	Pond, Agriculture (AA)	Common passage migrant through Deep Bay
Little Egret	PRC (RC)	-	Watercourse, Pond, Watercourse, Developed Area (AA)	Abundant resident
Great Cormorant	PRC	-	Pond, Marsh, Woodland, Watercourse, Upland Grassland, Overhead (PS/AA)	Abundant winter visitor to Deep Bay
Black Kite	(RC)	-	Upland Grassland, Watercourse (Overhead), (PS/AA)	Abundant winter visitor and with a significant non-breeding population
Crested Serpent Eagle	(LC)	Vu	Wet Woodland (AA)	Uncommon resident.
Bonelli's Eagle	(RC)	R	Upland grassland (Overhead) (AA)	Locally distributed scarce resident.
Little Ringed Plover	(LC)	-	Agriculture (AA)	Locally common in winter and a scarce breeding species
Wood Sandpiper	LC	-	Watercourse (AA)	Abundant passage migrant and winter visitor
Common Greenshank	GC	-	Watercourse (AA)	Abundant passage migrant and winter visitor
Greater Painted-snipe	LC	-	Agriculture (AA)	Rare and localised breeding species



Species/Group	Conservation Status <sup>^</sup>	Conservation Status <sup>^^</sup>	Locations/Habitats Recorded in Project Site (PS)/ Assessment Area (AA)	Rarity/HK Status (AFCD 2015, Carey <i>et al.</i> 2001)
Pintail/ Swinhoe's Snipe	LC for Swinhoe's Snipe	-	Agriculture (AA)	Common/uncommon Passage migrant
Greater Coucal	-	Vu	Upland grassland, Pond, Agriculture, Woodland, Shrubland Developed Area (AA)	Common resident
Lesser Coucal	-	Vu	Upland Grassland (AA)	Common resident
White-throated Kingfisher	(LC)	-	Woodland, Upland grassland, Plantation, Pond, Agriculture, Marsh, Watercourse (PS/AA)	Resident in Hong Kong and locally common in autumn and winter
Pied Kingfisher	(LC)	-	Pond, Watercourse (AA)	Uncommon localized resident in Hong Kong mainly recorded the Deep Bay area and the northeast New Territories
Grey-chinned Minivet	LC	-	Plantation (AA)	Scarce to uncommon in summer in Hong Kong and common in winter
Ashy Drongo	LC	-	Upland Grassland (PS)	Scarce but regular and widespread winter visitor
Collared Crow	LC; NT	-	Upland Grassland (Overhead), Watercourse, Woodland (PS/AA)	Uncommon and localised resident, most frequent in the Deep Bay area

Species/Group	Conservation Status <sup>^</sup>	Conservation Status <sup>^^</sup>	Locations/Habitats Recorded in Project Site (PS)/ Assessment Area (AA)	Rarity/HK Status (AFCD 2015, Carey <i>et al.</i> 2001)
Chinese Penduline Tit	RC	-	Marsh (AA)	Common passage migrant and winter visitor
Goodson's Leaf Warbler	LC	-	Woodland (PS)	Scarce winter visitor
Zitting Cisticola	LC	-	Upland Grassland, Agriculture, (PS/AA)	Common winter visitor and passage migrant and a rare breeding species.
Golden-headed Cisticola	LC	-	Upland Grassland, Shrubland, (PS/AA)	Widespread passage migrant and winter visitor and a scarce and localised breeding species
Chestnut-collared Yuhina	(LC)	-	Woodland (PS)	Irruptive winter visitor
Red-billed Starling	GC	-	Agriculture, Woodland (AA)	Abundant but localised winter visitor
White-cheeked Starling	PRC	-	Agriculture (AA)	Common but localised winter visitor
White-shouldered Starling	(LC)	-	Agriculture (AA)	A common passage migrant and scarce breeder and winter visitor
Grey Bush Chat	LC	-	Shrubland, Woodland (AA)	Scarce winter visitor and passage migrant
Red-throated Pipit	LC	-	Upland Grassland (PS)	Common winter visitor and passage migrant
Chinese Grosbeak	LC	-	Shrubland, Woodland (PS/AA)	Scarce and localised winter visitor
Chestnut-eared Bunting	LC	-	Upland Grassland (PS)	Scarce migrant and rare winter visitor

