Quadrant II – Transcript and Related Materials

Programme: Bachelor of Science (Second Year)

Subject: Zoology

Paper Code: ZOS 102

Paper Title: Wildlife and Ecotourism

Unit: II- Causes of depletion, Extinction of wildlife & Conservation Categories

Module Name: Introduction to Conservation Categories

Module No: 09

Name of the Presenter: Mr. Stephen Jonah Dias

Notes

Introduction:

Extinction is a natural phenomenon. However, in today's day and age, it has been accelerated by anthropogenic activities. Therefore, the sixth and current mass extinction event has been termed as the *"Anthropocene".* To reduce this human-influenced extinction process, it is important to assess extinction risk. Extinction risk is the *probability of losing a particular species.*

IUCN Redlist of Threatened Species:

Established in 1964, the IUCN Redlist of Threatened Species is an organisation under the International Union for Conservation of Nature (IUCN). It is headquartered in the United Kingdom and has become a global repository of the conservation status of flora and fauna.

This repository is important because it indicates the following:

a) The global conservation status of a particular species
b) Biodiversity health
c) Provides critical data on population range and size, ecology, habitat, threats, and conservation action.

Conservation Category:

A *conservation category*, also called as a *conservation status* is an indicator of how likely a particular species will go extinct. There are nine major conservation categories recognised by the IUCN Redlist of Threatened species today:

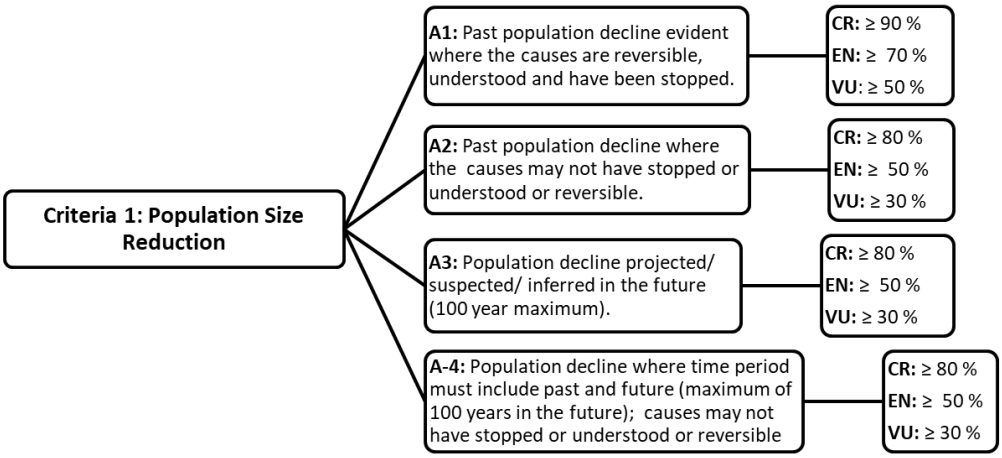
1. Extinct (EX)
2. Extinct in the Wild (EW)

3. Critically Endangered (CR)
4. Endangered (EN)
5. Vulnerable (VU)
6. Near Threatened (NT)
7. Least Concern (LC)
8. Data Deficient (DD)
9. Not Evaluated (NE)

Criteria used to evaluate extinction risk:

There are five criteria which are used to evaluate extinction risk of a particular species. They are,

i. Criteria 1: Population size reduction



This criterion has four sub criteria:

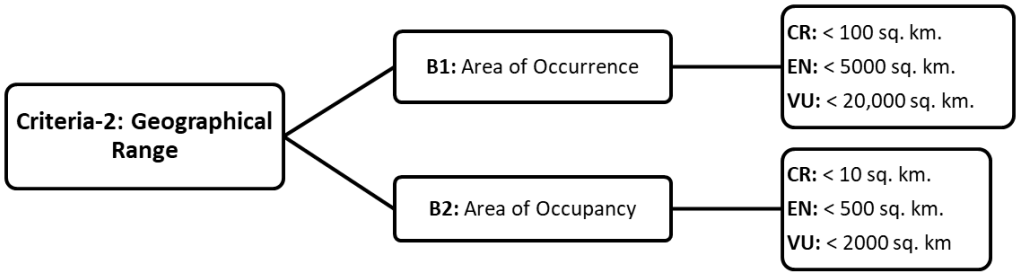
a) **A1:** If a species' population decline in the past is evident and the causes for that decline are reversible, understood and have been mitigated, then a decline ≥ 90 % would categorize the species as critically endangered, a decline ≥ 70 % would categorize the species as endangered, and a decline ≥ 50 % would categorize the species as vulnerable.

