

Annex IX to ScC11 Report

REPORT ON THE IMPLICATIONS OF THE IUCN LISTING CRITERIA FOR CMS**Prepared for the Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals**

**By Barry Baker, Tara Hewitt and Robyn Bromley (Australia)
Colin Galbraith and Alison Gilmour (the United Kingdom)
in their expert capacity. ***

Background

At the 10th Meeting of the CMS Scientific Council a working group was established to consider the implications of the revised IUCN listing criteria for CMS. This is the resulting report.

Overview of the IUCN Red List System

The IUCN Red List System is a hierarchical classification system developed to assess and highlight species of animals and plants under higher extinction risk. First conceived in 1963 and originally used by the IUCN's Species Survival Commission (SSC), the IUCN Red List System has set a global standard for species listing and conservation assessment efforts. For more than 30 years SSC has been evaluating the conservation status of species and subspecies on a global scale – highlighting those threatened with extinction and promoting their conservation.

The system was developed to focus attention on conservation measures designed to protect species at risk. Over time, IUCN has recognized that a more objective and scientific system for determining threat status, as well as a more accurate system for use at the national and regional level were needed. The IUCN Red List Categories were reviewed in the early 1990s through extensive consultation and testing involving more than 800 SSC members, and the wider scientific community. This resulted in a more precise and quantitative approach that was adopted by IUCN in 1994 (IUCN 1994).

Since their adoption in 1994, the Categories have become widely recognized internationally, and they are now used in a range of publications and listings produced by IUCN, as well as by numerous governmental and non-governmental organizations. Such broad and extensive use revealed the need for a number of improvements, and SSC was mandated by the 1996 World Conservation Congress to conduct a review of the system, principally to ensure the criteria were applicable to a wide range of organisms, especially long-lived species, and species under intensive management. It was also considered desirable to ensure the highest standards of documentation, information management, and scientific credibility were embodied in the resulting document.

The Species Survival Commission completed an extensive review of the categories and criteria used to list species on the IUCN Red List in 2000. The review, involving broad consultation with users and organizations from around the world, has produced a clearer, more open, and easy-to-use system. With particular attention paid to marine species, harvested species, and population fluctuations, the review has refined the effectiveness of the Red List Categories and Criteria as indicators of extinction risk. Extensive

* The report was revised by the Working Group and endorsed by the 11th Meeting of the Scientific Council.

consultation and testing in the development of the system strongly suggest that it is now robust across most organisms.

The revised Categories were adopted by IUCN Council in February 2000 and have now been published (IUCN 2001). SSC intend to leave this system unchanged for a period long enough to allow genuine changes in conservation status to be monitored. IUCN believes that stability in the categorization system is essential if the IUCN Red List is to be used as a reliable indicator of trends in biological diversity.

Description of the listing categories

IUCN (2001) recognizes the following categories of threat:

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 cycle 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 (see Section V of [Attachment A](#)), 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 (see Section V of [Attachment A](#)), and it is therefore considered to be facing a very high risk of extinction on 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 (see Section V of [Attachment A](#)), 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 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 well be 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, and 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 has not yet been evaluated against the criteria.

Listing to one of the above categories requires that a taxon be assessed against five quantitative criteria – meeting any one of these criteria qualifies a taxon for listing at that level of threat. The five criteria are:

Reduction in population size;

Geographic range limited either in extent of occurrence or the area occupied;

Declining population size;

Small population size; and

a high probability of extinction.

In Attachment A the five criteria are described in more detail with respect to their relevance to the CR, EN and VU categories of threat.

The criteria can be applied at any taxonomic unit at or below the species level. The criteria may also be applied within any specified geographical area, although in such cases special notice should be taken of point 14, Attachment A, and Gardenfors *et. al.* 2001 (Attachment B).

The IUCN Red List Categories are intended to be an easily and widely understood system for classifying species at high risk of global extinction. The general aim of the system is to provide an explicit, objective framework for the classification of the broadest range of species according to their extinction risk.

The changes now embodied in IUCN (2001) do not represent a significant departure from the principles and structure of IUCN (1994). They have been made largely to provide clarification and guidance to users, and to ensure wide application across most taxonomic groups of plants and animals. In order to assist those who are familiar with IUCN (1994), a summary of the changes to the criteria are described at Attachment C.

The implications for CMS

The revised categories and criteria provide for rigorous and scientifically defensible information. The new documentation standards, which provide guidance to scientists in their analyses, bring greater credibility and transparency to listings. It is considered that the IUCN categories and criteria are now sufficiently developed and widely understood as to recommend them for use in providing guidance in determining the appropriateness of listing a taxon to CMS Appendix I. In the case of evaluating proposals for listing species or populations to Appendix II, the IUCN categories and criteria may provide some guidance but fail to fully address the CMS ‘criteria’ as set out in paragraph 1 of Article IV.

“Appendix II shall list migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement” (our emphasis).

