



THE STATE OF HONG KONG BIODIVERSITY

2025



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ABBREVIATIONS

AFCD	Agriculture, Fisheries and Conservation Department	NE	Not Evaluated in Hong Kong species status assessment
CR	Critically Endangered in the IUCN Red List of Threatened Species	OWLHK	Outdoor Wildlife Learning Hong Kong
DD	Data Deficient in Hong Kong species status assessment	OZP	Outline Zoning Plan
DPA	Development Permission Area	PlanD	Planning Department
DSD	Drainage Services Department	TPB	Town Planning Board
EEB	Environment and Ecology Bureau	WWF	World Wide Fund for Nature
EN	Endangered in the IUCN Red List of Threatened Species		
EX	Extinct in Hong Kong under Hong Kong species status assessment		
FEHD	Food and Environmental Hygiene Department		
HAD	Home Affairs Department		
HKBWS	The Hong Kong Bird Watching Society		
HKU	The University of Hong Kong		
HR	High Risk of Extinction in Hong Kong species status assessment		
IUCN	International Union for Conservation of Nature		
KFBG	Kadoorie Farm and Botanic Garden		
LandsD	Lands Department		
LR	Low Risk of Extinction in Hong Kong species status assessment		
LU	Lingnan University		
MR	Moderate Risk of Extinction in Hong Kong species status assessment		
NA	Not Applicable in Hong Kong species status assessment		

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Editors: Dr. Carmen K.M. OR & Dr. Bosco P.L. CHAN

Species status assessment (assessors, contributors and reviewers)

Mammals (medium to large non-volant mammals):

Dr. Bosco P.L. CHAN (WWF-Hong Kong), Dr. Michael LAU,
Mr. Jianhuan YANG (KFBG), Dr. Gary ADES (KFBG)

Birds: Mr. Tom LI (HKBWS), Mr. Anson TSE (HKBWS), Mr. YU Yat Tung (HKBWS)

Herpetofauna: Dr. Michael LAU, Dr. SUNG Yik Hei (University of Suffolk),
Mr. Jianhuan YANG (KFBG), Dr. Gary ADES (KFBG), Mr. Paul CROW (KFBG)

Freshwater fishes: Mr. Jeffery C.F. CHAN (HKU), Dr. Alphonse Hin Fat TSANG (LU),
Mr. Tommy HUI (WWF-Hong Kong)

Butterflies: Mr. LO Yik Fui Philip (KFBG), Mr. PUN Sui Fai (Environmental Association),
Dr. CHENG Luk Ki (Green Power), Dr. LEE Ping Chung (Hong Kong Butterfly Association),
Mr. LO Wing Fung (Green Power), Mr. SIN Kar Wah Matthew (Green Power)

Dragonflies: Dr. Ken SO (OWLHK), Mr. Kelvin WU (Hong Kong Entomological Society),
Mr. Bergman NG, Mr. Keith WILSON (World Dragonfly Association), Mr. Graham REELS,
Mr. Mahler KA

Freshwater crustaceans: Mr. Jeffery C.F. CHAN (HKU),
Mr. Tommy HUI (WWF-Hong Kong)

Species status assessment compilation

Mr. Ringo CHUNG, Ms. Meeco LEUNG, Dr. Carmen K.M. OR & Mr. Orca YU from
WWF-Hong Kong

Report contributors

Mr. Tommy HUI (WWF-Hong Kong), Dr. Michael LAU, Mr. Tobi LAU (WWF-Hong Kong),
Ms. Bonnie LEUNG (WWF-Hong Kong), Mr. LO Yik Fui Philip (KFBG),
Dr. Ken SO (OWLHK), Dr. SUNG Yik Hei (University of Suffolk), Mr. YU Yat Tung (HKBWS)

Report reviewers

Prof. Timothy BONEBRAKE (HKU), Prof. David DUDGEON (HKU), Dr. Billy HAU (HKU),
Prof. Anthony LAU (LU)

Design: Gina LEE

Illustration: Dr. Carmen K.M. OR

Photography: Dr. Bosco P.L. CHAN, Mr. Tommy HUI & Mr. Orca YU from WWF-Hong Kong

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About WWF:

WWF is a leading global conservation organisation, with a network active in more than 100 countries. WWF's mission is to build a future in which humans live in harmony with nature. WWF-Hong Kong has been working since 1981 to deliver solutions for a living planet through conservation, footprint and education programmes, with the aim of transforming Hong Kong into Asia's most sustainable city. For more information, please visit: wwf.org.hk

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EXECUTIVE SUMMARY

The Hong Kong Special Administration Region is a ca. 1,100 km² coastal city at the mouth of the busy Zhujiang (Pearl River) Estuary in subtropical China. Having been inhabited for at least 6,000 years, Hong Kong's natural ecosystems have all but degraded, and those that remain today have undergone tremendous changes. Nevertheless, thanks to its geographic location, complex topography, diverse ecosystems, and an extensive Country Park system, the metropolis still supports a remarkably high biodiversity including various globally threatened species. A major caveat, however, is that the system of protected areas is heavily biased towards hilly terrain and excludes much of the rural lowlands and also many remote valleys. These areas are mostly privately-owned and are subject to threats such as land use change and/or habitat degradation, resulting in a progressive decline of certain habitat types and their dependent wildlife populations.

Local ecologists, green groups and the conservation authorities made attempts in the early years of this century to flag up species of conservation concern and identify local biodiversity hotspots (Fellowes et al. 2002; Yip 2002; AFCD 2004), but their pioneering works need to be updated to include new data gathered from

academic research, monitoring and citizen science and to reflect changes in the environment. Over the past 20 years or so, urban expansion and vegetation succession have affected conditions at various hotspots and led to dramatic changes in the conservation status of many species. Furthermore, Hong Kong's fragile natural assets have been subjected to a new wave of threats in recent years, with the announcement of aggressive local and regional development plans such as the Northern Metropolis Development Strategy, Lantau Tomorrow Vision, and Greater Bay Area Strategic Plan.

In order to address these issues and to help safeguard Hong Kong's faunal biodiversity, WWF-Hong Kong initiated a study and formed an expert group comprised of local ecological and/or taxonomic experts. Based on a set of criteria modified from the IUCN Red List of Threatened Species and using updated knowledge on the status and distribution of a suite of species in Hong Kong, the expert group assessed the risk of local extinction for selected faunal groups and identified biodiversity hotspots, prioritising those which have high habitat quality, a high concentration of threatened species and/or are in urgent need of conservation intervention. An overview of

species-level assessments from the studied faunal groups, as well as a map of terrestrial biodiversity hotspots identified outside statutory protected-area system of Hong Kong are included in this report. This report and the full assessment list of terrestrial and aquatic species are also available online (wwf.org.hk/biodiversity). Our aim with this report and the hotspot map is to inform strategic conservation actions, elicit interest in the conservation of overlooked fauna and their habitats, and help the Government to enhance relevant policies, laws and regulations.

In total, this report considered 1,197 species and assessed 886 species of 8 major faunal groups (mammals, birds, reptiles, amphibians, freshwater fishes, butterflies, dragonflies and freshwater crustaceans). Readers should note that the above groups represent only a portion of Hong Kong's rich biodiversity, and species-rich groups such as bats, ants and beetles were not assessed. Nevertheless, these 8 major faunal groups are widely considered in the scientific community to be good indicators when assessing the health of an ecosystem. Our analysis reveals an alarming figure – 232 out of the 886 assessed species (over 25%) are now facing

a moderate or high risk of local extinction. Animals which are dependent on lowland habitats, such as wetland birds and freshwater fishes, are particularly at risk. This study highlights that the protection, restoration and sustainable management of lowland habitats are of the utmost importance and urgency for conservation of Hong Kong's biodiversity.

This report is intended to serve as a major reference for Government officials, researchers, environmental consultants, green groups and other interested parties working in various aspects such as policy formation, strategic planning, environmental impact assessment, targeted conservation research and monitoring, and implementation of specific conservation actions to protect at-risk species. We also encourage interested citizens and amateur naturalists to report observations of at-risk species, as well as threats such as poaching and habitat destruction, to relevant authorities and experts, and volunteer for conservation efforts of at-risk species. Together, we can all contribute to bringing at-risk species back from the brink of local extinction.

摘要

中國香港特別行政區是一座位處亞熱帶的沿海城市，坐落於繁忙的珠江口，面積約1,100平方公里。根據考古證據，香港的人類活動可追溯至最少6,000年前。隨歲月流轉，物換星移，香港原有的自然生態系統都經歷過人為破壞，經已大幅度退化。儘管香港如今是一個人口密集的國際大都會，卻因為其地理位置、複雜的地形、多樣化的生態系統，以及廣闊的郊野公園系統，而擁有高得教人驚訝的生物多樣性，甚至有不少全球瀕危物種以香港為家。然而，現時香港的陸地保護區系統過度側重於山嶺地帶，忽略了低地生境和偏遠山谷。這些大多為私人擁有的地點亦因此面臨土地用途改變、生境退化等威脅，導致部分生境及賴以為生的野生動物逐漸減少。

不少本地生態學家、保育機構和相關政府部門亦充分意識到這令人擔憂的趨勢，因此曾開展研究識別出香港境內有保育需要的物種及生態熱點（Fellowes 等人 2002; Yip 2002; 漁農自然護理署 2004）。但隨著近年學術研究、科學監測和公民科學活動為我們帶來最新的資料數據，當年這些具開創性意義的研究成果已變得不合時宜。另一方面，過去二十年來，持續的都市化發展和植被演替，使不少物種和生態熱點的保育狀況出現明顯惡化。隨著政府近期宣布一系列本地及區域性的龐大發展計劃，如北部都會區發展策略、明日大嶼願景和粵港澳大灣區發展規劃，這些已經十分脆弱的自然資源正面臨新一波威脅。

有鑑於此，世界自然基金會香港分會開展是次研究，推動香港生物多樣性的保育。首先，我們成立了一個由本地多位生態學和分類學專家組成的專家小組，參考世界自然保護聯盟 (IUCN) 瀕危物種紅色名錄的評估方法並加以改良，制訂出一套適用於香港的評估標準，並基於被評估物種的現狀和最新分布，分析這些物種的本地滅絕風險。小組其後以生境是否優良、受威脅

物種的多寡、熱點是否急需保育等準則，識別出香港一系列法定保護地以外的生物多樣性熱點並製成地圖。本報告包含了被評估動物類群的受威脅情況，以及陸地生物多樣性熱點地圖。報告及完整的物種評級列表可從網上下載 (wwf.org.hk/biodiversity)。我們希望通過報告及地圖的出版，為香港生態保育提供具指導性的資訊，推動被忽視物種及其生境的保育，並協助政府完善相關政策、法律與規例。

本報告共評估了8個動物類群（包括哺乳類、鳥類、爬行類、兩棲類、淡水魚類、蝴蝶、蜻蜓和淡水甲殼類），1,197個物種，從中篩選出886種符合評估標準的物種進行了保育評級。上述類群雖然種類繁多，但僅是香港豐富生物多樣性的冰山一角，許多物種豐富的類群如蝙蝠、螞蟥和甲蟲等未被納入是次研究。然而，是次研究針對的8大類群均是科學界常用的環境健康指標動物，足以有效反映香港的生態系統健康狀況。研究結果揭示了令人擔憂的趨勢：超過25%被評級的物種（886種中的232種）正面臨中至高的本地滅絕危機，特別是依賴低地生境的類群，例如濕地鳥類和淡水魚類，正面臨最大的威脅。是次研究凸顯香港的生物多樣性持續面臨壓力，保護、修復和可持續管理低地生境，對保育本地生物多樣性至關重要，而且迫在眉睫。

本報告旨在為政府官員、研究人員、環境顧問、環保團體等持份者提供重要參考資料，協助進行政策擬定、發展策略、環境影響評估、開展針對性的保育研究和監測、以及實施具針對性措施以保育本地受威脅物種。我們也鼓勵有志參與保育的市民和自然愛好者，可以向相關部門、機構和專家提供珍稀物種的觀察紀錄，並積極投入保育受威脅物種的義工活動。讓我們攜手合作，力挽狂瀾，拯救瀕臨滅絕邊緣的本地物種。

INTRODUCTION

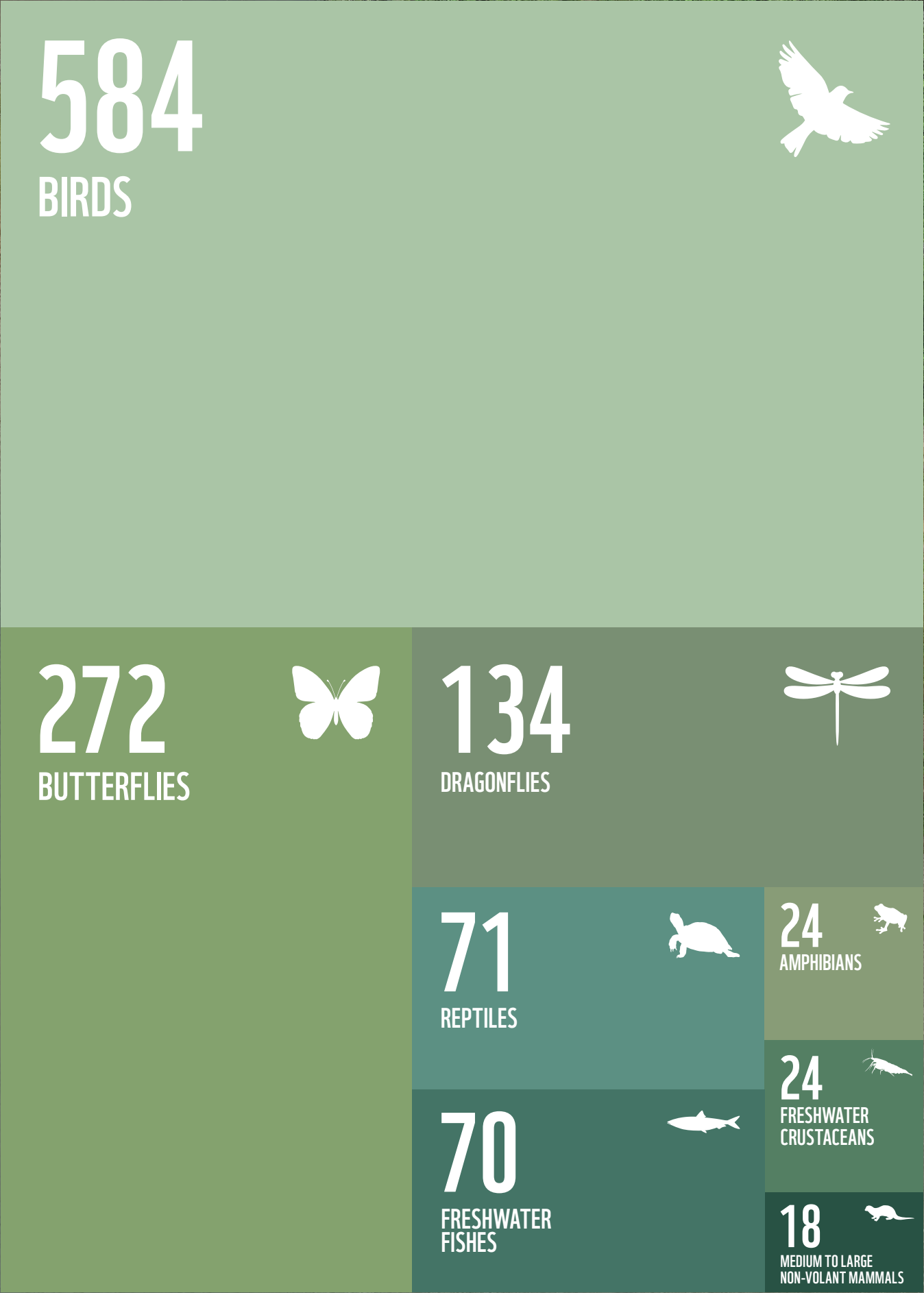
Despite Hong Kong’s small landmass and reputation as a bustling metropolis, it supports a rich biodiversity as a result of its geographical location, complex topography, diverse habitat types and extensive network of terrestrial protected areas in the form of Country Parks, Special Areas and Restricted Areas. Among the documented non-marine fauna are 18 species of medium to large non-volant mammals, 584 birds, 71 reptiles, 24 amphibians, 70 freshwater fishes, 272 butterflies, 134 dragonflies and 24 freshwater crustaceans. Some of these local species, such as the Chinese Pangolin (*Manis pentadactyla*), Chinese Three-banded Box Turtle (*Cuora trifasciata*) and Big-headed Turtle (*Platysternon megacephalum*), are critically endangered globally and their Hong Kong populations are of great importance.