b) **A2:** If a species has undergone a population decline in the past, and the causes for that decline have not stopped or understood or reversible, then a decline ≥ 80 % would categorize the species as critically endangered, a decline ≥ 50 % would categorize the species as endangered, and a decline ≥ 30 % would categorize the species as vulnerable.

c) **A3:** If a decline in population has been projected for the future for up to a maximum of 100 years, then a decline ≥ 80 % would categorize the species as critically endangered, a decline ≥ 50 % would categorize the species as endangered, and a decline ≥ 30 % would categorize the species as vulnerable.

d) **A4:** Indicates a population decline that includes the past and future for a maximum of 100 years in the future. If a species qualifies for this sub-criterion, then a decline ≥ 80 % would categorize the species as critically endangered, a decline ≥ 50 % would categorize the species as endangered, and a decline ≥ 30 % would categorize the species as vulnerable.

ii. Criteria 2: Geographical range



This criterion has two sub-criteria:

a) B1: Area of Occurrence:

- If the area of occurrence of the species is < 100 km^2 then it is categorized as critically endangered.
- If the area of occurrence of the species is < 5000 km^2 then it is categorized as endangered.
- If the area of occurrence of the species is < 20,000 km^2 then it is categorized as vulnerable.

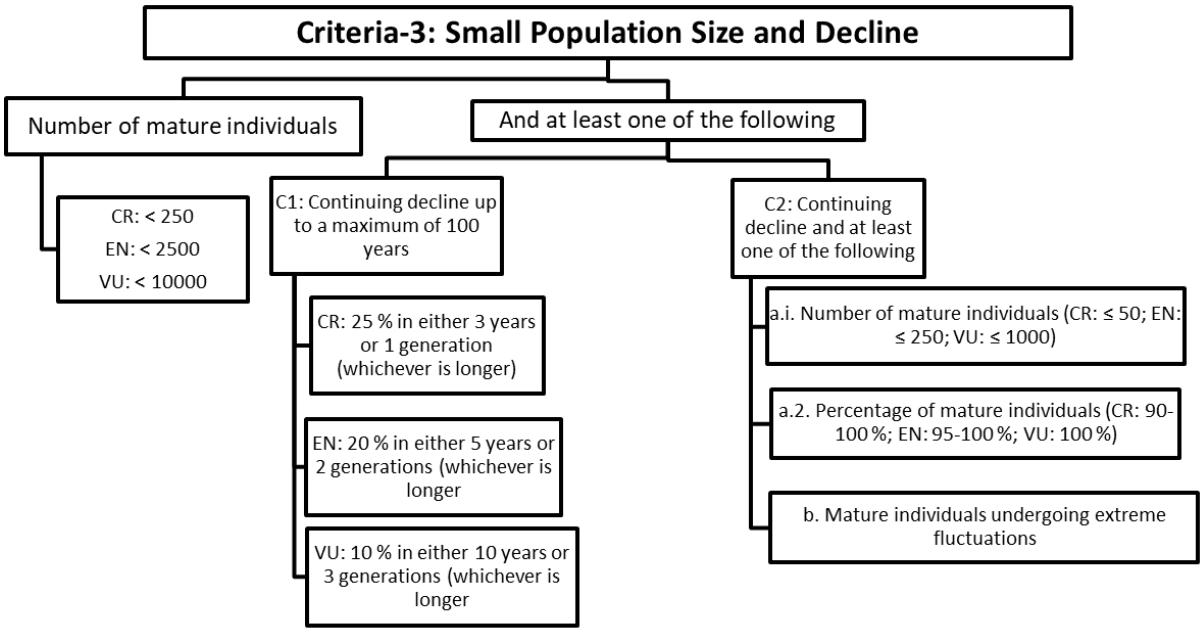
b) B2: Area of Occupancy:

- If the area of occupancy of the species is < 10 km^2 then it is categorized as critically endangered.
- If the area of occupancy of the species is < 500 km^2 , then it is categorized as endangered.
- If the area of occupancy of the species is < 2000 km^2 then it is categorized as vulnerable.

In addition to the above, the following criteria also needs to be assessed under "Criteria-2: Geographical Range".

