IUCN Red List of Threatened Species;

Categories & Criteria (EX, EW, CR, EN,

VU, NT, LC, DD)

The IUCN Red List of Threatened Species™

Strategic Plan 2017 - 2020

The IUCN Red List of Threatened Species™

IUCN SSC Species Survival Commission

What is The IUCN Red List?

Established in 1964, **The International Union for Conservation of Nature's Red List of Threatened Species** has evolved to become the world's most comprehensive information source on the global conservation status of animal, fungi and plant species.

The IUCN Red List is a critical indicator of the health of the world's biodiversity.

Far more than a list of species and their status, it is a powerful tool to inform and catalyze action for biodiversity conservation and policy change, critical to protecting the natural resources we need to survive.

It provides information about range, population size, habitat and ecology, use and/or trade, threats, and conservation actions that will help inform necessary conservation decisions.

Background & History

The IUCN Red List is used by government agencies, wildlife departments, conservation-related non-governmental organizations (NGOs), natural resource planners, educational organizations, students, and the business community.

The Red List process has become a massive enterprise involving the IUCN Global Species Program staff, partner organizations and experts in the IUCN Species Survival Commission and partner networks who compile the species information **to make The IUCN Red List the indispensable product it is today**.

To date, many species groups including mammals, amphibians, birds, reef building corals and conifers have been comprehensively assessed.

As well as assessing newly recognized species, the IUCN Red List also re-assesses the status of some existing species, sometimes with positive stories to tell.

For example, good news such as the down listing (i.e. improvement) of a number of species on the IUCN Red List categories scale, due to conservation efforts.

The bad news, however, is that **biodiversity is declining**.

Currently there are more than 105,700 species on The IUCN Red List, with more than 28,000 species **threatened with extinction**, including 40% of amphibians, 34% of conifers, 33% of reef building corals, 25% of mammals and 14% of birds.

Barometer of Life

In much the same way as a barometer measures atmospheric pressure to help us prepare for adverse weather conditions,

The IUCN Red List measures the pressures acting on species, which guides and informs conservation actions to help prevent extinctions.

This is why The IUCN Red List is often referred to as a Barometer of Life.

Progress so far

Currently, the IUCN Global Species Programme is managing data for over 105,700 species, and this number is set to increase substantially in the next few years.

Over 95,000 species are well documented, with supporting information on ecology, population size, threats, conservation actions and utilization.

There are also over 81,000 species with distribution maps.

The data held on The IUCN Red List includes non-threatened as well as threatened species, and some taxonomic groups have been completely, or almost completely assessed, including mammals, birds, amphibians, freshwater crabs, warm-water reef-building corals, sharks and rays, groupers, wrasses, lobsters, conifers and cycads.

THE GOAL: 160,000 by 2020

Our goal is to assess at least 160,000 species by 2020.

Achieving this will further improve the ability of The IUCN Red List to provide the most up-to-date information on the health of the world's biodiversity, and thereby guide critical conservation actions.

To reach 160,000 species by 2020, we need to do two things:

i) Increase the number of experts trained to carry out IUCN Red List assessments.

ii) Significantly increase the number of species being assessed each year.

The IUCN Red List grows larger with each update as newly described species and species from less well-known groups are assessed for the first time.

IUCN and its partners are working to expand the number of taxonomic groups that have full and complete Red List assessments in order to improve our knowledge of the status of the world's biodiversity.

The IUCN Red List Categories and Criteria

The IUCN Red List Categories and Criteria are intended to be an easily and widely understood system for classifying species at high risk of global extinction.

It divides species into nine categories:

Not Evaluated (NE)
Data Deficient (DD)
Least Concern (LC)
Near Threatened (NT)
Vulnerable (VU)
Endangered (EN)
Critically Endangered (CR)
Extinct in the Wild (EW)
Extinct (EX)

To date, more than 105,700 species have been assessed for The IUCN Red List.

The IUCN Red List Categories

EXTINCT (EX)

A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycles and life form.

EXTINCT IN THE WILD (EW)

A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

CRITICALLY ENDANGERED (CR)

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered, and it is therefore considered to be facing an extremely high risk of extinction in the wild.

ENDANGERED (EN)

A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild.

VULNERABLE (VU)

A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild.