As one of the most densely populated areas in the world, Hong Kong faces significant challenges in conserving its biodiversity. Human activities have had a detrimental impact on local wildlife, leading to species decline and even local extinctions. The recent announcement of the Northern Metropolis Development Strategy and other mega development plans further threaten the already vulnerable wildlife populations. It is crucial to understand the current conservation status of native species and their habitats, so that we can prevent further biodiversity loss by prioritising conservation efforts, raising awareness

among landowners and decision-makers, and securing funding and policy support for conservation initiatives.

Local academics have sporadically assessed the status of certain species or faunal groups in recent years, an example being ants (Morgan 2019), but the last comprehensive species status assessment and biodiversity hotspot map for Hong Kong were produced two decades ago. To bridge the gap, WWF-Hong Kong initiated the current study and invited 24 local experts to assess the conservation status of 8 major and representative faunal groups (mammals, birds, reptiles, amphibians, freshwater fishes, butterflies, dragonflies and freshwater crustaceans). Readers should be aware the assessed groups are only a portion of Hong Kong’s rich biodiversity, and species-rich groups such as bats, ants and beetles are not included. Nonetheless, the 8 assessed groups have received relatively sustained and territory-wide survey efforts to allow confident assessment and be considered good indicators of the state of local terrestrial and freshwater biodiversity. The results are presented in this report, with the aim of highlighting wildlife species most at risk in Hong Kong, identifying unprotected biodiversity hotspots and recommending priority conservation actions in an attempt to reverse the trend.

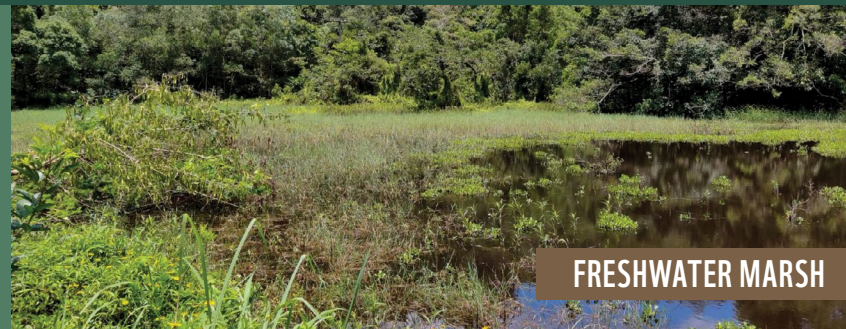
Number of Documented Species in Selected Faunal Groups of Hong Kong



MAJOR HABITAT TYPES IN HONG KONG



REEDBED



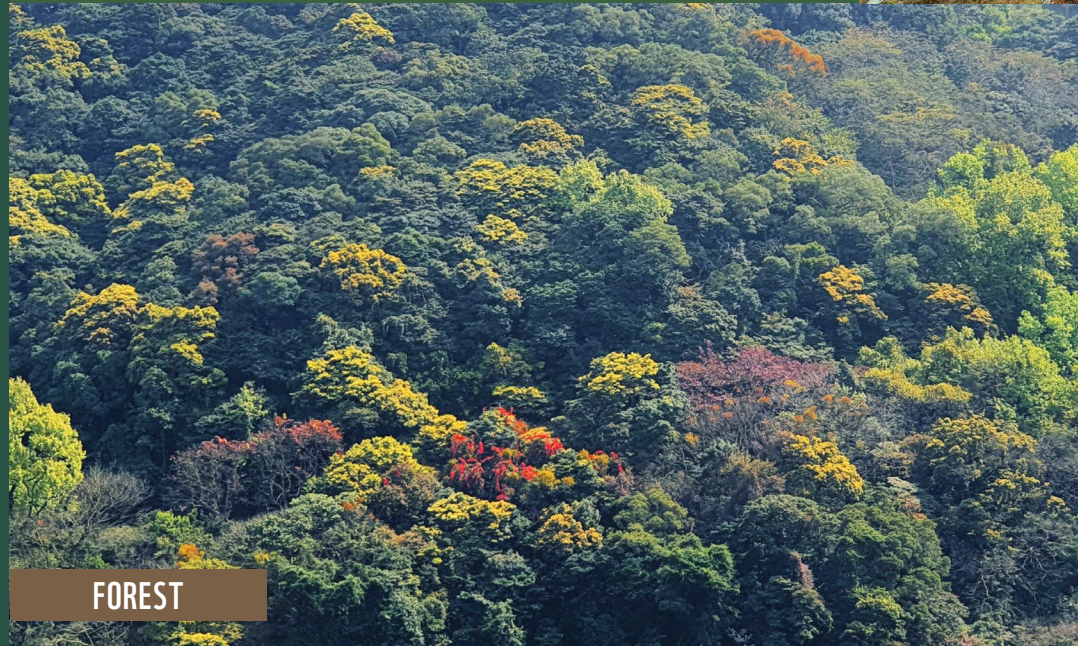
FRESHWATER MARSH



FARMLAND



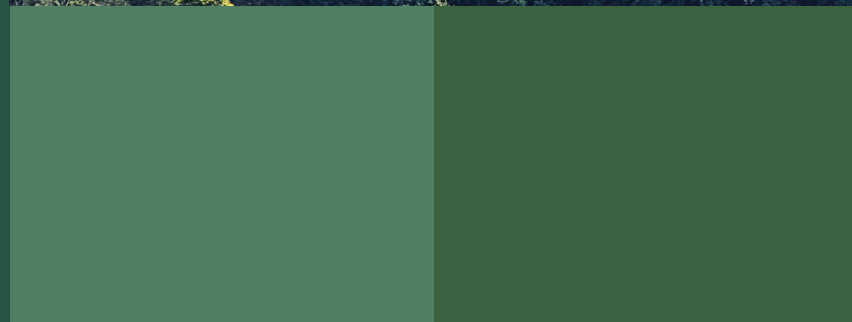
WATERCOURSE



FOREST



FISHPOND/GEI WAI



MANGROVE



MUDFLAT



GRASSLAND-SHRUBLAND



URBAN

HONG KONG SPECIES STATUS ASSESSMENT

Hong Kong is a Special Administrative Region of China and geographically connected to Guangdong Province. Hence, the Hong Kong species status assessments outlined below are made with reference to the Guidelines for Application of IUCN Red List Criteria at Regional and National levels: Version 4.0 (IUCN 2012) with modifications adapted to the local context (Table 1). The set of quantitative assessment criteria for each species relates to population size and trend, geographic range and genetic pollution risk. Animals are classified into 6 categories, with those in the High Risk (HR) and Moderate Risk (MR) categories considered at risk of local extinction. After the initial assessment process,

a further adjustment of species status was made based on the extent of protected habitat and potential interactions with population(s) outside Hong Kong (Table 2). The term “uplisting” refers to an increased extinction risk and “downlisting” to a reduced extinction risk. Uplisted or downlisted species are marked with asterisks, with a single asterisk (*) denoting one step of uplisting or downlisting from initial assessment (i.e. LR to MR, MR to HR, HR to MR, MR to LR) and two asterisks (**) indicating two steps of status adjustment (i.e. HR to LR and vice versa). For migratory birds, breeding and non-breeding (“visiting”) populations are assessed separately if populations are distinguishable.

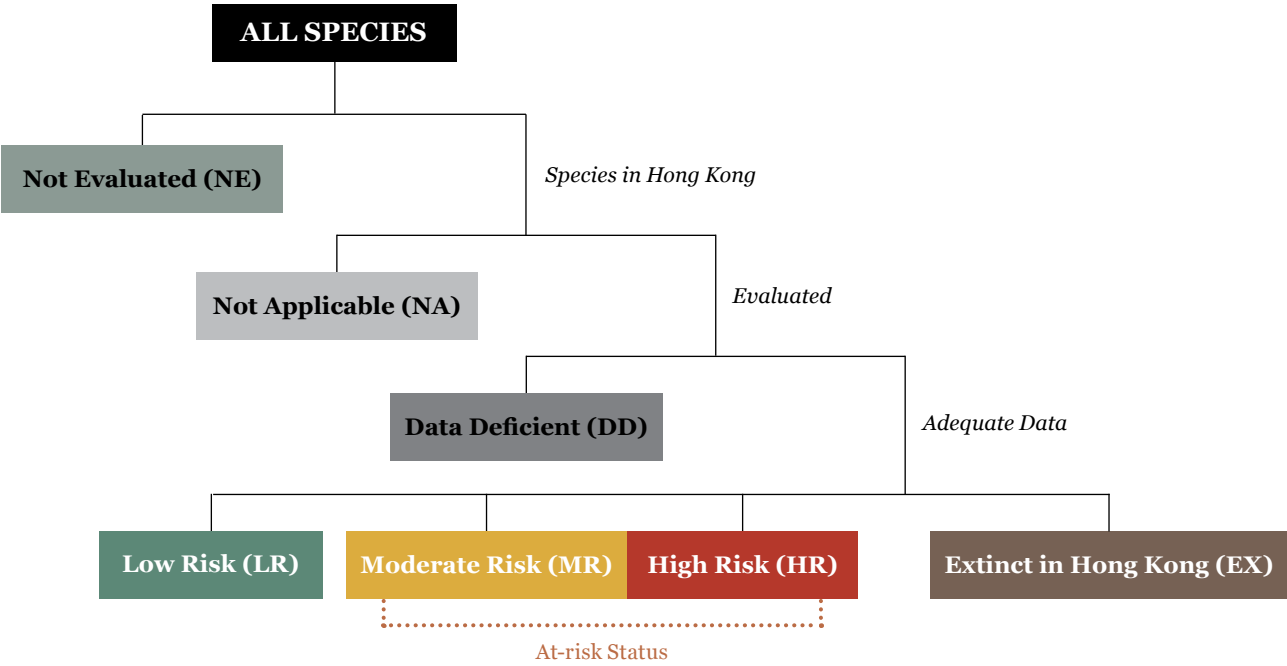


Table 1. Hong Kong Species Status Assessment Criteria

CRITERIA	DESCRIPTION	STATUS		
		High Risk (HR)	Moderate Risk (MR)	Low Risk (LR)
1. Population size reduction	Decline rate suspected, inferred, estimated or observed over three generations or 10 years, whichever is longer	≥50%	≥30%	<30%
2. Small population size and decline	Number of mature individuals, including those in subpopulations, of which the population is suspected, inferred, estimated or observed to be declining	Total: <2,500 Subpopulation: ≤250	Total: <10,000 Subpopulation: ≤1,000	Total: > 10,000 Subpopulation: >1,000
3. Very small population	Number of mature individuals	<250	<1,000	≥1,000
4. Restricted distribution	a. Number of locations of a species that is suspected, inferred, estimated or observed to be declining in population size	1-5	6-10	>10
	b. Number of locations of a species with a plausible future threat that could drive it to HR in a very short time (only applicable to MR species)	-	1-5	-
5. Hybridisation risk	Risk of inter- and intraspecific genetic pollution of a natural (sub)population due to human-mediated action (such as deliberate introduction), based on the extent to which a species' local range is invaded by an introduced population with a reasonable chance of hybridisation	≥50%	≥30%	<30%

Table 2. Hong Kong Species Status Assessment Criteria for Uplisting or Downlisting

CRITERIA	DESCRIPTION	STATUS		
		High Risk (HR)	Moderate Risk (MR)	Low Risk (LR)
I. Extent of protected habitat	≤30% of species' local range located within protected areas (i.e. Country Parks, Special Areas or Restricted Areas) and the population is suspected, inferred, estimated or observed to be declining	Uplist from MR	-	-
II. Interaction with populations outside Hong Kong	Breeding population in Hong Kong: there is a significant immigration of likely breeders to Hong Kong which is expected to decline, with Hong Kong functioning as a sink population (i.e. population that cannot sustain itself without immigration from other populations)	Uplist from MR	Uplist from LR	-
	Breeding population in Hong Kong: there is a significant immigration of likely breeders to Hong Kong which is not expected to decline	-	Downlist from HR	Downlist from HR/MR
	Visiting population in Hong Kong: the breeding population outside Hong Kong can/ is likely to rescue the Hong Kong population if it declines, and the condition in and outside Hong Kong is not or is unlikely to be deteriorating	-	Downlist from HR	Downlist from HR/MR

HONG KONG SPECIES STATUS ASSESSMENT

Individual species from the 8 faunal groups (mammals, birds, reptiles, amphibians, freshwater fishes, butterflies, dragonflies, freshwater crustaceans) are eligible for status assessment if they meet the criteria set out below. Unless otherwise indicated, only formally described native species are assessed.

MEDIUM TO LARGE NON-VOLANT MAMMALS

All native terrestrial mammals listed by AFCD (2023) supplemented by Herklots (1934a, 1934b, 1934c, 1951), Hill & Philipps (1981) and Hui et al. (in press). Feral animals, shrews and rodents are excluded, with the exception of Malayan Porcupine (*Hystrix brachyura*) due to its relatively large size. Names and taxonomic classification follow *The IUCN Red List of Threatened Species. Version 2024-1* (IUCN 2024).