- Number of fragmented locations: =1, ≤ 5, ≤ 10
- Continuous decline observed OR projected OR estimated in extent of occurrence and area of occupancy.
- Fluctuations observed in extent of occurrence and area of occupancy.

iii. Criteria 3: Small population size and decline



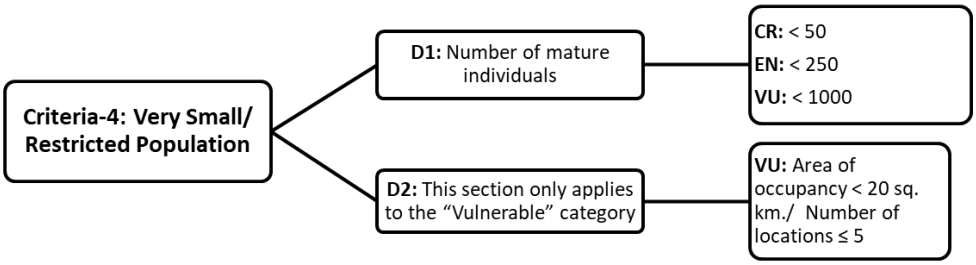
This criterion has two sub-criteria:

I. **Number of mature individuals:** If the number of mature individuals < 250, then the species is categorized as critically endangered. If the number of mature individuals < 2500, then the species is categorized as endangered. If the number of mature individuals < 10000, then the species is categorized as vulnerable.

II. **The second sub-criterion supports the first sub criterion and has to include any one of the following:**

- **C1:** The species is indicating a continuing decline for up to a maximum of 100 years. If the species is declining at a rate of 25 % in either 3 years or 1 generation (depending on which is longer), then the species is categorized as critically endangered. If the species is declining at a rate of 20 % in either 5 years or 2 generation (depending on which is longer), then the species is categorized as endangered. If the species is declining at a rate of 10 % in either 10 years or 3 generation (depending on which is longer), then the species is categorized as vulnerable.
- **C2:** This includes a continuing decline and at least one of the following:
  - ***a. i.*** Number of mature individuals: If the number of mature individuals is ≤ 50, then the species is categorized as critically endangered. If the number of mature individuals is ≤ 250, then the species is categorized as endangered. If the number of mature individuals is ≤ 1000, then the species is categorized as vulnerable.
  - ***a. ii.*** Percentage of mature individuals: If the percentage of mature individuals is between 90-100 %, then the species is categorized as critically endangered. If the percentage of mature individuals is between 95-100 %, then the species is categorized as endangered. If the percentage of mature individuals is 100 %, then the species is categorized as vulnerable.
  - ***b.*** Mature individuals are undergoing extreme fluctuations.

iv. Criteria 4: Very small/ restricted population:

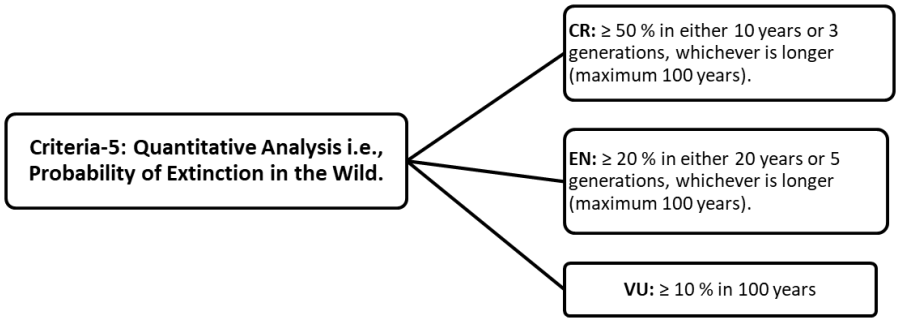


This criterion has two sub-criteria:

a) **D1: Number of mature individuals:**
   - If the number of mature individuals of a species is < 50, then the species is categorized as critically endangered.
   - If the number of mature individuals of a species is < 250, then the species is categorized as endangered.
   - If the number of mature individuals of a species is < 1000, then the species is categorized as vulnerable.

b) **D2: This sub-criterion only applies to the vulnerable category.** Here, if the area of occupancy of the species < 20 km^2 OR if the number of locations is ≤ 5, then the species is categorized as vulnerable.

v. Criteria 5: Quantitative Analysis- Probability of extinction in the wild:



a) If the probability of extinction of a species in the wild is ≥ 50 % in either 10 years or 3 generations, whichever is longer for a maximum of 100 years, then the species is categorized as critically endangered.

b) If the probability of extinction of a species in the wild is ≥ 20 % in either 20 years or 5 generations, whichever is longer for a maximum of 100 years, then the species is categorized as endangered.

c) If the probability of extinction of a species in the wild is ≥10 % in 100 years, then the species is categorized as vulnerable.

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