Species/Group	Conservation Status <sup>^</sup>	Conservation Status <sup>^^</sup>	Locations/Habitats Recorded in Project Site (PS)/ Assessment Area (AA)	Rarity/HK Status (AFCD 2015, Carey <i>et al.</i> 2001)
Yellow-breasted Bunting	RC; EN	-	Upland Grassland (PS)	Uncommon to common passage migrant
Eastern Buzzard	Appendix II	Class II	Upland Grassland (PS), Plantation (PS), Woodland (PS) and Agriculture (AA)	Common winter visitor
Common Kestrel	Appendix II	Class II	Upland Grassland (PS)	Common autumn migrant and winter visitor
Amur Falcon	Appendix II	Class II	Upland Grassland (PS)	Rare passage migrant
Asian Barred Owllet	Appendix II	Class II	Upland Grassland, Woodland (AA)	Uncommon resident
Silver-backed Needletail	-	Class II	Upland Grassland (PS)	Uncommon passage migrant
Chinese Hwamei	Appendix II	-	Upland Grassland, Plantation (PS); Shrubland and Woodland (PS and AA); Wet Woodland (AA)	Common resident

<sup>^</sup> According to Fellowes *et al.* (2002) and IUCN (2014). Key for Fellowes *et al.*: GC= Global Concern; PRC= Potential Regional Concern; RC=Regional Concern; LC = Local Concern, as of Fellowes *et al.* (2002). Those in parenthesis indicate that the assessment is on the basis of restrictedness in breeding and/or roosting rather than general occurrence. Key for IUCN: EN = Endangered, NT = Near Threatened, as of IUCN (2014). Appendix I/II/III = Species Listed under Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and protected under Cap. 586.

<sup>^^</sup> Conservation Status according to China Red Data Book: Aves ( Zheng & Wang 1998): Vu = Vulnerable; En = Endangered, R=Rare. List of Wild Animals under State Protection (promulgated by State Forestry Administration and Ministry of Agriculture on 14 January 1989): Class I or II.

**Direct impacts on Nesting Birds**

**9.6.3.32** Birds will be able to avoid most direct mortality arising from direct impacts of the Project. However, they are vulnerable in the breeding season, especially eggs or nestlings, during periods of vegetation clearance and site preparation works.

**9.6.3.33** Species recorded breeding within the Project boundary includes ground nesting birds (i.e. Chinese Francolin and Savannah Nightjar), rank vegetation-nesting species (i.e. Golden-headed Cisticola\*, Yellow-bellied Prinia and Plain Prinia) and tree-nesting species (Long-tailed Shrike).

**9.6.3.34** Potential mortality to breeding birds is assessed below.

**Table 9.35** Potential direct ecological impacts (mortality) on breeding birds within the Project boundary in the absence of mitigation measures

Criteria	Direct Impacts on Nesting Birds
Habitat Quality	Variable, breeding locations do not necessarily reflect the habitat quality of the immediate area.
Species	Ground-nesting birds (Chinese Francolin, Savannah Nightjar), rank vegetation-nesting species (Golden-headed Cisticola*, Yellow-bellied Prinia and Plain Prinia; the former listed as Local Concern (Fellowes <i>et al.</i> 2002)) and tree/shrub-nesting species (Long-tailed Shrike)
Size/Abundance	Low-moderate; Low abundance of breeding birds are present in most habitats
Duration	Direct mortality: Permanent
Reversibility	Irreversible but remediation possible
Magnitude	Generally low as period of vulnerability at any one location will be short and localised
Impact Severity	Generally <b>Low to Moderate</b> severity

\*see also below on detailed evaluation of impact for Golden-headed Cisticola.