BIRDS

Species list, names and taxonomic classification follow the *List of Birds in Hong Kong* published by HKBWS (2024). All species in Category I and IIA of the List are covered, except for the following:

- Non-native species, except globally CR species with a sustained breeding population in Hong Kong which is of conservation importance for the survival of the species.
- Vagrant species and extremely rare visitors, defined here as:
 - Requiring unusual record submission to HKBWS, or
 - Recorded in ≤ 8 years in any 10-year period, or
 - Extralimital in distribution
- Pelagic species such as seabirds, gulls, and terns, with the exception of Black-headed Gull (*Chroicocephalus ridibundus*) and Saunders's Gull (*Saundersilarus saundersi*) which both have sizeable visiting populations to coastal wetlands in Hong Kong.

Only species with evidence of continuous breeding records for at least 10 years are regarded as having breeding populations. Species which do not breed (or do so irregularly) but occur during identifiable migration periods are regarded as having visiting populations. There are also 24 species, such as Black-winged Stilt (*Himantopus himantopus*), which have both breeding and visiting populations.



REPTILES



All native reptiles listed by Karsen et al. (1998), supplemented by Sung et al. (2018) and Yang & Yeung (2024). Sea snakes and sea turtles are not included due to their oceanic habits. Names and taxonomic classification follow *The Reptile Database* (Uetz et al. 2024).

FRESHWATER FISHES

All native inland freshwater fish species listed by Chan et al. (2023), excluding:

- Vagrant and extremely rare species, which are defined as being recorded in ≤ 5 years in any 10-year period
- Species whose known local populations are suspected to be non-native

Names and taxonomic classification follow *Eschmeyer's Catalog of Fishes* (Fricke et al. 2024).



DRAGONFLIES



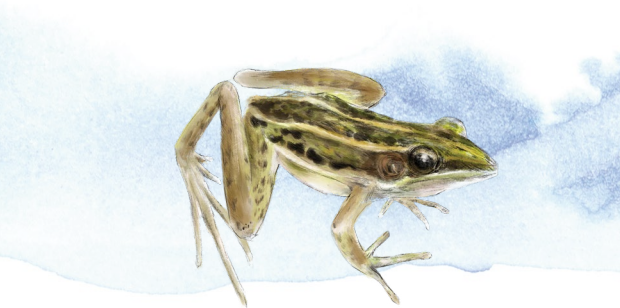
All native species listed by AFCD (2024), excluding:

- Vagrant and extremely rare species, which are defined as:
 - Recorded in ≤ 2 years in any 10-year period, and are not cryptic/elusive/crepuscular, or
 - Extralimital in distribution

Names and taxonomic classification follow *Checklist of Dragonflies of Hong Kong* (AFCD 2024).

AMPHIBIANS

All native amphibians listed by Karsen et al. (1998), supplemented by Jin et al. (2005). Names and taxonomic classification follow the *Amphibian Species of the World: an Online Reference. Version 6.2.* (Frost 2024).



BUTTERFLIES

All native species listed by Lo & Hui (2005), supplemented by Pun (2024), with the following excluded:

- Vagrant and extremely rare species, which are defined as:
 - Recorded in ≤ 5 years in any 10-year period, or
 - Extralimital in distribution
- Species which only occasionally breed under favourable conditions in Hong Kong but do not establish stable populations
- Species without verifiable local specimen or photographic records

Names and taxonomic classification follow *The Checklist of Chinese Butterflies* (Hsu et al. 2017).



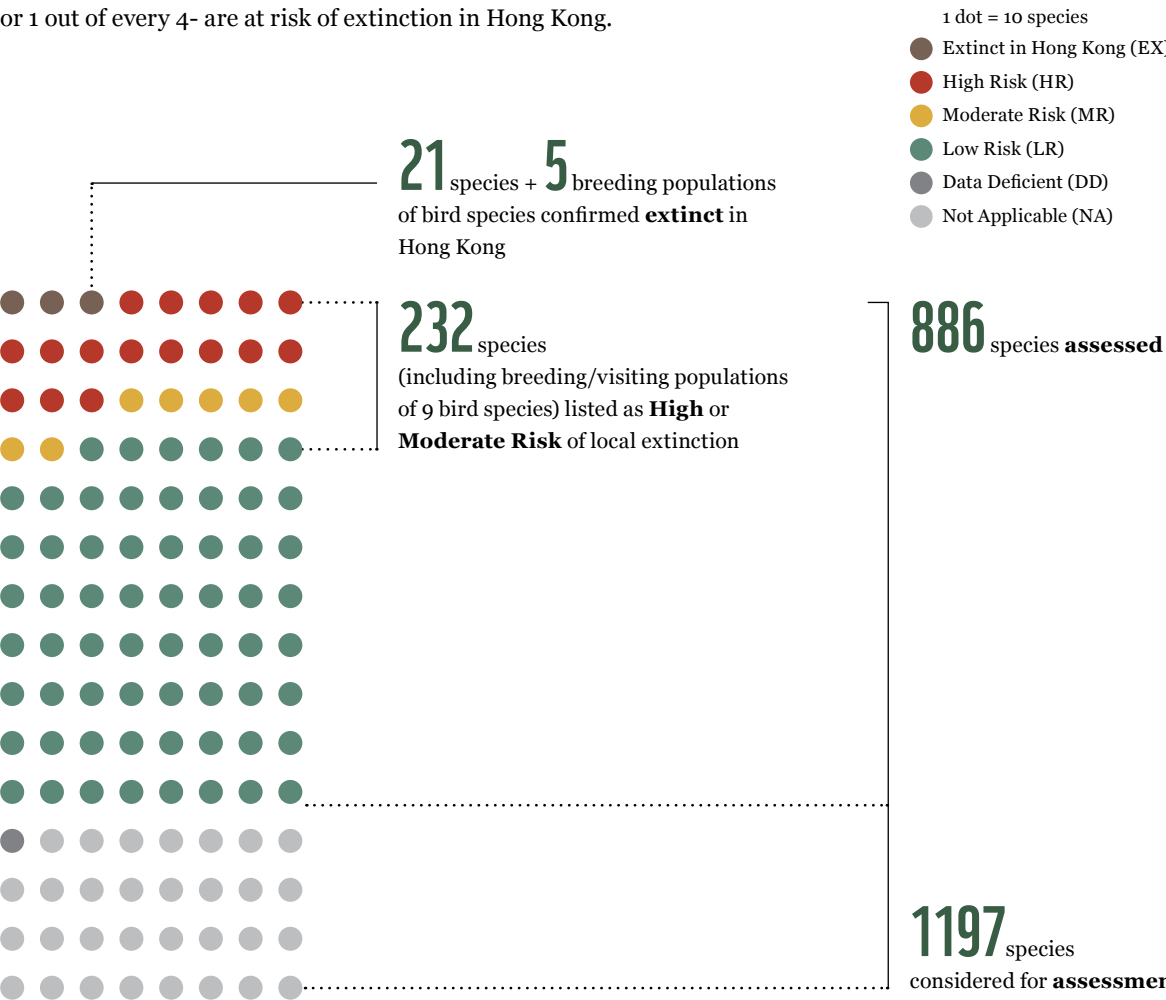
FRESHWATER CRUSTACEANS

All native shrimps and prawns (Lee 1993; Chow et al. 2018, 2022) and crabs (Wong et al. 2024) occurring primarily in local freshwaters. Names and taxonomic classification follow *DecaNet* (DecaNet 2024).



SPECIES HIGHLIGHTS - OVERVIEW

Among the 1,197 species considered on the eligibility of assessment, 886 species were assessed: of these 26%, or 1 out of every 4- are at risk of extinction in Hong Kong.



MEDIUM TO LARGE NON-VOLANT MAMMALS

Medium to large non-volant mammals have proportionally suffered the most from local extinction, with 1 out of every 4 (28%, 5 species) species locally extirpated following centuries of deforestation and rampant hunting throughout the region. Another 22% (4 species) are at risk and require urgent conservation actions (**Table 3**).

EXTINCT IN HONG KONG - 5 SPECIES

Tiger (*Panthera tigris*)

An occasional winter visitor to Hong Kong up to the 1940s, with detailed accounts of tiger encounters, including a fatal attack, reported by early-day media and naturalists (e.g. Herklots 1951).



Leopard (*Panthera pardus*)

A single documented record in Hong Kong, with one trapped and killed in the winter of 1931 at present-day Plover Cove Reservoir (Herklots 1934a).



Red Fox (*Vulpes vulpes*)

Last reported in 1933 when two cubs captured at Mui (Tsz) Lam, either in Ma On Shan or Plover Cove area, were sent to the present-day Hong Kong Zoological and Botanical Gardens (Herklots 1934b).



Large Indian Civet (*Viverra zibetha*)

The last record was in 1934 when one was trapped in the Shing Mun Valley (Herklots 1934c).



Clouded Leopard (*Neofelis nebulosa*)

Two animals were trapped in the Robin's Nest area of northern New Territories in 1948, and reported as 'small tigers' by the press. This record has been overlooked by local researchers until recently (Hui et al., in press).

Dhole (*Cuon alpinus*)

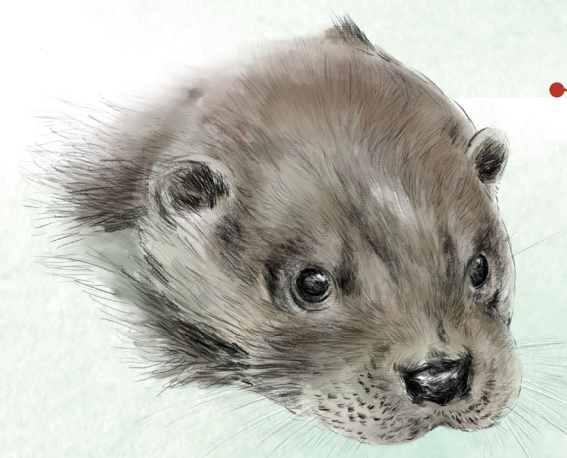
Reportedly roamed the New Territories in small packs of "three or four animals" (Bunbury 1913; Herklots 1951). However, the species has never been unequivocally recorded in Hong Kong, so it has been omitted from the list of locally extinct mammals.



HIGH RISK - 2 SPECIES

Eurasian Otter (*Lutra lutra*)

Formerly widespread along the coast and wetlands of western Hong Kong but population declines began in the 1930s. Largely restricted to Deep Bay wetlands where a very small breeding population remains (Hui & Chan 2023).



Chinese Pangolin (*Manis pentadactyla*)

This globally CR species is thinly distributed throughout Hong Kong and its local range is largely covered by the Country Park system. Poaching is not currently a major threat, but this could change rapidly (AFCD 2019).

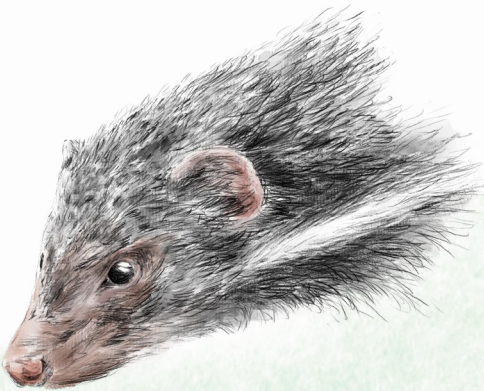


MEDIUM TO LARGE NON-VOLANT MAMMALS

MODERATE RISK - 2 SPECIES

Crab-eating Mongoose (*Urva urva*)

Restricted to low-elevation valleys in the northeastern New Territories (Shek 2006), many of which are Country Park enclaves subject to disturbance and development threats.



Yellow-bellied Weasel (*Mustela kathiah*)

Very few local records; appears to prefer low-elevation hillsides in the northeastern New Territories (Chan et al. 2024), many of which are Country Park enclaves subject to disturbance and development threats.

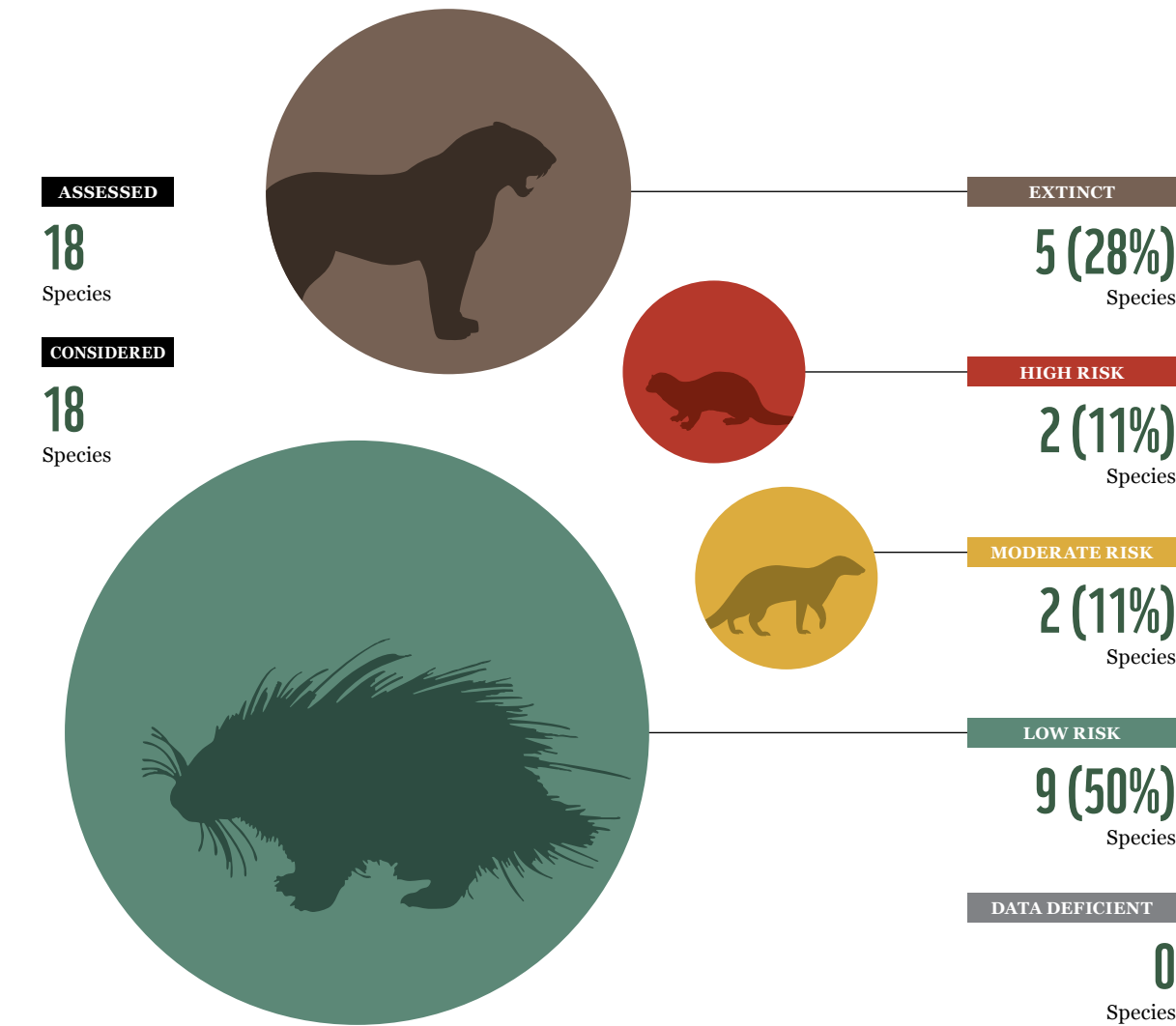


Table 3. Key Habitats and Major Threats to At-risk Mammals

ENGLISH NAME (SCIENTIFIC NAME)	STATUS	HABITAT											THREAT			
		FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS
Eurasian Otter (<i>Lutra lutra</i>)	HR		●	●	●	●		●					●		●	●
Chinese Pangolin (<i>Manis pentadactyla</i>)	HR	●							●				●		●	
Yellow-bellied Weasel (<i>Mustela kathiah</i>)	MR	●											●		●	
Crab-eating Mongoose (<i>Urva urva</i>)	MR	●						●		●			●		●	

BIRDS

Birds are among the most seriously threatened groups, with 50% (116 species) of the visiting species and 1 in every 3 breeding species (29%, 36 species) at risk of local extinction (Table 4).

