33/F, Revenue Tower, 5 Gloucester Road, Wan Chai, Hong Kong
香港灣仔告士打道5號稅務大樓33樓

ACE-NC Paper 3/2018
For discussion on 16 July 2018

Compilation of the Hong Kong List of Threatened Species

PURPOSE

This paper briefs Members on the compilation of the List of Threatened Species (the List) for Hong Kong under the Hong Kong Biodiversity Strategy and Action Plan (BSAP) 2016-2021.

BACKGROUND

2. Under Action 14 of the BSAP, the Government will work together with experts to assess the conservation status of species in Hong Kong and compile the List to guide conservation actions. The assessments will make reference to the best global practices which emphasise clear documentation of scientific evidence and rigorous assessment criteria, and the assessment results will be independently reviewed. The Agriculture, Fisheries and Conservation Department (AFCD) is responsible for coordinating the task and overseeing the assessment exercise.

METHODOLOGY

3. During the process of the formulation of the BSAP, one focus group comprising relevant experts in Hong Kong (i.e. the Status and Trends and Red List Focus Group) was formed to discuss the technical issues related to species assessments. The focus group had recommended using the International

Union for Conservation of Nature (IUCN) Red List[1] Categories and Criteria for assessing the conservation status of species in Hong Kong. The focus group had also recommended that the identification of species of conservation concern in Hong Kong should take into account conservation status on broader geographic scales, in addition to the local status[2].

4. The above recommendations will be adopted in taking forward the compilation of the List under the BSAP. The IUCN Red List is well-recognised globally as an objective and scientifically robust system for classifying species in terms of their risk of extinction, with clearly defined categories and criteria, as well as guidelines for conducting assessments at both global and regional levels (**Annex A**). All assessments need to be appropriately documented and supported by the best scientific information available. Species that are considered threatened in Hong Kong, at differing degree of risks of extinction, will be identified following the guidelines for application of Red List Categories and Criteria at regional/national levels. The final List will also include native species that are considered threatened in other relevant global and regional assessments, in addition to the locally threatened species.

INSTITUTIONAL FRAMEWORK

5. AFCD, as the conservation authority of the Government, will take the ultimate responsibility in taking forward this initiative and managing the process. A management unit has been set up within AFCD to plan and coordinate assessment exercises. Responsibilities of the management unit also include organising training and meetings, ensuring correct application of categories and criteria, ensuring consistency in the assessment results among groups, publishing and maintaining updated information, as well as managing all supporting data, information and documentation.

6. Despite its small size and extent of urban development, Hong Kong is

[1] The IUCN is an international conservation organisation that has been compiling and publishing information on the risk of extinction of species since the 1960s. Earlier publications were called "Red Data Books", and following revisions and updates to the categories and criteria for classifying species, the subsequent publications were called "Red Lists".

[2] Final Report of the Status and Trends and Red List Focus Group is available at: http://www.afcd.gov.hk/english/conservation/Con_hkbsap/bsap_links_to_resources/files/Final_Report_Red_List_FG.pdf

one of the best studied areas in the region with respect to its flora and fauna. Since a large amount of surveys and research had been conducted over the past decades, the assessment process for the List would engage well-recognised experts of the respective taxonomic groups in Hong Kong. To take forward this initiative, AFCD has engaged around 100 people with relevant experience on different taxonomic groups, including AFCD officers as well as experts outside the Government, to contribute to the assessment process. The personnel to be involved in this process include 1) data compilers, who will extract biodiversity data from all relevant sources and compile the data into a standardised format; 2) assessors, who will conduct initial species assessments in accordance with the IUCN Red List assessment criteria; and c) reviewers, who will provide independent review on the scientific and technical accuracy of the initial assessments, as well as compliance with IUCN Red List guidelines. As with other similar assessments conducted around the world, this rigorous process of assessment involve experts who have good understanding of the IUCN Red List criteria and guidelines.

WORK PROGRAMME

7. Species assessment to be carried out using the IUCN Categories and Criteria involves a significant amount of manpower and work. Having considered the availability of data and expertise, current conservation concerns, as well as the timeframe for implementation of this project, it has been decided that assessment to be conducted under Hong Kong's first BSAP will cover the following major taxonomic groups: amphibians, reptiles, birds, terrestrial mammals, marine mammals, freshwater fish, marine fish, dragonflies, butterflies, horseshoe crabs, stony corals, amphioxus and vascular plants.