**9.6.3.35** No direct impacts are predicted on either Ho Sheung Heung or Man Kam To Egrettries given the distance between the works boundary and each of these two breeding sites.

**Direct Impacts on Bird Species of Conservation Concern**

**9.6.3.36** Species of conservation concern would be impacted by the direct loss of habitats.

**Table 9.36** Potential direct ecological impacts on bird species of conservation concern within the Project boundary in the absence of mitigation measures

Criteria	Direct Impacts on Bird Species of Conservation Concern	
	Golden-headed Cisticola	Other Birds
Species	Golden-headed Cisticola	<b>18</b> other bird species of conservation importance (not including Golden-headed

Criteria	Direct Impacts on Bird Species of Conservation Concern	
	Golden-headed Cisticola	Other Birds
		Cisticola) occur within the Project boundary (not all of these will breed in Hong Kong)
Habitat Quality	Highest numbers are recorded from the upland Grassland slopes of Low-moderate ecological value	Habitat diversity within the Project boundary is Low
Size/Abundance	Recorded on most surveys with a maximum number of 16 recorded. Breeding was confirmed in the Project boundary	A moderate diversity of species but generally in low abundances. Many of these species are common and widespread in Hong Kong (e.g. Black Kite) or recorded as occasional migrants (e.g. Chestnut-eared Bunting)
Duration	Loss of habitat will be permanent. Disturbance impacts generally restricted to the construction phase. Disturbance during operational phase would be negligible	Loss of habitat will be permanent
Reversibility	Habitat loss will be irreversible.	Habitat loss will be irreversible
Magnitude	Loss of potential breeding/foraging habitat in home range would be of Low magnitude	Loss of habitat to low abundance but moderate diversity of bird species of conservation concern would be of Low magnitude
Impact Severity	Habitat loss of <b>Low to Moderate</b> significance	Loss of potential breeding habitats in development area is <b>Very low to Low</b>

### **Direct Impacts on Butterfly Species of Conservation Concern**

**9.6.3.37** Several species of butterfly of conservation concern recorded in the wider assessment area, and four species (Great Swift, Tamil Grass Dart, Small Three-ring and Small Grass Yellow; Common Four-ring was recorded in the previous study) recorded from within or close to the development area within and in the vicinity of the Project boundary may be subjected to direct impacts through habitat loss. These species are grassland specialists, or have grasses as their larval foodplants, and are listed as being of Local Concern (Fellowes *et al.* 2002) and are either Rare or Very Rare in Hong Kong (AFCD, 2014). Indirect impacts to Pigmy Scrub Hopper and Lesser Band Dart are covered in later sections.

**9.6.3.38** Other species of butterfly of conservation concern, whilst listed as being of Local Concern or Rare are either a significant distance away from the proposed development (Plain Hedge Blue) to be directly or indirectly impacted or are migratory in nature and are occasional visitors to the site (Danaid Egg-fly and Red-breasted Jezebel were observed in flight passing over the site). Assessment is provided in **Table 9.37** below.

Kong population, Golden-headed Cisticola, and impacts for this are assessed separately to those other species.

**9.6.4.15** Assessment is provided in **Table 9.42** below.

**Table 9.42** Potential ecological impacts to birds of conservation importance within the Project boundary in the absence of mitigation measures.

Criteria	Indirect impacts on Birds of Conservation Importance during the construction phase
	Golden-headed Cisticola
Habitat Quality	Highest numbers are recorded from the upland grassland slopes of Low-moderate ecological value
Size/Abundance	Recorded on most surveys with a maximum number of 16 recorded. Breeding was confirmed within the Project boundary
Duration	Temporary: during the construction phase Phasing of the Project during construction will help to reduce overall impact
Reversibility	Reversible
Magnitude	Magnitude of disturbance impacts during construction phase would be Low-moderate significance This species is considered to be reasonably tolerant of human disturbance (Weston <i>et al.</i> 2012)
<b>Overall Impact Severity</b>	Disturbance impacts of <b>Low-moderate</b> significance as there may be local impacts to nesting birds

**9.6.4.16** Other bird species of conservation importance (excluding Golden-headed Cisticola) recorded in the assessment area can be seen in **Table 9.3**. Only 18 other bird species of conservation importance (excluding Golden-headed Cisticola) occur within the Project boundary. These species were recorded irregularly in small numbers, often during periods of migration. It is not considered that the development would have a significant impact on the population of any of these species.