EXTINCT IN HONG KONG

8 BREEDING POPULATIONS

Pheasant-tailed Jacana (*Hydrophasianus chirurgus*)

This species bred in the Deep Bay area up to the 1970s, but the construction of Fairview Park in the mid-1970s led to the disappearance of the breeding population. Currently, only migrants and non-breeding individuals are observed.



1 VISITING POPULATION

Black-headed Ibis (*Threskiornis melanocephalus*)

Formerly a regular winter visitor in Hong Kong until 1997/1998 and last recorded in 1999. The prolonged absence in Hong Kong coincides with a lack of breeding records from northeastern China, suggesting a regional-scale loss of this species.



HIGH RISK

27 BREEDING POPULATIONS

Bonelli's Eagle (*Aquila fasciata*)

Breeds on sparsely vegetated rocky hilltops. Young birds were regularly seen in Deep Bay wetlands until the mid-2010s, but its numbers and local range have declined to the point where fewer than 10 pairs remain.

Eastern Cattle Egret (*Ardea coromanda*)

Often found in open country alongside feral water buffalo and cattle, but its breeding population has declined by around 70% since 2000, likely due to the disappearance of freshwater marshes and short grassland – its preferred habitats.



78 VISITING POPULATIONS

Black-capped Kingfisher (*Halcyon pileata*)

Once a regular winter visitor to Deep Bay mudflats, it has experienced a significant decline with only a few birds recorded in recent years, mirroring global trends. Despite being common a century ago, this bird no longer breeds in Hong Kong.

Yellow-breasted Bunting (*Emberiza aureola*)

This globally CR species was once abundant in Hong Kong but has declined locally since the 2000s due to over-exploitation and a reduction in rice farming throughout its global range. Local and regional conservation efforts since the mid-2000s have helped stabilise the local visiting population since 2020, but numbers are still low.



BIRDS

MODERATE RISK

9 BREEDING POPULATIONS

Chinese Grassbird (*Graminicola striatus*)

This grassland specialist is restricted to a few grassy hilltops in Hong Kong. Natural vegetation succession is gradually reducing the extent of suitable habitat.



38 VISITING POPULATIONS

Black-faced Spoonbill (*Platalea minor*)

This globally EN species has become an iconic wetland conservation symbol in Hong Kong and the region. Thanks to targeted wetland management efforts, its population has recovered from a few tens of wintering individuals in Hong Kong during the 1990s to over 300 individuals in most years since 2007.



BIRDS (BREEDING+VISITING)

ASSESSED

333

Species

CONSIDERED

584

Species

EXTINCT

9 (3%)

Populations

4 (1%)

Species

HIGH RISK

105 (29%)

Populations

101 (30%)

Species

MODERATE RISK

47 (13%)

Populations

44 (13%)

Species

LOW RISK

195 (55%)

Populations

184 (55%)

Species

DATA DEFICIENT

0

Species



Table 4. Key Habitats and Major Threats to At-risk Birds

			HABITAT													THREAT			
ENGLISH NAME (SCIENTIFIC NAME)	POPULATION (B/V)	STATUS	FOREST	MANGROVE	MUDEFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS		
Common Shelduck (<i>Tadorna tadorna</i>)	V	HR			●									●					
Mandarin Duck (<i>Aix galericulata</i>)	V	HR					●		●					●					
Baikal Teal (<i>Sibirionetta formosa</i>)	V	HR			●		●							●					
Falcated Duck (<i>Mareca falcata</i>)	V	HR			●		●							●					
Indian Spot-billed Duck (<i>Anas poecilorhyncha</i>)	B	HR					●	●						●					
Chinese Spot-billed Duck (<i>Anas zonorhyncha</i>)	V	HR					●	●						●					
Northern Pintail (<i>Anas acuta</i>)	V	HR			●		●	●	●					●					
Eurasian Teal (<i>Anas crecca</i>)	V	HR*			●		●	●	●					●					
Common Pochard (<i>Aythya ferina</i>)	V	HR			●		●							●				●	
Baer's Pochard (<i>Aythya baeri</i>)	V	HR			●		●							●				●	
Ferruginous Duck (<i>Aythya nyroca</i>)	V	HR					●							●					
Red-breasted Merganser (<i>Mergus serrator</i>)	V	HR			●		●							●					
Japanese Quail (<i>Coturnix japonica</i>)	V	HR									●			●					●
Pacific Swift (<i>Apus pacificus</i>)	B	HR											●	●					
Pacific Swift (<i>Apus pacificus</i>)	V	HR									●			●					
House Swift (<i>Apus nipalensis</i>)	B	HR									●	●		●					
Indian Cuckoo (<i>Cuculus micropterus</i>)	B	HR								●	●			●					
Oriental Turtle Dove (<i>Streptopelia orientalis</i>)	V	HR									●			●					
Slaty-breasted Rail (<i>Lewinia striata</i>)	B	HR			●		●	●			●			●					
Eurasian Coot (<i>Fulica atra</i>)	V	HR					●	●	●					●					
Ruddy-breasted Crake (<i>Zapornia fusca</i>)	V	HR						●			●			●					
Little Ringed Plover (<i>Charadrius dubius</i>)	B	HR					●	●	●		●			●					
Northern Lapwing (<i>Vanellus vanellus</i>)	V	HR					●	●			●			●					
Grey-headed Lapwing (<i>Vanellus cinereus</i>)	V	HR					●	●	●		●			●					
Oriental Plover (<i>Anarhynchus veredus</i>)	V	HR					●	●			●			●					
Pheasant-tailed Jacana (<i>Hydrophasianus chirurgus</i>)	V	HR					●	●			●			●					

● Cliff

Table 4. Key Habitats and Major Threats to At-risk Birds (continued)

			HABITAT													THREAT			
ENGLISH NAME (SCIENTIFIC NAME)	POPULATION (B/V)	STATUS	FOREST	MANGROVE	MUDEFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS		
Little Curlew (<i>Numenius minutus</i>)	V	HR			●		●	●			●			●					
Far Eastern Curlew (<i>Numenius madagascariensis</i>)	V	HR			●		●							●				●	
Bar-tailed Godwit (<i>Limosa lapponica</i>)	V	HR			●		●							●				●	
Common Snipe (<i>Gallinago gallinago</i>)	V	HR			●		●	●	●		●			●					
Terek Sandpiper (<i>Xenus cinereus</i>)	V	HR			●		●							●				●	
Green Sandpiper (<i>Tringa ochropus</i>)	V	HR					●	●			●			●					
Marsh Sandpiper (<i>Tringa stagnatilis</i>)	V	HR			●		●	●			●			●					
Wood Sandpiper (<i>Tringa glareola</i>)	V	HR					●	●			●			●				●	
Nordmann's Greenshank (<i>Tringa guttifer</i>)	V	HR			●		●							●				●	
Spotted Redshank (<i>Tringa erythropus</i>)	V	HR			●		●							●					
Common Greenshank (<i>Tringa nebularia</i>)	V	HR			●		●				●			●				●	
Ruddy Turnstone (<i>Arenaria interpres</i>)	V	HR			●		●							●				●	
Great Knot (<i>Calidris tenuirostris</i>)	V	HR			●		●							●				●	
Red Knot (<i>Calidris canutus</i>)	V	HR			●		●							●				●	
Ruff (<i>Calidris pugnax</i>)	V	HR			●		●	●						●				●	
Sharp-tailed Sandpiper (<i>Calidris acuminata</i>)	V	HR			●		●	●			●			●				●	
Temminck's Stint (<i>Calidris temminckii</i>)	V	HR					●	●			●			●					
Long-toed Stint (<i>Calidris subminuta</i>)	V	HR					●	●			●			●					
Spoon-billed Sandpiper (<i>Calidris pygmaea</i>)	V	HR			●		●							●				●	
Sanderling (<i>Calidris alba</i>)	V	HR			●		●							●				●	
Saunders's Gull (<i>Saundersilarus saundersi</i>)	V	HR			●									●				●	
Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	V	HR			●		●							●					
Eurasian Spoonbill (<i>Platalea leucorodia</i>)	V	HR			●		●							●					
Eurasian Bittern (<i>Botaurus stellaris</i>)	V	HR				●		●						●					
Black Bittern (<i>Botaurus flavicollis</i>)	V	HR				●		●			●			●					
Cinnamon Bittern (<i>Botaurus cinnamomeus</i>)	V	HR				●	●	●			●			●					

Table 4. Key Habitats and Major Threats to At-risk Birds (continued)

			HABITAT													THREAT			
ENGLISH NAME (SCIENTIFIC NAME)	POPULATION (B/V)	STATUS	FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS		
Von Schrenck's Bittern (<i>Botaurus eurhythmus</i>)	V	HR				●		●			●			●					
Yellow Bittern (<i>Botaurus sinensis</i>)	V	HR				●	●	●						●					
Yellow Bittern (<i>Botaurus sinensis</i>)	B	HR				●	●	●						●					
Chinese Egret (<i>Egretta eulophotes</i>)	V	HR			●									●			●		
Eastern Cattle Egret (<i>Ardea coromanda</i>)	B	HR		●			●	●		●	●			●					
Purple Heron (<i>Ardea purpurea</i>)	V	HR				●		●						●					
Dalmatian Pelican (<i>Pelecanus crispus</i>)	V	HR			●									●			●		
Black-winged Kite (<i>Elanus caeruleus</i>)	V	HR					●	●			●			●					
Black Baza (<i>Aviceda leuphotes</i>)	B	HR	●								●			●					
Greater Spotted Eagle (<i>Clanga clanga</i>)	V	HR					●	●			●			●			●		
Eastern Imperial Eagle (<i>Aquila heliaca</i>)	V	HR					●	●			●			●			●		
Bonelli's Eagle (<i>Aquila fasciata</i>)	B	HR					●	●			●			●					
Eastern Marsh Harrier (<i>Circus spilonotus</i>)	V	HR		●	●	●	●	●			●			●			●		
Pied Harrier (<i>Circus melanoleucos</i>)	V	HR		●	●	●	●	●			●			●			●		
White-bellied Sea Eagle (<i>Ichthyophaga leucogaster</i>)	B	HR												●					
Eurasian Eagle-Owl (<i>Bubo bubo</i>)	B	HR								●				●					
Black-capped Kingfisher (<i>Halcyon pileata</i>)	V	HR		●	●		●							●			●		
Pied Kingfisher (<i>Ceryle rudis</i>)	B	HR		●			●	●	●					●					
Eurasian Wryneck (<i>Jynx torquilla</i>)	V	HR*									●			●					
Common Kestrel (<i>Falco tinnunculus</i>)	V	HR					●	●		●	●			●					
Eurasian Hobby (<i>Falco subbuteo</i>)	B	HR					●	●			●			●					
Peregrine Falcon (<i>Falco peregrinus</i>)	B	HR			●		●	●			●			●					
Yellow-crested Cockatoo (<i>Cacatua sulphurea</i>)	B	HR										●							
Black Drongo (<i>Dicrurus macrocercus</i>)	B	HR					●	●		●	●			●					
Bull-headed Shrike (<i>Lanius bucephalus</i>)	V	HR								●	●			●					

Table 4. Key Habitats and Major Threats to At-risk Birds (continued)

			HABITAT												THREAT			
ENGLISH NAME (SCIENTIFIC NAME)	POPULATION (B/V)	STATUS	FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS	
Oriental Magpie (<i>Pica serica</i>)	B	HR					●			●	●	●		●				
Eurasian Skylark (<i>Alauda arvensis</i>)	V	HR									●			●				
Sooty-headed Bulbul (<i>Pycnonotus aurigaster</i>)	B	HR*								●	●			●				
Manchurian Reed Warbler (<i>Acrocephalus tangorum</i>)	V	HR				●								●			●	
Styan's Grasshopper Warbler (<i>Helopsaltes pleskei</i>)	V	HR		●		●								●			●	
Russet Bush Warbler (<i>Locustella mandelli</i>)	B	HR								●	●			●				
Zitting Cisticola (<i>Cisticola juncidis</i>)	B	HR				●				●	●			●				
Golden-headed Cisticola (<i>Cisticola exilis</i>)	V	HR								●	●			●				
Vinous-throated Parrotbill (<i>Suthora webbiana</i>)	B	HR								●				●				
White-browed Laughingthrush (<i>Pterorhinus sannio</i>)	B	HR*								●				●				
Chinese Babax (<i>Pterorhinus lanceolatus</i>)	B	HR								●				●				
Red-billed Starling (<i>Spodiopsar sericeus</i>)	V	HR					●	●			●			●				
Bluethroat (<i>Luscinia svecica</i>)	V	HR				●	●				●			●				
Grey Bush Chat (<i>Saxicola ferreus</i>)	V	HR								●	●			●				
Russet Sparrow (<i>Passer cinnamomeus</i>)	V	HR									●			●				
Citrine Wagtail (<i>Motacilla citreola</i>)	V	HR					●	●			●			●				
Richard's Pipit (<i>Anthus richardi</i>)	B	HR								●	●			●				
Richard's Pipit (<i>Anthus richardi</i>)	V	HR*								●	●			●				
Pechora Pipit (<i>Anthus gustavi</i>)	V	HR					●	●			●			●				
Siberian Pipit (<i>Anthus japonicus</i>)	V	HR					●	●			●			●				
Upland Pipit (<i>Anthus sylvanus</i>)	B	HR								●				●				
Common Rosefinch (<i>Carpodacus erythrinus</i>)	V	HR								●	●			●				
Oriental Greenfinch (<i>Chloris sinica</i>)	B	HR									●			●				
Oriental Greenfinch (<i>Chloris sinica</i>)	V	HR									●			●				
Little Bunting (<i>Emberiza pusilla</i>)	V	HR*					●				●			●				