NEAR THREATENED (NT)

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

LEAST CONCERN (LC)

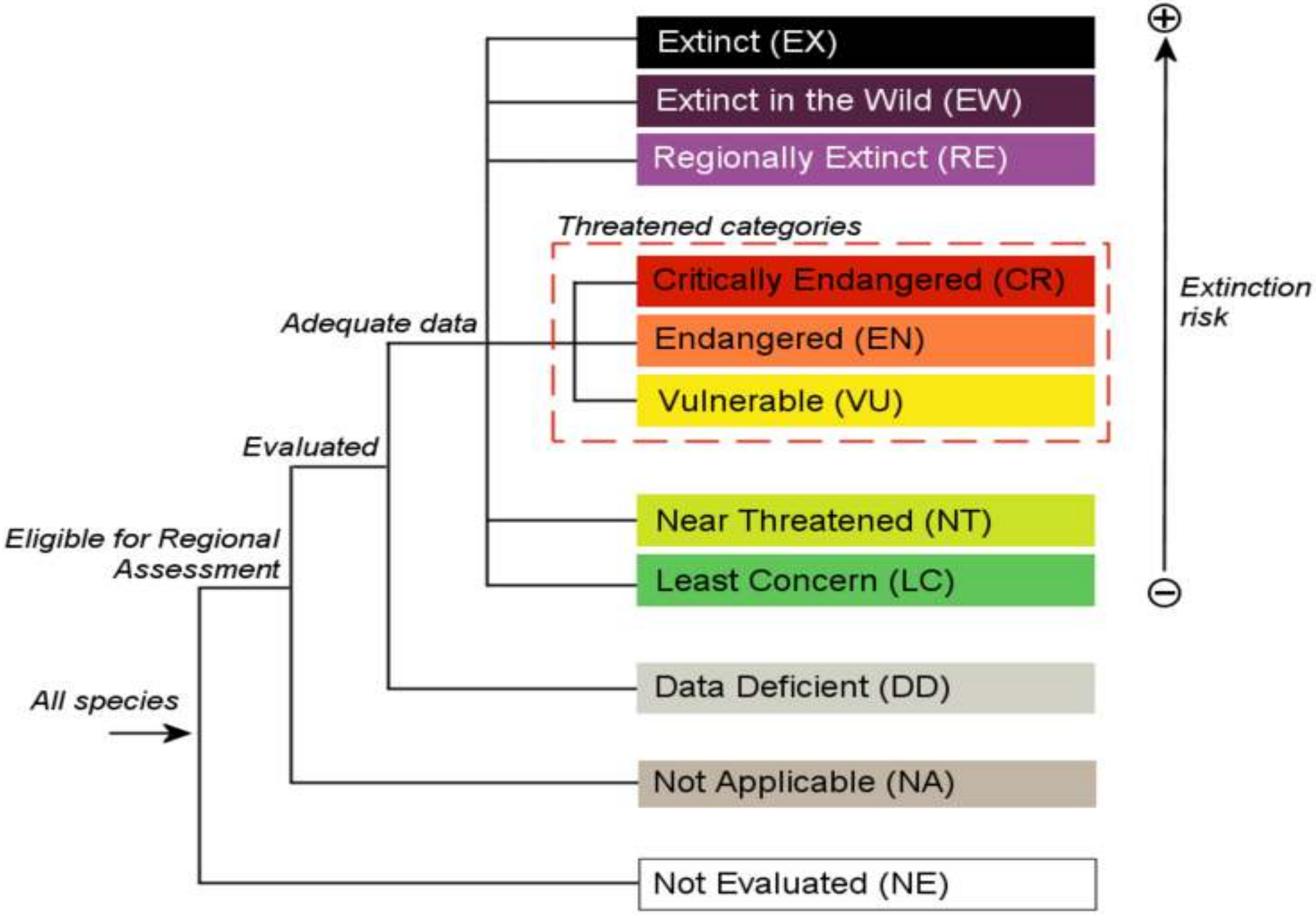
A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are often included in this category.

DATA DEFICIENT (DD)

A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care
should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, or a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

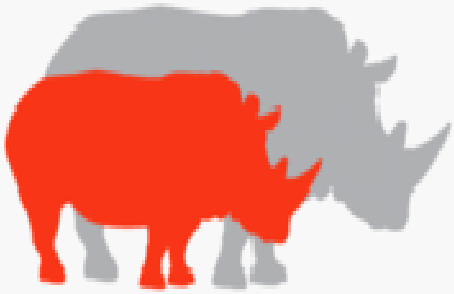
NOT EVALUATED (NE)

A taxon is Not Evaluated when it is has not yet been evaluated against the criteria.


Extinct (EX)
Extinct in the Wild (EW)
Regionally Extinct (RE)
Threatened categories
Critically Endangered (CR)
Endangered (EN)
Vulnerable (VU)
Near Threatened (NT)
Least Concern (LC)
Data Deficient (DD)
Not Applicable (NA)
Not Evaluated (NE)
Adequate data
Evaluated
Eligible for Regional Assessment
All species
Extinction risk

Nature's backbone

Vertebrates



Assessment Goal 61,635

Species Assessed 49,688 (2019)

Described Species 69,788

An estimated 99% of all organisms are

Invertebrates

Assessment Goal 45,344

Species Assessed 22,311 (2019)

Described Species 1,358,365

The Earth's lungs

Plants

Assessment Goal 38,521

Species Assessed 33,573 (2019)

Described Species 310,129

The most under-researched and under-funded

Fungi and other species groups

Assessment Goal 14,500

Species Assessed 160 (2019)

Described Species 165,305

The Classification Schemes used in IUCN Red List assessments

Threats – to record past, ongoing and future threats to a taxon.