**9.6.4.17** It is considered that any indirect impacts to the flightlines of breeding ardeids will be negligible given the location of proposed works in relation to flightlines and suitable foraging habitats.

**9.6.4.18** Assessment is provided in **Table 9.43** below.

**Table 9.43** Potential ecological impacts on other birds of conservation importance (excluding Golden-headed Cisticola) within the Project boundary in the absence of mitigation measures

Criteria	Indirect impacts on Birds of Conservation Importance (excluding Golden-headed Cisticola) during the construction phase
Habitat Quality	Habitat diversity through the development area of the Project boundary is low
Species	46 species of conservation importance (excluding Golden-headed Cisticola) recorded in the assessment area. 18 bird species of conservation importance (excluding Golden-headed Cisticola) occur within the Project boundary
Size/Abundance	A moderate diversity of species but generally low levels of

Criteria	Indirect impacts on Birds of Conservation Importance (excluding Golden-headed Cisticola) during the construction phase
	abundances Many of these species are common and widespread in Hong Kong (e.g. Black Kite) or recorded as occasional migrants (e.g. Chestnut-eared Bunting)
Duration	Temporary
Reversibility	Reversible
Magnitude	Loss of potential habitats in development area is low Disturbance impacts would be low
<b>Overall Impact Severity</b>	<b>Low significance</b>

**9.6.4.19** It is considered that any indirect impacts to the flightlines of breeding ardeids will be negligible given the location of proposed works in relation to flightlines and suitable foraging habitats.

#### **Indirect Impacts on Reptile Species of Conservation Importance**

**9.6.4.20** Common Rat Snake, Many-banded Krait and Chinese Cobra would be subject to human disturbance during both construction and operational phase, though retention of areas through much of the Project Site boundary and landscaped habitats would provide continued foraging opportunities for this species. Whilst not recorded from the development area of the Project Site boundary, these species is likely to have large home range and could occur within the boundaries of the proposed columbarium and association infrastructure.

**9.6.4.21** Assessment is provided in **Table 9.44** below.

**Table 9.44** Potential ecological impacts to reptiles of conservation importance in the absence of mitigation measures

Criteria	Indirect impacts on Reptile Species of Conservation Importance
Habitat Quality	Upland Grassland and Pond habitats Moderate ecological value. Agricultural land is of low ecological value.
Species	Common Rat Snake, Many-banded Krait and Chinese Cobra
Size/Abundance	The habitats within the Project boundary proposed for development are primarily upland grassland and plantation. Home ranges are likely to be large and the habitat within the Project boundary would only form part of this range
Duration	Temporary: disturbance impacts would be only at the construction. Habitats suitable for this species would remain within the development
Reversibility	Reversible
Magnitude	Low as period of vulnerability will be short and localised
Impact Severity	<b>Low</b> as unlikely to impact overall population

#### **Indirect Impacts on Amphibians Species of Conservation Importance**

**9.6.4.22** The two species of amphibian of conservation importance recorded in the wider assessment area are Chinese Bullfrog and Two-striped Grass Frog. Generally the drier hillside habitats within the development area of

<b>Criteria</b>	<b>Indirect impacts from Street Lighting during the operational phase</b>
Severity	considered to be <b>Low to Moderate</b>

**Table 9.53** Potential indirect ecological impacts to Mammal Species of Conservation Importance in the absence of mitigation measures