Table 4. Key Habitats and Major Threats to At-risk Birds (continued)

			HABITAT												THREAT			
ENGLISH NAME (SCIENTIFIC NAME)	POPULATION (B/V)	STATUS	FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS	
Rustic Bunting (<i>Emberiza rustica</i>)	V	HR									●			●			●	
Yellow-breasted Bunting (<i>Emberiza aureola</i>)	V	HR									●			●			●	
Japanese Yellow Bunting (<i>Emberiza sulphurata</i>)	V	HR									●			●			●	
Gadwall (<i>Mareca strepera</i>)	V	MR*			●		●							●				
Mallard (<i>Anas platyrhynchos</i>)	V	MR*			●		●	●						●				
Greater Scaup (<i>Aythya marila</i>)	V	MR*			●		●		●					●				
Chinese Francolin (<i>Francolinus pintadeanus</i>)	B	MR								●				●				
Lesser Coucal (<i>Centropus bengalensis</i>)	B	MR								●				●				
Red Collared Dove (<i>Streptopelia tranquebarica</i>)	V	MR					●				●			●				
Eastern Water Rail (<i>Rallus indicus</i>)	V	MR*						●			●			●				
Common Moorhen (<i>Gallinula chloropus</i>)	V	MR		●			●	●						●				
Baillon's Crane (<i>Zapornia pusilla</i>)	V	MR*					●	●			●			●				
Watercock (<i>Gallicrex cinerea</i>)	V	MR*					●	●			●			●				
Grey Plover (<i>Pluvialis squatarola</i>)	V	MR			●		●							●			●	
Little Ringed Plover (<i>Charadrius dubius</i>)	V	MR			●		●	●	●		●			●				
Siberian Sand Plover (<i>Anarhynchus mongolus</i>)	V	MR			●		●							●			●	
Greater Painted-snipe (<i>Rostratula benghalensis</i>)	B	MR*					●	●			●			●				
Asian Dowitcher (<i>Limnodromus semipalmatus</i>)	V	MR			●		●							●			●	
Swinhoe's Snipe (<i>Gallinago megala</i>)	V	MR*						●			●			●				
Pintail Snipe (<i>Gallinago stenura</i>)	V	MR*						●			●			●				
Broad-billed Sandpiper (<i>Calidris falcinellus</i>)	V	MR*			●		●							●			●	
Oriental Pratincole (<i>Glareola maldivarum</i>)	V	MR					●	●			●			●				
Black-faced Spoonbill (<i>Platalea minor</i>)	V	MR			●		●							●			●	
Grey Heron (<i>Ardea cinerea</i>)	V	MR			●		●	●	●					●				
Osprey (<i>Pandion haliaetus</i>)	V	MR*			●		●							●				
Crested Honey Buzzard (<i>Pernis ptilorhynchus</i>)	V	MR*	●								●							

Table 4. Key Habitats and Major Threats to At-risk Birds (continued)

			HABITAT												THREAT			
ENGLISH NAME (SCIENTIFIC NAME)	POPULATION (B/V)	STATUS	FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS	
Brown Fish Owl (<i>Ketupa zeylonensis</i>)	B	MR*	●						●		●			●				
Brown Wood Owl (<i>Strix leptogrammica</i>)	B	MR*	●															
Eurasian Hoopoe (<i>Upupa epops</i>)	V	MR*									●			●				
Blue-tailed Bee-eater (<i>Merops philippinus</i>)	V	MR									●			●				
Peregrine Falcon (<i>Falco peregrinus</i>)	V	MR*			●		●	●		●	●			●				
Long-tailed Shrike (<i>Lanius schach</i>)	B	MR					●	●		●	●			●				
Collared Crow (<i>Corvus torquatus</i>)	B	MR		●			●				●			●				
Chinese Penduline Tit (<i>Remiz consobrinus</i>)	V	MR				●								●				
Sand Martin (<i>Riparia riparia</i>)	V	MR					●	●						●				
Asian House Martin (<i>Delichon dasypus</i>)	V	MR					●	●			●			●				
Eastern Red-rumped Swallow (<i>Cecropis daurica</i>)	B	MR					●	●			●			●				
Eastern Red-rumped Swallow (<i>Cecropis daurica</i>)	V	MR*					●	●			●			●				
Manchurian Bush Warbler (<i>Horornis canturians</i>)	V	MR				●				●	●			●				
Thick-billed Warbler (<i>Arundinax aedon</i>)	V	MR*				●				●	●			●				
Pallas's Grasshopper Warbler (<i>Helopsaltes certhiola</i>)	V	MR				●					●			●				
Lanceolated Warbler (<i>Locustella lanceolata</i>)	V	MR				●					●			●				
Chinese Grassbird (<i>Graminicola striatus</i>)	B	MR								●				●				
White-cheeked Starling (<i>Spodiopsar cineraceus</i>)	V	MR					●	●			●			●				
Dusky Thrush (<i>Turdus eunomus</i>)	V	MR*									●			●				
Siberian Rubythroat (<i>Calliope calliope</i>)	V	MR				●				●	●			●				
Plumbeous Water Redstart (<i>Phoenicurus fuliginosus</i>)	V	MR*							●									
Red-throated Pipit (<i>Anthus cervinus</i>)	V	MR					●	●			●			●				
Chestnut-eared Bunting (<i>Emberiza fucata</i>)	V	MR									●			●				
Black-faced Bunting (<i>Emberiza spodocephala</i>)	V	MR				●	●			●	●			●				

REPTILES

1 in every 5 reptiles (20%, 14 species) is at risk; all 6 native turtles are threatened with half of them considered at High Risk of local extinction, chiefly due to poaching (**Table 5**).

HIGH RISK - 6 SPECIES

Chinese Three-banded Box Turtle (*Cuora trifasciata*)

Following decades of intensive poaching, this globally CR species is now extremely rare in Hong Kong and unlikely to recover unless significant improvements in anti-poaching measures are implemented. A successful conservation breeding programme is in place and captive-bred turtles can be released back to the wild when effective patrolling and enforcement are established.



Beale's Eyed Turtle (*Sacalia bealei*)

This species has a scattered distribution and decades of poaching have reduced the population to a handful of sites, with most subpopulations no longer viable. Strengthening anti-poaching efforts and reintroducing captive-bred individuals would be essential to restoring its wild population.



Bogadek's Legless Lizard (*Dibamus bogadeki*)

This endemic species is very little-known given its fossorial lifestyle. Few specimens have been found recently, and there is concern over the habitat condition within its range.



MODERATE RISK - 8 SPECIES

Chinese Softshell Turtle (*Pelodiscus sinensis*)

Restricted to lowland wetlands and reservoirs, where the population is suffering from wetland loss, hybridisation with released individuals, and poaching.



Buff-striped Keelback (*Amphiesma stolatum*)

Its distribution in Hong Kong has significantly reduced over the past decades as its preferred open country habitats, including paddy fields, lowland streams and grasslands, continue to deteriorate.

Reeves' Gecko (*Gekko reevesii*)

Restricted to a few localities and is poached for the pet and traditional Chinese medicine trades. It is also at risk of hybridisation with the closely related Tokay Gecko (*Gekko gecko*) from Southeast Asia, which has escaped or been released into the wild.



REPTILES

ASSESSED

71
Species

CONSIDERED

71
Species

EXTINCT

0 (0%)
Species

HIGH RISK

6 (8%)
Species

MODERATE RISK

8 (11%)
Species

LOW RISK

53 (75%)
Species

DATA DEFICIENT

4
Species

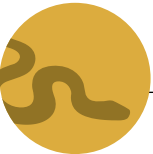


Table 5. Key Habitats and Major Threats to At-risk Reptiles

ENGLISH NAME (SCIENTIFIC NAME)	STATUS	HABITAT											THREAT			
		FOREST	MANGROVE	MUDEFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS
Chinese Three-banded Box Turtle (<i>Cuora trifasciata</i>)	HR							●					●	●		
Beale's Eyed Turtle (<i>Sacalia bealei</i>)	HR							●					●	●		
Big-headed Turtle (<i>Platysternon megacephalum</i>)	HR							●					●	●		
Wattle-necked Softshell Turtle (<i>Palea steindachneri</i>)	HR							●					●	●		
Bogadek's Legless Lizard (<i>Dibamus bogadeki</i>)	HR	●											●			
Hong Kong Blind Snake (<i>Indotyphlops lazelli</i>)	HR	●											●			
Reeve's Terrapin (<i>Mauremys reevesii</i>)	MR						●	●		●			●		●	
Chinese Softshell Turtle (<i>Pelodiscus sinensis</i>)	MR					●		●				●	●	●		
Reeves' Gecko (<i>Gekko reevesii</i>)	MR	●							●		●			●	●	
Buff-striped Keelback (<i>Amphiesma stolatum</i>)	MR									●			●			
Banded Stream Snake (<i>Trimerodytes balteatus</i>)	MR							●					●			
King Cobra (<i>Ophiophagus hannah</i>)	MR	●				●	●	●	●	●			●			
White-headed Blind Snake (<i>Indotyphlops albiceps</i>)	MR	●											●			
Chinese Water Snake (<i>Myrrophis chinensis</i>)	MR		●			●		●					●			

● Reservoir

AMPHIBIANS

1 in every 5 amphibian species (21%, 5 species) is threatened with local extirpation and one frog is locally extinct due to habitat loss (Table 6).

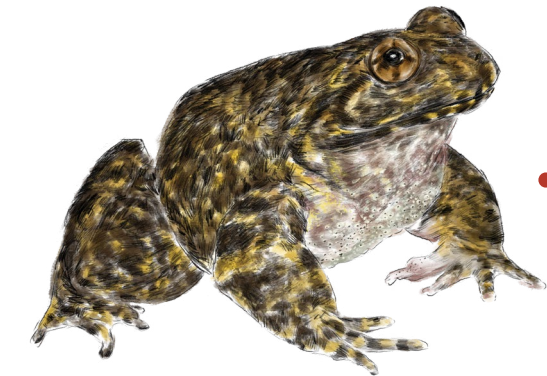
EXTINCT IN HONG KONG - 1 SPECIES

Chinese Floating Frog (*Occidozyga obscura*)

This lowland wetland species is extinct in Hong Kong, with the last individual found in Tai O in 1995.



HIGH RISK - 4 SPECIES



Giant Spiny Frog (*Quasipaa spinosa*)

The largest amphibian in Hong Kong; restricted to high-altitude streams in the central New Territories. Subject to high poaching pressure.

Three-striped Grass Frog (*Hylarana macrodactyla*)

Only a few scattered subpopulations of this lowland marsh specialist remain, with habitat degradation occurring at its key sites.



MODERATE RISK - 1 SPECIES



Chinese Bullfrog (*Hoplobatrachus chinensis*)

The largest lowland amphibian in Hong Kong. The local population has been declining mainly due to farmland loss. The release of market individuals may lead to hybridisation or spread of disease.

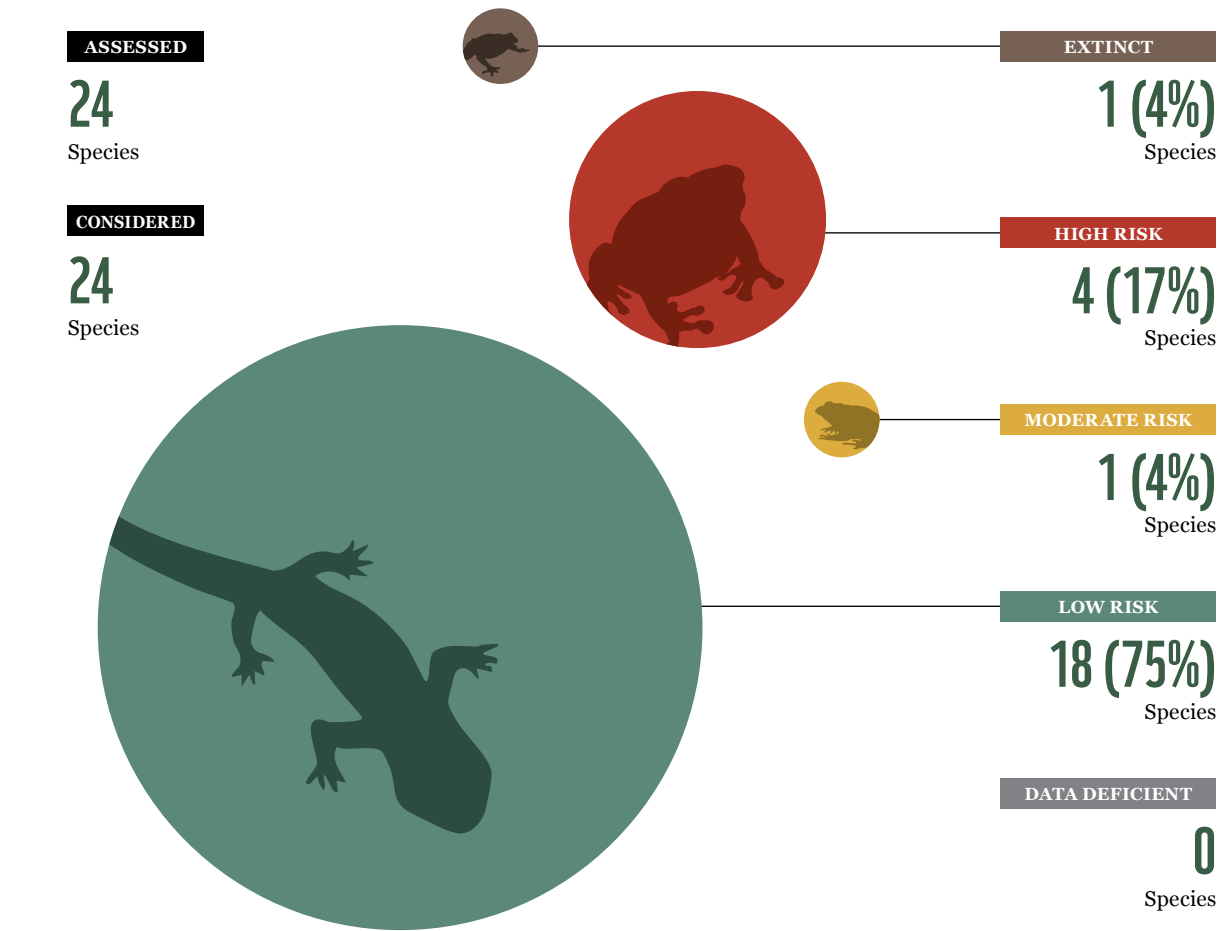


Table 6. Key Habitats and Major Threats to At-risk Amphibians

		HABITAT										THREAT				
ENGLISH NAME (SCIENTIFIC NAME)	STATUS	FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS
Giant Spiny Frog (<i>Quasipaa spinosa</i>)	HR							●						●		
White-spined Cascade Frog (<i>Amolops albispinus</i>)	HR							●					●			
Three-striped Grass Frog (<i>Hylarana macrodactyla</i>)	HR*						●	●					●			
Two-striped Grass Frog (<i>Hylarana taipehensis</i>)	HR*						●	●		●			●			
Chinese Bullfrog (<i>Hoplobatrachus chinensis</i>)	MR						●	●		●			●		●	

FRESHWATER FISHES

Freshwater fishes are the most threatened faunal group with almost half of the native species (46%, 28 species) at risk of local extinction (**Table 7**).