8. The management unit for the assessment of the List invited relevant experts to take part in this project and organised briefings for all data compilers, assessors and reviewers in April and May 2018. Two identical sessions of IUCN Red List training were conducted in May and June 2018 for those to be involved in the assessment to equip them with guidance and hands-on experience on the application of IUCN Categories and Criteria.

9. To facilitate the assessment process, data compilers will review and compile relevant data in standardised format. Assessment forms completed

by assessors and other supporting information will be circulated to a panel of reviewers for their independent review. While coordinating the process, the management unit will also conduct quality and consistency checks on the assessment results. The assessment results are expected to be published in batches. Taxonomic groups with relatively fewer numbers of species and readily available information (e.g. herpetofauna, mammals) is expected to be published by end of 2020. The results for the remaining groups are expected to be published by 2022. In the long term, the status of the species will be re-assessed at appropriate intervals to reflect changes in circumstances.

ADVICE SOUGHT

10. Members are invited to comment on the framework for compiling the List of Threatened Species for Hong Kong.

Agriculture, Fisheries and Conservation Department
July 2018

Annex A

IUCN Red List Categories and Criteria

There are nine clearly defined categories for classifying taxon in global Red List assessments (Fig. 1a). Species listed as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU) are considered threatened. In addition to the global Red List, IUCN has developed a set of guidelines for assessing species' extinction risks at the regional/national scale. The regional/national Red List categories are similar to the global Red List categories, with the addition of two categories: Regionally Extinct (RE) and Not Applicable (N/A; covering introduced and vagrant taxa that are considered not eligible for regional assessment) (Fig. 1b).

For a species to be classified as threatened, there is a range of quantitative criteria, which include reduction in population size, small geographic range and small population size (Fig. 2). Meeting any one of these criteria qualifies a species for listing at the particular level of threat.