Stresses – to record how each threat impacts a taxon.

Habitats – to record which habitats a taxon occurs in.

Conservation Actions In Place – to record what conservation actions are already in place for a taxon.

Conservation Actions Needed – to record what conservation actions are needed for a taxon.

Research Needed – to record what further research is needed on a taxon.

Use and Trade – to record how a taxon is utilised and what level of trade occurs for the taxon. A new version of this classification scheme will be posted here in due course.

Livelihoods – to record the importance of a taxon to human livelihoods.

Plant Growth Forms – to record growth or life form to enable searches on the Red List web site for particular functional groups of plants (trees, shrubs, succulents, ferns, etc.

Regional Red List Assessments

Along with assessing the risk of species becoming globally extinct,

it is also important to assess species at regional and national levels, where conservation policy is often implemented.

Red Lists that focus on specific geographically or politically defined areas are of particular importance in aiding national reporting to international conventions with specific biodiversity targets, such as the Convention on Biological Diversity (CBD)and the Sustainable Development Goals (SDGs).

Regional Red List Assessments

The Regional Guidelines are best-practice guidelines outlining the preferred approach to be followed when applying the IUCN Red List Criteria for regional or national level assessments.

They highlight various issues that may need to be addressed when compiling a regional or national Red List,

such as how to deal with taxa that have been introduced into the area, that occur only marginally within the region, or taxa that migrate to the region during non-breeding seasons.

The Regional Guidelines also bring in additional Red List Categories specifically for use for regional and national Red List assessments:

Not Applicable (NA) for taxa that occur in the region but have been excluded from the regional Red List for a specific reason;

and Regionally Extinct (RE) for taxa that are now extinct from the region but still occur in its natural range outside of the region.

GUIDELINES FOR APPLICATION OF IUCN RED LIST CRITERIA AT REGIONAL AND NATIONAL LEVELS

Version 4.0

The IUCN Red List of Threatened Species™

SSC
Species Survival Commission

Red List Authorities

Red List Authorities (RLAs) oversee the assessment of species within their remit according to the IUCN Rules of Procedure.

The role of RLAs is to ensure that all species within their remit are correctly assessed against the IUCN Red List Categories and Criteria at least once every ten years and, if possible, every five years.

The roles and responsibilities of the RLA include:

Establishing mechanisms for assessing and regularly re-assessing species.

Serving as the taxonomic authority for species falling into the remit of the RLA.

Where RLAs do not undertake assessments themselves, they may be required to review these assessments.

Each RLA has a Coordinator who is responsible for:

Overseeing and coordinating Red List activities within the RLA.

Ensuring that at least one named independent Reviewer (who was not directly involved with the assessment) agrees with the status of each taxon assessed, based on the supporting documentation provided.

Ensuring assessments are submitted to The IUCN Red List in the appropriate manner.

Red List Committee

The IUCN Red List Committee oversees and guides the work of the Species Survival Commission (SSC) on biodiversity assessments.

This includes responsibility for The IUCN Red List of Threatened Species™ and advising on the functioning of the Species Information Service (SIS): the system used to manage IUCN Red List data.

The Red List Committee sets the standards of scientific quality for the IUCN SSC's work on biodiversity assessments, develops guidelines on the application of these standards, ensures that evaluations of petitions against the listing of particular taxa on The IUCN Red List are carried out professionally and impartially, and builds collaboration with other organizations working on biodiversity assessments.

The Red List Committee includes representatives of the Red List Partnership, the IUCN Species Survival Commission, and the IUCN Global Species Programme, as well as several co-opted members.

Details on the Membership of the Red List Committee and its various Working Groups together with their respective Terms of Reference is available.

Red List Partnership

Initially formed in 2000 (as the 'Red List Consortium'), the Red List Partnership provides support for The IUCN Red List and the wider biodiversity assessments initiative.

The production of The IUCN Red List of Threatened Species™ is made possible through the active participation of the Red List Partners and their respective networks.

As a result, the growing number of species included on the Red List represents an enormous investment of time, expertise and financial resources by a large number of individuals and organizations.