EXTINCT IN HONG KONG - 3 SPECIES

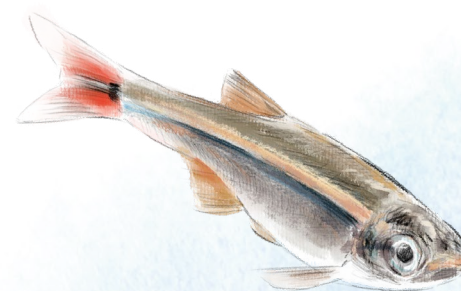
Aphyocypris lini

First recorded from Fanling in 1936; this lowland stream species was last reported in 1986 (Chong & Dudgeon 1992).



Tanichthys albonubes

This lowland species was first collected in Fanling on the same date by the same collector as for *Aphyocypris lini*. It was last recorded from Lam Tsuen River in 1958.



Plecoglossus altivelis

The last reliable record was made by Chong (1993) in Tai Ho, and there have been no subsequent sightings in potentially suitable habitat.



HIGH RISK - 21 SPECIES

Anguilla japonica

Although widespread in Hong Kong, population densities are very low. Urban development and river training have destroyed much of its habitats, and it is globally EN due to overfishing.



Rasbora steineri

This lowland species is only known from two locations locally, both of which are outside the protected-area system.



Macropodus opercularis

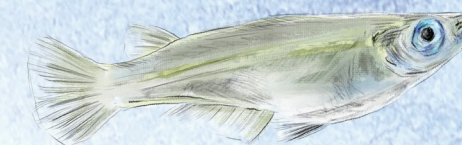
This lowland species has undergone substantial decline due to habitat loss and degradation.



MODERATE RISK - 7 SPECIES

Oryzias latipes

Confined to a few discrete locations where its preferred lowland habitats such as rice paddies and freshwater marshes are rapidly disappearing.



Channa asiatica

This species has declined in both abundance and range due to degradation and loss of lowland habitats.



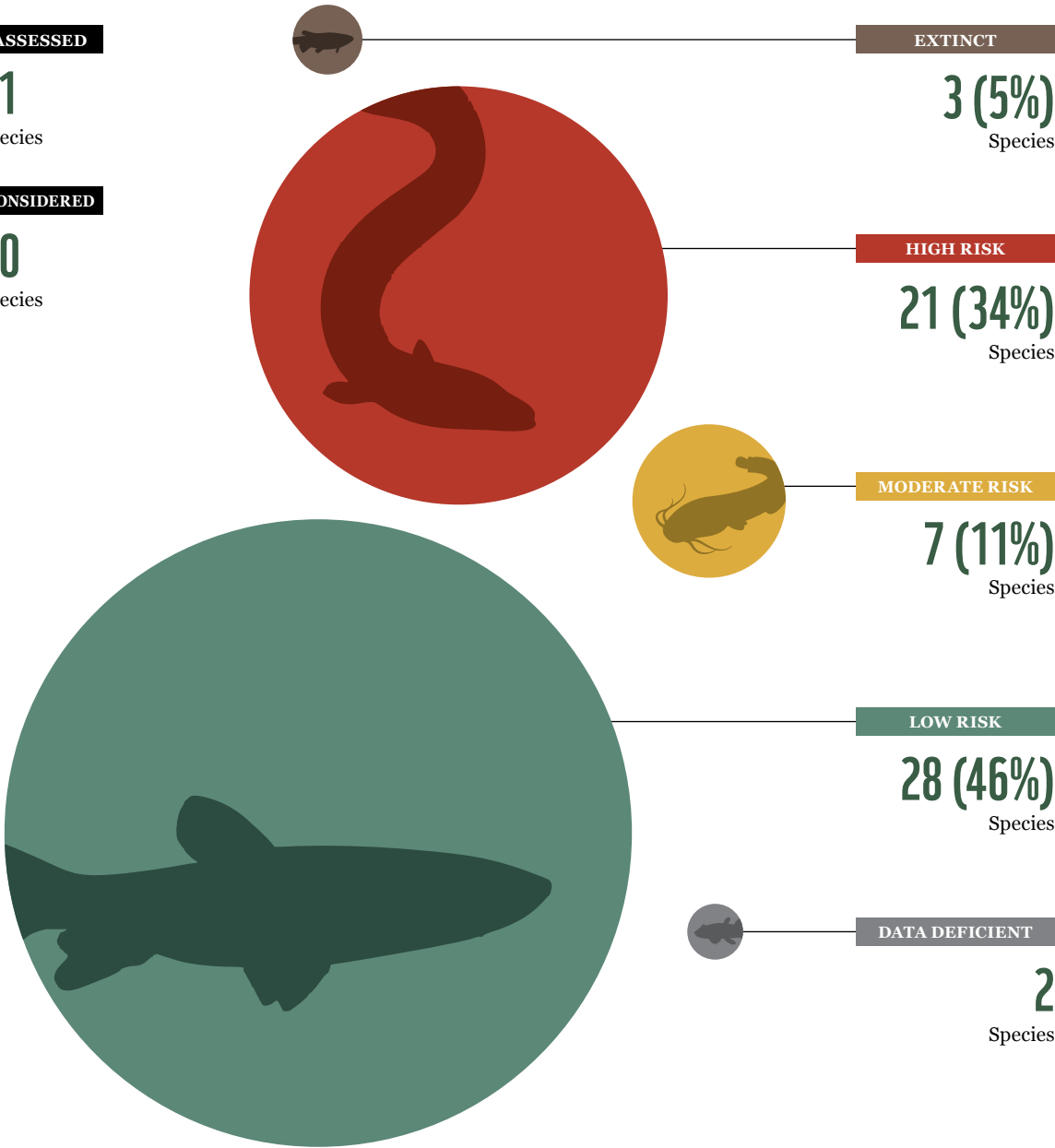
FRESHWATER FISHES

ASSESSED

61
Species

CONSIDERED

70
Species



EXTINCT

3 (5%)
Species

HIGH RISK

21 (34%)
Species

MODERATE RISK

7 (11%)
Species

LOW RISK

28 (46%)
Species

DATA DEFICIENT

2
Species

Table 7. Key Habitats and Major Threats to At-risk Freshwater Fishes

SCIENTIFIC NAME	STATUS	HABITAT											THREAT			
		FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS
<i>Anguilla japonica</i>	HR*							●					●	●		●
<i>Anguilla marmorata</i>	HR*							●					●	●		●
<i>Schistura incerta</i>	HR							●					●			
<i>Acrossocheilus beijiangensis</i>	HR							●					●	●	●	
<i>Acrossocheilus parallens</i>	HR							●					●	●	●	
<i>Rasbora steineri</i>	HR							●					●			
<i>Metzia formosae</i>	HR							●				●	●			
<i>Metzia lineata</i>	HR							●				●	●			
<i>Rhodeus ocellatus</i>	HR						●	●				●	●			
<i>Tachysurus trilineatus</i>	HR							●					●	●		
<i>Glyptothorax pallozonus</i>	HR							●					●			
<i>Giuris tolsoni</i>	HR							●					●	●		●
<i>Hypseleotris cyprinoides</i>	HR							●					●	●		●
<i>Awaous melanocephalus</i>	HR							●					●	●		●
<i>Rhinogobius leavelli</i>	HR							●					●	●		
<i>Stiphodon atropurpureus</i>	HR*							●					●	●		●
<i>Stiphodon imperiorientis</i>	HR							●					●	●		●
<i>Stiphodon percnopterygionus</i>	HR							●					●	●		●
<i>Mastacembelus armatus</i>	HR							●				●	●		●	
<i>Macropodus opercularis</i>	HR						●	●		●			●	●		
<i>Channa maculata</i>	HR						●	●				●	●		●	
<i>Clarias fuscus</i>	MR							●		●		●	●		●	
<i>Stiphodon multisquamus</i>	MR							●					●	●		●
<i>Macropodus hongkongensis</i>	MR						●	●					●	●	●	
<i>Channa asiatica</i>	MR						●	●		●		●	●		●	
<i>Oryzias curvinotus</i>	MR							●		●		●	●		●	
<i>Kuhlia marginata</i>	MR							●					●	●		●
<i>Kuhlia rupestris</i>	MR							●					●	●		●

● Reservoir

BUTTERFLIES

1 in every 18 species of butterfly (6%, 15 species) is threatened and two-thirds of these are associated with open habitats, such as grassland – shrubland, which are vulnerable to vegetation succession or development (**Table 8**).

EXTINCT IN HONG KONG - 2 SPECIES

Castalius rosimon

Formerly widespread in the New Territories, Lantau and Lamma Islands, but the last breeding record was in the early 1980s (Mike Bascombe in litt. 2024).



Flos asoka

A small series of local materials collected by E. Wahr in the early 1900s was deposited in London's Natural History Museum collection, including a female that was designated the type for subspecies *F. asoka vaya* (Bascombe et al. 1999). There have been no local records of this species for more than 100 years.



HIGH RISK - 9 SPECIES

Kallima inachus

First recorded in Hong Kong in 1994 (Walthew 1995), but could not be found since 2008 although some suspected released individuals were seen in 2012. Further investigation is required to confirm if it is locally extinct.



Byasa confusus

Only known at three upland locations on Hong Kong Island, and is rare in most years.



Ypthima imitans

Associated with grassy shrubland and woodland at mid- to high-elevations. Formerly known from several locations in the central New Territories (Bascombe et al. 1999) but is now confined to two locations on Lantau Island.



MODERATE RISK - 6 SPECIES

Pelopidas subochracea

Inhabits exposed fire-maintained grassland, and declines are inferred due to vegetation succession.



Junonia hierta

Inhabits dry open habitat at a few locations.



BUTTERFLIES

ASSESSED

239

Species

CONSIDERED

272

Species

EXTINCT

2 (1%)

Species

HIGH RISK

9 (4%)

Species

MODERATE RISK

6 (3%)

Species

LOW RISK

222 (93%)

Species

DATA DEFICIENT

0

Species



Table 8. Key Habitats and Major Threats to At-risk Butterflies

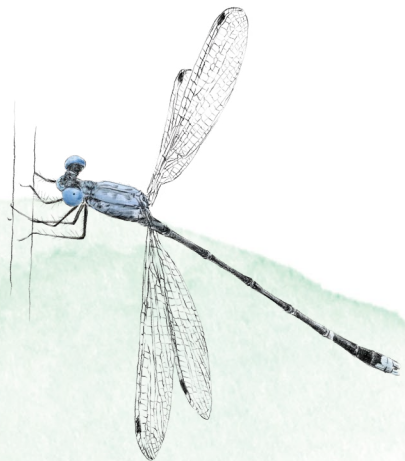
SCIENTIFIC NAME	STATUS	HABITAT											THREAT			
		FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS
<i>Caprona alida</i>	HR*								●				●			
<i>Aeromachus pygmaeus</i>	HR						●			●			●			
<i>Byasa confusus</i>	HR	●														
<i>Eurema laeta</i>	HR								●	●						
<i>Miletus chinensis</i>	HR	●														
<i>Freyeria putli</i>	HR*								●	●			●			
<i>Kallima inachus</i>	HR	●														
<i>Ypthima norma</i>	HR*								●				●			
<i>Ypthima imitans</i>	HR	●							●				●			
<i>Thoressa monastyrskyi</i>	MR	●											●			
<i>Halpe pauper</i>	MR	●							●							
<i>Isoteinon lamprospilus</i>	MR*	●														
<i>Pelopidas subochracea</i>	MR								●				●			
<i>Telchinia issoria</i>	MR*									●			●			
<i>Junonia hierta</i>	MR*								●	●			●			

DRAGONFLIES

1 in every 7 dragonfly species (14%, 16 species) is at risk of extinction and 4% have already gone extinct locally (Table 9).

EXTINCT IN HONG KONG - 5 SPECIES

Lestes praemorsus praemorsus
Formerly found at seasonal marshes adjacent to woodlands, last recorded in 1971 (Wilson 1995).



HIGH RISK - 12 SPECIES

Fukienogomphus choifongae
Only occurs in one single stream at Wu Kau Tang where the surrounding area is largely unprotected.



Macromia katae
Restricted to the northeast and eastern New Territories, it is typically observed in low numbers and the adult population is estimated to be fewer than 250 individuals.



MODERATE RISK - 4 SPECIES

Stylogomphus chunliuae
Primarily restricted to the central New Territories, with an estimated population size of fewer than 1,000 mature individuals.