Fig. 1a IUCN Red List Categories in Global Assessments

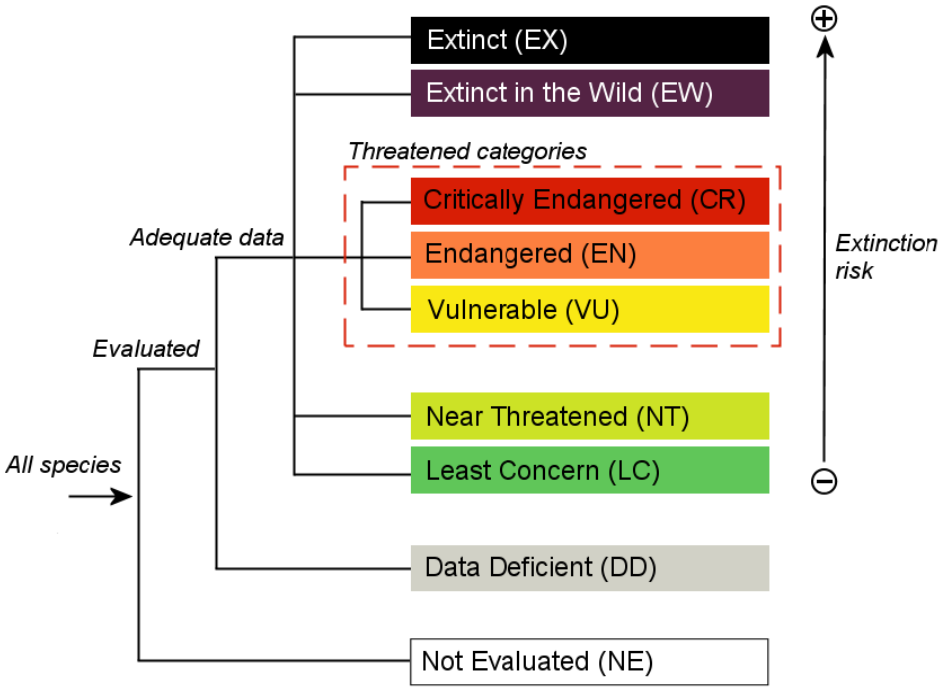

Fig. 1b IUCN Red List Categories in Regional Assessments

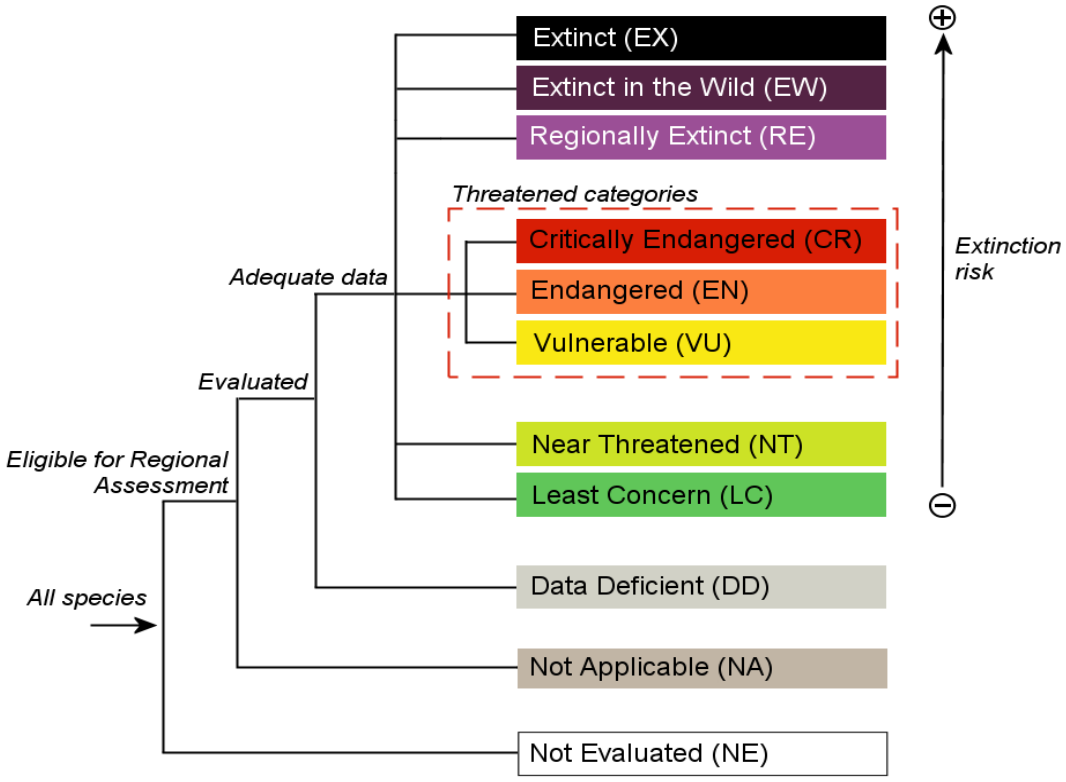

Fig. 2 IUCN Red List Criteria

SUMMARY OF THE FIVE CRITERIA (A-E) USED TO EVALUATE IF A TAXON BELONGS IN AN IUCN RED LIST THREATENED CATEGORY (CRITICALLY ENDANGERED, ENDANGERED OR VULNERABLE).[1]

A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%

A1 Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased.

A2 Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

A3 Population reduction projected, inferred or suspected to be met in the future (up to a maximum of 100 years) *[(a) cannot be used for A3].*

A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

based on any of the following:

(a) direct observation *[except A3]*

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality

(d) actual or potential levels of exploitation

(e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)

	Critically Endangered	Endangered	Vulnerable
B1. Extent of occurrence (EOO)	< 100 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented **OR** Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** area, extent and/or quality of habitat; **(iv)** number of locations or subpopulations; **(v)** number of mature individuals			
(c) Extreme fluctuations in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** number of locations or subpopulations; **(iv)** number of mature individuals			

C. Small population size and decline

	Critically Endangered	Endangered	Vulnerable
Number of mature individuals	< 250	< 2,500	< 10,000
AND at least one of C1 or C2			
C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2. An observed, estimated, projected or inferred continuing decline AND at least 1 of the following 3 conditions:			
(a) (i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(a) (ii) % of mature individuals in one subpopulation =	90–100%	95–100%	100%
(b) Extreme fluctuations in the number of mature individuals			

D. Very small or restricted population

	Critically Endangered	Endangered	Vulnerable
D. Number of mature individuals	< 50	< 250	D1. < 1,000
D2. *Only applies to the VU category* Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	-	-	D2. typically: AOO < 20 km² or number of locations ≤ 5

E. Quantitative Analysis

	Critically Endangered	Endangered	Vulnerable
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years

1 Use of this summary sheet requires full understanding of the *IUCN Red List Categories and Criteria* and *Guidelines for Using the IUCN Red List Categories and Criteria.* Please refer to both documents for explanations of terms and concepts used here.