IUCN
SSC
ZSL
LET'S WORK FOR WILDLIFE
BirdLife
INTERNATIONAL
BGCI
Plants for the Planet
ASU
CENTER FOR BIODIVERSITY OUTCOMES
IUCN
RED LIST
Kew
NatureServe
SAPIENZA
UNIVERSITÀ DI ROMA
CONSERVATION INTERNATIONAL
TEXAS A&M
UNIVERSITY

How the Red List is Used

Guiding scientific research

Informing policy and conventions

Influencing resource allocation

Informing conservation planning

Improving decision-making

Education and raising awareness

Contributing to human health and livelihoods

"The IUCN Red List tells us where we ought to be concerned and where the urgent needs are to do something to prevent the despoliation of this world. It is a great agenda for the work of conservationists."

Sir David Attenborough

Required and Recommended Supporting Information for all IUCN Red List Assessments

1. Scientific name
2. Higher taxonomy details (Kingdom, Phylum, Class,
Order, Family)
3. Taxonomic authorities for all specific and infra-specific names used, following the appropriate nomenclatural Rules
4. IUCN Red List Category and Criteria (including
Sub criteria) met at the highest category of threat.
5. A rationale for the Red List assessment.
6. Data for parameters triggering the Red List Criteria met at the highest Category level.
7. Countries of occurrence (for native and reintroduced taxa), including Presence and Origin coding.
8. Geo-referenced distribution data for all taxa with a known distribution
9. Direction of current population trend (stable, increasing, decreasing,
unknown)
10. Coding for occurrence in freshwater (= inland waters), terrestrial, and marine ecosystems (i.e., “System” in SIS)
11. Suitable habitats utilized (coded to lowest level in Habitats Classification
Scheme).
12. Bibliography (cited in full; including unpublished data sources but not personal
communications)
13. Names and contact details of the Assessor(s) and at least one Reviewer

Required supporting information for Red List assessments under specific conditions

1. Name of subpopulation
2. Major Synonyms
3. Plant growth forms
4. Information on the reason for change in
Red List Category of the taxon
5. Date last recorded (in the wild, if taxon survives in captivity) and details of surveys which have been
conducted to search for the taxon
6. Possibly Extinct or Possibly Extinct in the Wild tag
7. Documentation of available data, sources of uncertainty and justification for why the criteria cannot be applied; including, where appropriate, one or both of the Data Deficient tags
Unknown provenance and *Uncertain taxonomic status explains lack of data*
8. Coding as Severely Fragmented, or the number of locations
9. Generation length
10. Time period over which 3-generation decline is measured around the present.
11. The data, assumptions, structural equations, and Population Viability Analysis
model if used.
12. Coding and justification of the criteria that are nearly met or the reasons for the classification (e.g., dependence on ongoing conservation measures)
13. Taxonomic notes
14. Major threats to the taxon (coded to lowest level in Threats Classification Scheme)
15. Narrative text about the geographic range, population, habitat and ecology, and threats
16. Additional supporting information as detailed in section 2.6 of the *Documentation Standards and Consistency Checks for IUCN Red List Assessments and Species Accounts*

Recommended Supporting Information.

1. GIS distribution map using IUCN's *Standard Polygon*
and/or *Point Attributes*
2. Qualifiers (estimated, suspected, etc.) for direction of current population trend
3. Occurrence in specified sub-country units for large countries and islands far from mainland countries
4. Occurrence in terrestrial and freshwater biogeographic realms
5. Elevation or depth limits
6. Coding of Stresses and Timing for Threats
7. Narrative text about the important conservation
measures in place and needed.
8. Coding of important conservation actions in place and needed
9. Narrative text on the utilization of the taxon
10. Coding of the end use (purpose) and scale of utilization of the taxon

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.

Five criteria (A-E) used to evaluate if a taxon belongs in a threatened category (Critically Endangered, Endangered or Vulnerable).

A. Population size reduction (past, present and/or projected)

B. Geographic range size, and fragmentation, few locations, decline or fluctuations

C. Small and declining population size and fragmentation, fluctuations, or few subpopulations

D. Very small population or very restricted distribution

E. Quantitative analysis of extinction risk (e.g., Population Viability Analysis)

IUCN Species Information Service

- **Main Features of SIS**
- SIS was developed to provide a number of benefits over previous tools for conducting Red List assessments.
- The main benefits of SIS are:
- Provides a standardized data format for conducting assessments, thereby ensuring assessments use the same classification systems (for threats, habitats, etc) as well as ensuring taxonomic integrity.
- Captures comments, references, detailed data, and edit history to ensure transparency of
- assessments and facilitate evaluation.
- Provides a Red List category and criteria “calculator”, which determines the Red List category and criteria met from species information entered. This ensures consistent application of the Categories and Criteria and facilitates the evaluation process.
- As an online web application, it allows experts to collaborate remotely on assessments and provides safe, secure storage of assessment information.
- SIS can also be downloaded and used offline when no reliable internet connection is available.
- The SIS source code is open-source and free – anyone can take the SIS system and adapt it to their needs – useful for country-led national Red List assessment initiatives.