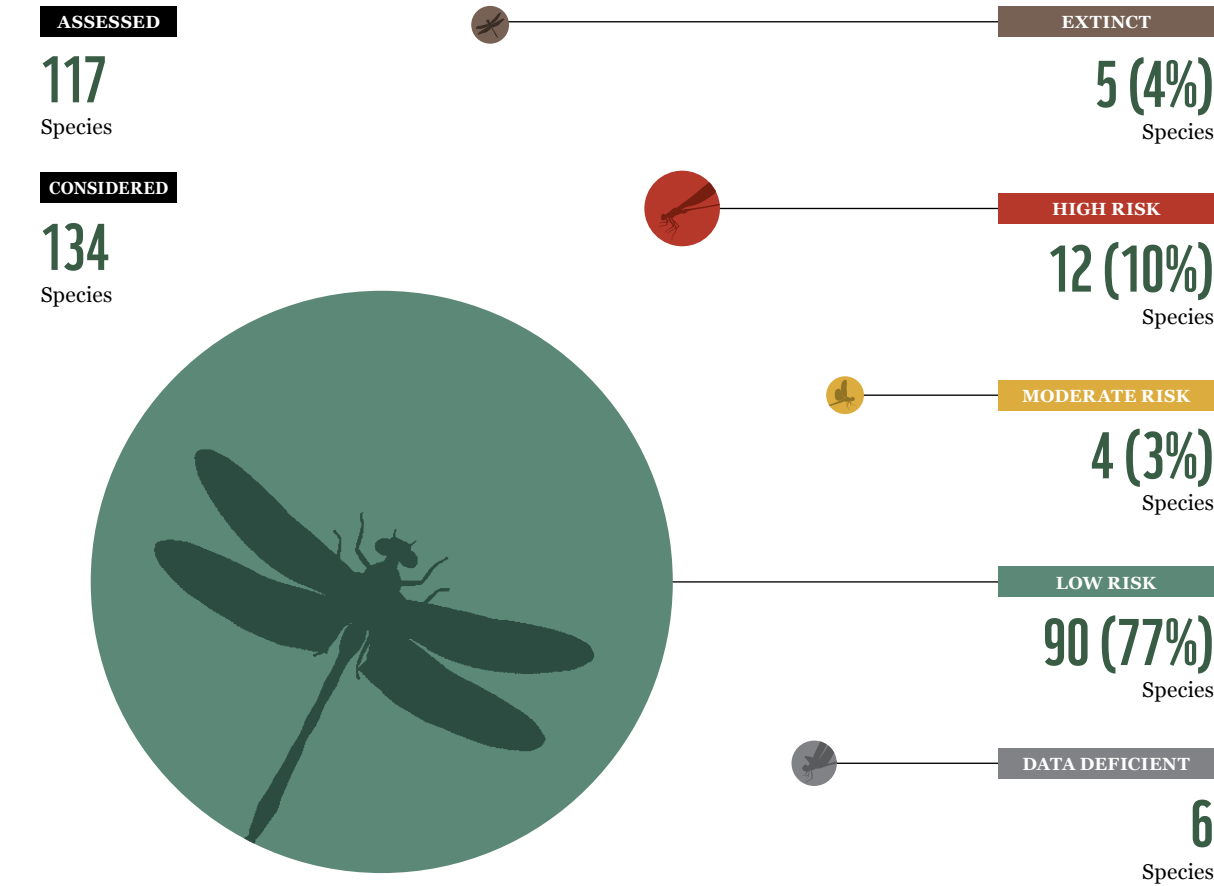


Table 9. Key Habitats and Major Threats to At-risk Dragonflies

		HABITAT											THREAT			
SCIENTIFIC NAME	STATUS	FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRA-TERRITORIAL RISKS
<i>Aciagrion approximans</i>	HR						●						●			
<i>Agriocnemis lacteola</i>	HR						●		●				●			
<i>Pseudagrion spencei</i>	HR							●					●		●	
<i>Lestes nodalis</i>	HR						●						●			
<i>Cephalaeschna klotsae</i>	HR	●						●								
<i>Fukienogomphus choifongae</i>	HR	●						●					●			
<i>Gomphidia kelloggi</i>	HR	●						●					●			
<i>Diplacodes nebulosa</i>	HR					●	●						●			
<i>Nannophya pygmaea</i>	HR						●						●			
<i>Macromia katae</i>	HR	●						●					●			
<i>Idionyx claudia</i>	HR	●						●								
<i>Macromidia ellenae</i>	HR	●						●					●			
<i>Anax nigrofasciatus nigrofasciatus</i>	MR	●					●	●					●			
<i>Gynacantha japonica</i>	MR	●						●					●			
<i>Euthygomphus koxingai</i>	MR	●						●								
<i>Stylogomphus chunliuae</i>	MR	●						●								

FRESHWATER CRUSTACEANS

1 in every 5 species (22%, 5 species) are at risk of local extinction. All are shrimps and prawns which have highly restricted ranges and are threatened by collecting as aquarium pets (Table 10).



HIGH RISK - 3 SPECIES

Macrobrachium venustum
Restricted to the northern New Territories. Populations outside the Country Park system are threatened by development and water pollution.

MODERATE RISK - 2 SPECIES

Caridina trifasciata
Restricted to the eastern New Territories. Although most populations are within Country Parks, these shrimps are threatened by poaching.

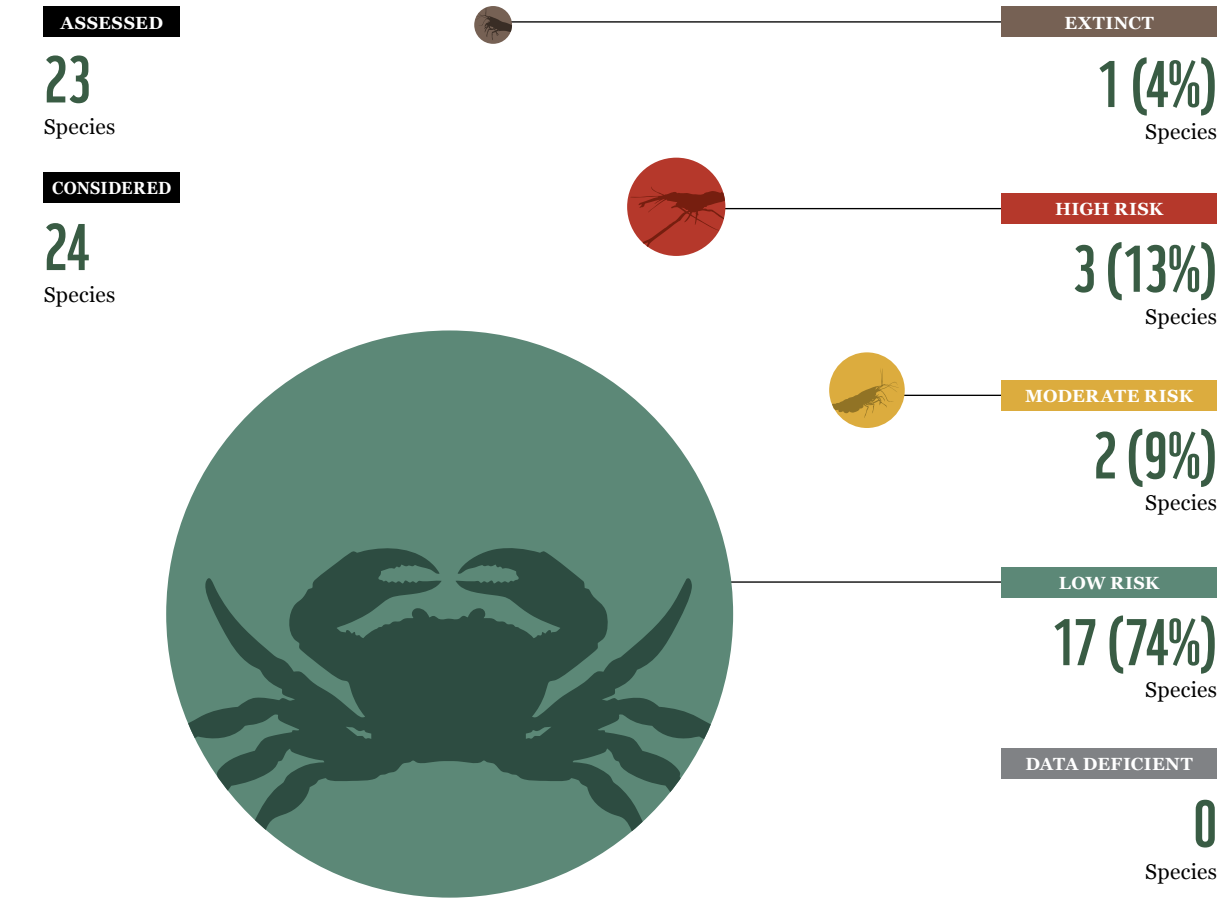
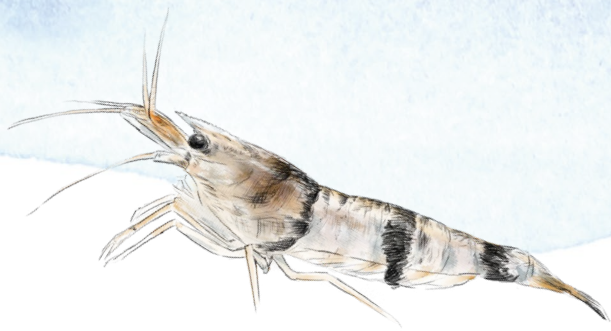


Table 10. Key Habitats and Major Threats to At-risk Freshwater Crustaceans

		HABITAT											THREAT			
SCIENTIFIC NAME	STATUS	FOREST	MANGROVE	MUDFLAT	REEDBED	FISHPOND/ GEI WAI	FRESHWATER MARSH	WATERCOURSE	GRASSLAND - SHRUBLAND	FARMLAND	URBAN	OTHERS	HABITAT LOSS & DEGRADATION	POACHING	INVASIVE SPECIES & FERAL ANIMALS	EXTRATERRITORIAL RISKS
Caridina logemanni	HR							●						●		
Macrobrachium lantau	HR		●					●					●			●
Macrobrachium venustum	HR							●					●			
Caridina trifasciata	MR							●					●	●		
Macrobrachium lar	MR*							●						●		●

BIODIVERSITY HOTSPOT MAPPING

Hong Kong citizens take pride in the extensive protected-area system, which covers 40.5% of the land area of Hong Kong and includes 25 Country Parks, 22 Special Areas and the Mai Po Marshes Restricted Area. These wilderness areas provide a much-needed breathing space from busy city life and are havens for much of our non-marine biodiversity. However, most lowland habitats, such as Fung Shui Woods, rivers and streams, fishponds, freshwater marshes and farmlands are not covered by statutory protected areas and are under immense development pressure. In view of this, mapping out biodiversity hotspots outside the protected-area system in Hong Kong is a crucial step for supporting conservation initiatives in the near future. Mapping of this kind identifies and highlights sites of high ecological value which are most in need of urgent conservation efforts, so that relevant government departments and environmental NGOs can prioritise limited resources,

maximise conservation outcomes, and ensure that critical habitats are conserved and properly managed.

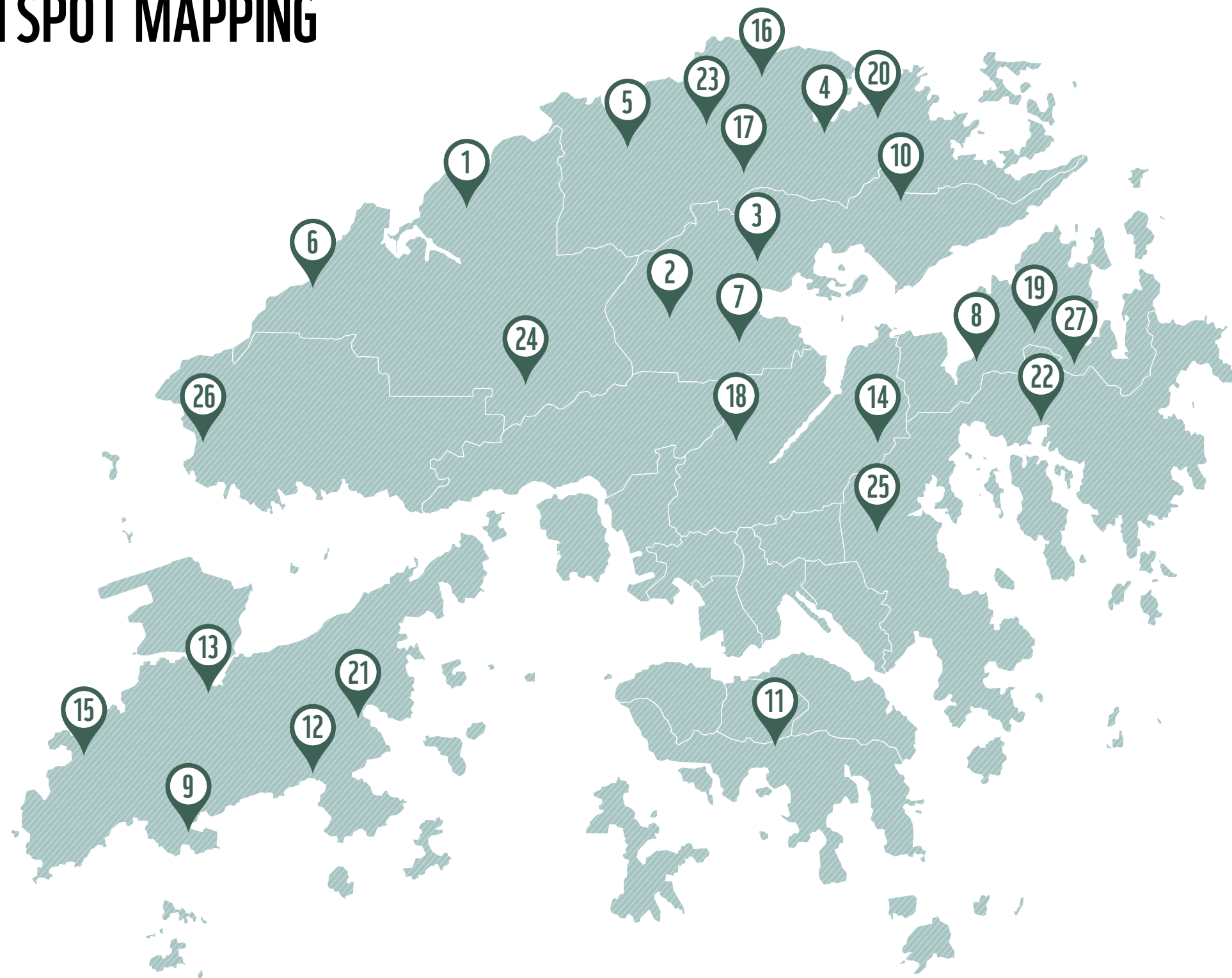
A further important point is that, with mega-development projects such as Northern Metropolis and Lantau Tomorrow looming on the horizon, a biodiversity hotspot map can serve as a valuable reference for decision-makers and planners, providing much-needed information and guidance to help inform strategic planning on a territory-wide basis, as well as any associated processes including environmental impact assessments, thus minimising the conflicts between conservation and development. Nonetheless, for the past two decades there has been no up-to-date effort in this aspect following similar exercises carried out by Yip (2002) and under the New Nature Conservation Policy announced in 2004.