<b>Criteria</b>	<b>Indirect impacts to Mammal Species of Conservation Importance during the operational phase</b>
Habitat Quality	The mosaic of habitats within and in the vicinity of the Project boundary and the relative lack of human disturbance provide suitable habitats for a range of terrestrial mammals
Species	Thirteen species of mammals recorded including four of conservation importance (Himalayan Leaf-nosed Bat, East Asian Porcupine, Red Muntjac, Leopard Cat)
Size/Abundance	Mammals are generally a low density group. The assemblage of mammals within the Project boundary is moderately diverse
Duration	Permanent, though individual disturbance events are likely to be short-lived except at certain times (e.g. festivals).
Reversibility	Practically-speaking irreversible
Magnitude	Low since most mammals are much less active during the day when temporary disturbance by visiting humans is most likely to occur
<b>Overall Impact Severity</b>	<b>Low</b> significance at operational phase

**Table 9.54** Potential indirect ecological impacts on Bird Species of Conservation Importance in the absence of mitigation measures

<b>Criteria</b>	<b>Indirect impacts on Bird Species of Conservation Importance during the operational phase</b>	
	<b>Golden-headed Cisticola</b>	<b>Other bird species</b>
Species	Golden-headed Cisticola	46 other species of conservation importance within the assessment area
Habitat Quality	Highest numbers are recorded from the upland grassland slopes of Low-moderate ecological value	Varies
Size/Abundance	Recorded on most surveys with a maximum count of 16. Breeding was confirmed within the Project boundary	Moderate diversity of species but generally in low abundance. Many of these species are common and widespread in Hong Kong or recorded as occasional migrants
Duration	Permanent, though individual disturbance events are likely to be short-lived except at certain times (e.g. festivals)	Permanent, though individual disturbance events are likely to be short-lived except at certain times (e.g. festivals)
Reversibility	Practically-speaking irreversible.	Practically-speaking irreversible.
Magnitude	Low given that small passerines are reasonably tolerant of disturbance (pers. obs., Blumstein 2006, Weston <i>et al.</i> 2012) and the	Low given that numbers present are very low and the area of habitat impacted is predicted to be relatively small



Criteria	Indirect impacts on Bird Species of Conservation Importance during the operational phase	
	Golden-headed Cisticola	Other bird species
	area of habitat impacted is predicted to be relatively small	
<b>Overall Impact Severity</b>	Disturbance impacts of <b>Low</b> significance	Disturbance impacts of <b>Very Low to Low</b> significance

**Table 9.55** Potential indirect ecological impacts on Reptile Species of Conservation Importance in the absence of mitigation measures

Criteria	Indirect impacts on Reptile Species of Conservation Importance during the operational phase
Habitat Quality	Habitats within the developable area of the Project boundary will be of limited suitability for reptiles
Species	Common Rat Snake, Many-banded Krait and Chinese Cobra have been recorded
Size/Abundance	All snake species recorded in very low densities
Duration	Permanent
Reversibility	Reversible with resources
Magnitude	Low as period of vulnerability will be short and localized
<b>Impact Severity</b>	<b>Low</b>

**Table 9.56** Potential indirect ecological impacts on Amphibian Species of Conservation Importance in the absence of mitigation measures

Criteria	Indirect impacts on Amphibian Species of Conservation Importance during the operational phase
Habitat Quality	Habitats within the developable area of the Project boundary are of limited suitability for amphibians However, 'downstream' breeding habitats which form a wetland mosaic are of higher ecological value
Species	Two-striped Grass Frog is of Local Concern though is locally common
Size/Abundance	Two-striped Grass Frog occurs in high numbers within the wetland mosaic in the lowland areas within the Project boundary / assessment areas
Duration	Permanent
Reversibility	Reversible with resources
Magnitude	Low as period of vulnerability will be short and localized, and organisms are disturbance-tolerant
<b>Impact Severity</b>	<b>Low</b>

**Table 9.57** Potential indirect ecological impacts on Dragonfly Species of Conservation Importance in the absence of mitigation measures

Criteria	Indirect impact on Dragonfly Species of Conservation Importance during the operational phase
Habitat Quality	Habitats within the developable area of the Project boundary are of limited suitability for dragonflies However, the wet woodland provides suitable breeding habitats for

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