In our current assessment, the following 7 criteria are adopted:

1. Vulnerability	Sites more susceptible to anthropogenic degradation and/or habitat deterioration are given higher scores as they need immediate conservation interventions.
2. Naturalness	Sites that are near-natural or with minimal anthropogenic modifications are of higher conservation value and given higher scores, although it is acknowledged that much of Hong Kong’s ecosystems have been modified to some extent.
3. Habitat Diversity	Sites containing more diverse habitat types would be rated higher as they are of greater ecological importance. Major habitat types include forest, mudflat, mangrove, fishpond/ <i>gei wai</i> , reedbed, watercourse, freshwater marsh, grassland–shrubland, and farmland.
4. Recreatability	Sites that are difficult to recreate would be rated higher. In this regard, the size of the site, the complexity of habitats concerned, the time and effort required to recreate the habitats, and the uncertainty involved are taken into consideration.
5. Species Diversity	Sites of higher species richness ¹ (number of species recorded) are of higher conservation value and given higher scores.
6. Assemblage of At-risk Species	Sites supporting at-risk species ^{1,2} of more faunal groups would be rated higher as they are of higher conservation value.
7. Richness of At-risk Species	Sites supporting more at-risk species ^{1,2} would be rated higher as they are of higher conservation value.

1. Faunal groups include mammals (medium to large non-volant mammals only), birds, reptiles, amphibians, freshwater fishes, butterflies, dragonflies, and freshwater crustaceans.
2. At-risk species refers to species identified as of High or Moderate Risk of local extinction by Or & Chan (2025).

BIODIVERSITY HOTSPOT MAPPING



- 1 Inner Deep Bay
- 2 Lam Tsuen Valley
- 3 Sha Lo Tung to Ping Shan Chai
- 4 Luk Keng to Nam Chung
- 5 Long Valley to Sandy Ridge
- 6 Pak Nai
- 7 Yuen Tun Ha
- 8 Yung Shue O
- 9 Shui Hau
- 10 Wu Kau Tang
- 11 Deep Water Bay Valley
- 12 Pui O
- 13 Tung Chung Valley to Sha Lo Wan
- 14 Mui Tsz Lam to Mau Ping
- 15 Tai O
- 16 Lin Ma Hang
- 17 Hok Tau to Tan Chuk Hang
- 18 Wong Chuk Yeung (Fo Tan)
- 19 Cheung Sheung
- 20 Kuk Po
- 21 Mui Wo
- 22 Pak Tam Chung
- 23 Ta Kwu Ling
- 24 Pat Heung South
- 25 Ho Chung
- 26 Lung Kwu Tan
- 27 Hoi Ha to Pak Sha O

* The detailed description for each identified hotspot is provided in the Hong Kong Terrestrial Biodiversity Hotspot Map 2025 attached to this Report.

REVERSING THE TREND – KEY RECOMMENDATIONS

The State of Hong Kong Biodiversity 2025, together with the *Hong Kong Terrestrial Biodiversity Hotspot Map 2025*, are truly collaborative effort by local researchers and ecologists, and its publication is timely in view of the looming development threats to the northern New Territories and Lantau Island, which make up large part of the remaining rural landscape of Hong Kong. The results reveal an alarming trend – a significant proportion of

Hong Kong’s biodiversity is at risk of local extinction, with lowland species inhabiting wetland, riverine, farmland and other open country habitats experiencing the most serious decline and requiring urgent conservation intervention. The distribution patterns and habitat requirements of these at-risk species highlight the major drivers for their decline.

HABITAT LOSS AND DEGRADATION

This is probably the most pressing threat to biodiversity in Hong Kong since it significantly impacts habitat specialists with restricted range and limited mobility, such as amphibians, freshwater fishes, butterflies, and dragonflies. While birds and mammals are comparatively mobile, some species also suffer from reduction in the extent of their optimal habitats in the rapidly changing lowland landscape. Of particular concern is the loss of natural lowland rivers due to flood control scheme (Chan 2001), degradation of freshwater wetlands (So & Dudgeon 2021) due to land-use change and/or vegetation succession, abandonment and/or land-use change of wet farmlands, urban encroachment in the Deep Bay wetland landscape and water pollution of the Deep Bay catchment.

Vegetation succession, a natural process by which plant communities change over time, can have both positive and negative impacts on biodiversity. Forest species thrive as habitat transitions from human-induced exposed grassland to forest, but this natural transformation also puts open country species at risk as their preferred habitat shrinks. Changes in the status of certain bird species best illustrate this effect – Chestnut Bulbul (*Hemixos castanonotus*) changed from being an irruptive winter visitor to a widespread forest species as native forest have matured, while Chinese Francolin (*Francolinus pintadeanus*), a grassland-shrubland specialist, has experienced a substantial decline in range and numbers as this habitat gradually regenerates to forest.



Pollution remains an unresolved problem with many waterways and wetlands in Hong Kong, especially across the ecologically sensitive Deep Bay catchment.

Key Recommendations

- The biodiversity hotspots identified in this study should be designated as “no-go” areas where no large-scale development (i.e., projects with a footprint of over 5ha, or housing a population of over 5,000 referencing to the usual limit of transitional housing project) would be permitted, unless it is deemed unavoidable with a strong and legitimate justification such as overriding public interest. Should that be the case, consultations with relevant stakeholders including concerned environmental groups should be initiated at the onset of conceptualisation, and the project proponent should work with best endeavours towards minimising the potential adverse impacts to the biodiversity of the area.
- TPB and relevant government departments such as PlanD and AFCD should exercise extreme caution when considering applications under the Town Planning Ordinance or the Land Sharing Pilot Scheme (especially those that would potentially affect identified hotspots), with more weight given to the associated ecological impacts. Special attention should be given to the growing numbers of applications for temporary uses involving land filling in “Agriculture” zones, where imprudent approval would legitimise illegal dumping or filling, causing irreversible ecological damage.
- To allow effective control over the planning and land use, PlanD and TPB should promptly extend coverage of DPA Plans to previously excluded rural areas, especially those identified as biodiversity hotspot.
- On the relevant OZPs, some rural habitats with ecological value are zoned as “Agriculture” or “Green Belt”, thus permitting ecologically incompatible activities and land uses. PlanD and TPB should strengthen such control of these areas, especially in biodiversity hotspots, either through revising the permitted uses under Columns 1 and 2, or revising the zoning to provide better statutory protection.

HABITAT LOSS AND DEGRADATION

Key Recommendations

- When preparing or amending statutory plans, PlanD and TPB, in association with AFCD, should ensure that the ecological importance of rural habitats, especially those in the lowland, are not undermined. Proper ecological surveys should be conducted to establish an ecological profile prior to assigning a land use zoning.
- To prevent or minimise undesirable ecological impacts to the identified biodiversity hotspots, the Government should establish a reciprocal notification system with relevant stakeholders such as relevant government departments (including but not limited to AFCD, DSD, FEHD, LandsD and HAD) and concerned environmental groups, allowing early notification and seeking advice on any public works and governmental services taking place in or near these areas, including but not limited to vegetation clearance, drainage improvement, tree removal, road widening/maintenance, and pest control.
- Conservation investment should target privately-owned freshwater marshes and farmlands of high conservation value. EEB should formulate a holistic private land conservation strategy with action plans, budget and time frames for Hong Kong to prioritise sites for immediate intervention. Innovative ways with incentives that help offset the owners' financial loss for other potential land uses should be explored, so as to engage landowners in the conservation of their lands.
- All Wetland Conservation Parks in the Northern Metropolis should be established sooner to prevent further degradation by vegetation succession in abandoned fishponds, as well as proactive inter-departmental operation such as installing CCTV cameras and automated drone surveillance at blackspots against eco-vandalism. Northern Metropolis Co-ordination Office should coordinate patrol and enforcement actions by relevant government departments.
- DSD should develop a strategic ecosystem restoration plan for all river catchments within the hotspots, aiming to ecologically restore engineered channels and address the recurring domestic and industrial pollution problems.
- EEB and AFCD should develop a science-based Hong Kong-wide wildlife habitat management strategy to preserve and maintain the habitat quality of key sites for specific habitat types, such as open grassland.
- Proactive conservation policies and blueprints, such as implementation of Agricultural Priority Areas, New Proactive Conservation Policy, and Blueprint for the Sustainable Development of Agriculture and Fisheries, should be delivered by EEB as soon as possible.
- Mechanisms to strive for nature positive outcomes from development projects, such as Biodiversity Net Gain (see: <https://www.gov.uk/guidance/understanding-biodiversity-net-gain>), should be adopted in Hong Kong Planning Standards and Guidelines. For example, since February 2024, UK developers must demonstrate a 10% biodiversity net gain in planning applications. This policy ensures development contributes to nature restoration.
- In ecological impact assessments, conservation importance of Moderate Risk species should not be underestimated as many of them could be driven to High Risk if further habitat loss is not avoided.



Lowland plains are most susceptible to development pressures, increasing the risk to a suite of species dependent on these habitats.

OVER-EXPLOITATION

Poaching for the medicinal and pet trades poses another major threat to Hong Kong's biodiversity, particularly for turtles, freshwater fishes, shrimps and prawns.

Escalated poaching pressure on the last remaining individuals of turtles is a major concern, since the Hong Kong populations are amongst the last wild populations for some species globally, such as Chinese Three-banded Box Turtle (*Cuora trifasciata*).

Key Recommendations

- Enhance the effectiveness of anti-poaching effort by installing surveillance cameras and other smart technologies at poaching blackspots.
- Update the list of protected species in Schedule 2 under Cap. 170 Wild Animal Protection Ordinance by taking account of at-risk species listed in this report, with regular review on changes in poaching dynamics.
- Amend Cap. 208A Country Parks and Special Areas Regulations to ban collecting of wildlife by any means in Country Parks and protected areas.
- Tighten control over the possession of protected native animals under Cap. 170 and endangered species under Cap. 586 by the use of individual animal identification systems and wildlife forensic tools to help verify the provenance of the concerned animals.
- A Government-led campaign to raise greater public awareness on the consequences of poaching and wildlife trade should be initiated. The recent Territory-wide Feeding Ban set a good standard for campaigns of this kind. A special task force involving the Police Force and AFCD, with input from local turtle specialists, is needed to prevent turtles being poached to extinction.
- The Government should reference the Incense Tree (*Aquilaria sinensis*) Species Action Plan to provide a pragmatic framework for strengthening enforcement actions against poaching on threatened native wildlife.



Despite various laws and regulations in place to protect wild animals, poaching still persists in Hong Kong.

INVASIVE SPECIES AND FERAL ANIMALS

Invasive species can outcompete native species for limited resources or directly prey on native species, and are extremely difficult to eradicate once established. The proliferation of introduced African and South American cichlids (e.g. the tilapias), African Catfish (*Clarias gariepinus*), tropical snakeheads (*Channa* spp.), Climbing Perch (*Anabas testudineus*) and South American suckermouth catfish (*Pterygoplichthys* sp.) in local waterways and reservoirs, must be impacting freshwater biodiversity and altering the ecosystem equilibrium in Hong Kong as these predatory species devour numerous native aquatic plants and animals. Furthermore, the hybridisation risk between closely related species, such as tokays (native *Gekko reevesii* and introduced *G. gecko*) and the edible bullfrogs (native population of *Hoplobatrachus chinensis* and market animals from Thailand) warrants in-depth investigation. Feral dogs and cats are known to hunt/kill native wildlife; cats are responsible for the deaths of 100-350 million birds annually in Canada (Blancher 2013), and there are local cases of Eurasian Otter and Chinese Pangolin, both assessed as High Risk species, being killed/injured by dogs (KFBG 2014, 2018).



Intentional or accidental introduction of exotic species can be harmful to both native species and ecosystems.

Key Recommendations

- More rigorous import control on the aquaculture, aquarium and pet trades; white lists with stringent guidelines should be prepared for these trades to prevent introducing harmful species that may affect Hong Kong's biodiversity.
- Explore regulations on animal release and amend Cap. 170 to include feeding bans on invasive species and feral animals.
- AFCD conducted a one-off risk assessment on invasive herpetofauna in 2018. The Government should conduct a territory-wide field study to evaluate the current situation of invasive species in both terrestrial and aquatic ecosystems, and prepare management programmes to eradicate invasive species that pose serious threats to local biodiversity, especially towards at-risk species.
- For the organisers of religious releases, targeted dialogue and education campaigns with innovative activities, such as participating in rescued wildlife release and benign fish stocking programmes, should be initiated.
- To address the issue of free-roaming dogs and cats in rural areas, responsible pet ownership should be promoted with an emphasis on the ecological impacts of these animals.

REGIONAL INFLUENCES

Other than the major local threats identified above, there are other contributing factors beyond the geographic scope of Hong Kong that could also escalate the risk of local extinction.

Climate change brings extreme weather and alters rainfall pattern, which may shift seasonal cycles and plant phenology, affecting the breeding cycles of native species, degrading critical habitats, eventually disrupting ecological relationships and food webs. Rising temperature causes shifts in species distribution, but species restricted to hilltops in Hong Kong, such as Giant Spiny Frog (*Quasipaa spinosa*), will suffer from reduced habitat availability as they are already living at local altitudinal limits and cannot move to higher elevations as the climate warms.

In a wider regional context, Hong Kong is visited by many migratory and wide-ranging species; for instance,

tens of thousands of migratory birds rely on Hong Kong as stopover site during their long-distance migrations, and some Eurasian Otters and raptors like the White-bellied Sea Eagle must roam across the political border between Hong Kong and surrounding cities. Conserving the connectivity and integrity of their transboundary habitats is crucial for the long-term survival of such species.

A few globally threatened species, such as Romer’s Tree Frog (*Liuixalus romeri*) and the Hong Kong Cascade Frog (*Amolops hongkongensis*), are classified as Low Risk in this assessment, which only considers their extinction risk within Hong Kong. While their current situations are less concerned in local context, it is important not to undermine their global status. Their global distributions are highly restricted and fragmented, making the Hong Kong population critically significant on a global scale.

Key Recommendations

- Prioritise the monitoring and, if needed, conservation intervention (e.g. managed translocation) of threatened hilltop species in Hong Kong.
- Increase public awareness on climate change impacts to local biodiversity, and how daily actions of citizens can contribute to address this global crisis.
- Mainstream the adoption of Nature-based Solutions in all development plans in Hong Kong and the Greater Bay Area.
- Collaborate with national/international partners to monitor populations of transboundary species, identify and address transboundary threats and develop joint conservation actions.

Effective conservation of Hong Kong’s threatened species requires collective aspiration, efforts and dedication from a wide range of stakeholders to address the variety of threats to local wildlife. By prioritising protection and management of imperilled habitats, amending outdated

laws and regulations, and increasing public engagement in nature conservation, it should be possible to reverse species declines. With concerted efforts and a shared societal commitment, a brighter future for Hong Kong’s biodiversity remains possible.



The mountains and streams of Starling inlet form a contiguous wildlife landscape between Hong Kong and Shenzhen.

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1 Tramway Path, Central, Hong Kong
香港中環德輔道中一號

Tel 電話 : (852) 2526 1011 Fax 傳真 : (852) 2845 2764 Email 電郵 : wwf@wwf.org.hk
Registered Name 註冊名稱 : World Wide Fund For Nature Hong Kong 世界自然 (香港) 基金會
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