Issues that need to be considered by Scientific Council are discussed below:

1. *Changes to the IUCN categories and criteria*

At the 10th Scientific Council concerns were raised that developing and transitional countries in particular had difficulty keeping up with changes in the IUCN categories, and that CMS had only just approved the first version. Concern was also voiced that as data on numbers and distribution were not always readily

available, implementing the latest version may be difficult. Similar concerns were raised during the recent review and we believe they have been addressed, particularly in clarifying how to deal with uncertainty when applying the criteria (see Annex 1 of IUCN 2001). We consider IUCN (2001) is a well developed system of categories and criteria that:

- can be applied consistently by different people;
- improves objectivity by providing users with clear guidance on how to evaluate different factors which affect the risk of extinction;
- provides a system which facilitates comparisons across widely different taxa;
- gives people using threatened species lists a better understanding of how individual species were classified; and
- delivers greater transparency to decision-making as it requires documentation of the assessment process, including statement of assumptions, with clear guidelines for dealing with uncertainty in levels of knowledge for a taxon.

To assist users in assessing species against the criteria, a software programme *RAMAS Red List version 2.0* has been developed, which is endorsed by the SSC. *RAMAS Red List* implements the rules as used by the IUCN, and also allows explicitly incorporating uncertainties in the input data. Input data such as the number of mature individuals can be specified either as a number, or as a range of numbers, or a range of numbers plus a best estimate. The programme propagates these uncertainties. Depending on the uncertainties, the resulting classification can be a single category, or a range of plausible categories. An added benefit of the programme is the facility that allows the programme outputs for a taxon assessed to be printed, thus facilitating documentation of the assessment procedure. Further information on this programme can be found at <http://www.ramas.com/redlist.htm>.

2. *Scale of applicability*

The IUCN Red List Categories and Criteria were designed for global taxon assessments. However, there is often interest in applying them to subsets of global data, especially at species population, and geographic levels (regional, national or local). In applying the Categories and Criteria it is important to refer to the guidelines prepared by the IUCN/SSC Regional Applications Working Group (current version at [Attachment B](#)). When applied at national or regional levels there is a need to recognize that a global category may not be the same as a national or regional category for a particular taxon. For example, taxa classified as Least Concern globally might be Critically Endangered within a particular region where numbers are very small or declining, perhaps only because they are at the margins of their global range.

Provided that the regional population to be assessed is isolated from conspecific populations outside the region, the criteria of the IUCN Red List can be used without modification. The extinction risk of an isolated population is identical to that of an endemic taxon, and in these situations the criteria can be used with unaltered thresholds at any geographical scale.

When the criteria are applied to part of a population defined by a geo-political border or to a regional population occasionally interchanging individuals with other populations beyond the border, the thresholds listed under each criterion will be incorrect because the unit being assessed is not the same as the actual population. As a result, the estimate of extinction risk is likely to be inaccurate.

In the past CMS has listed both species and populations on Appendices I and II. If CMS is to use the IUCN Red List criteria to assist in assessment of future nominations, it will be important to recognize the context of the nomination (species or population) and to apply the principles embodied in Gardenfors *et. al.* (2001) as appropriate for where the nomination is regionally based.

3. *What Categories of Threat Should Qualify a Taxon to be Considered as ‘Endangered’ for the Purposes of Appendix I?*

We consider the criteria for nominating and listing a species to CMS Appendix I or II could be made clearer. At present the guidance provided is contained in the legal, rather than scientific, language of the CMS. For example in the case of Appendix I it is - “1. *Appendix I shall list migratory species which are endangered*” and “2. *A migratory species may be listed in Appendix I provided that reliable evidence, including the best scientific evidence available, indicates that the species is endangered.*”

The guidance for Appendix II is - “*Appendix II shall list migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement*”.

Adoption of the IUCN criteria as a decision support tool in the assessment for CMS listing to Appendix I may prove useful. The criteria would provide clarity and transparency in decision-making and provide clear definitions of the various listing criteria. To assist CMS Scientific Council in conceptualising how this could operate, we provide the following proposal:

IUCN criteria assessments for migratory species	Qualifies for CMS
CR, EN, VU	Appendix I and/or Appendix II
NT	Appendix II
All other categories	Qualifies for Appendix II if a taxon’s conservation status would significantly benefit from international cooperation that could be achieved by an international agreement.

Recommendation

That the Scientific Council considers the suggestions in this paper and recommends to the CMS Conference of Parties that the Scientific Council uses the IUCN Red List Categories 2001 as a **decision support tool** in assessing the conservation status of listing proposals of migratory taxa or populations to Appendix I and II. Scientific Council will use the IUCN Red List on the following basis:

- (a) IUCN Categories of Threat for CR, EN and VU **to contribute towards** the assessment of listing a migratory taxa or population to Appendix I in recognition that the CMS Appendix I taxa or populations are broadly defined as “endangered”. These categories of threat may also **contribute towards** the assessment of listing taxa or species to Appendix II;
- (b) IUCN Category of Threat for NT **to contribute towards** the assessment of listing a migratory species to Appendix II; and
- (c) Given that Article IV of the convention does not require a taxon or population to have an unfavourable conservation status to be listed to Appendix II, taxa or populations not meeting any of the IUCN categories of threat CR, EN, VU or NT may be considered for listing provided that there is explicit justification to do so.

References

- IUCN. 2001. *IUCN Red List Categories and Criteria: Version 3.1*. IUCN Species Survival Commission. IUCN: Gland, Switzerland and Cambridge, UK.
- IUCN. 1994. *IUCN Red List Categories: Version 2.3*. IUCN Species Survival Commission. IUCN: Gland, Switzerland.
- Gardenfors U., Hilton-Taylor C., Mace G. and J. P. Rodriguez. 2001. *The Application of IUCN Red List Criteria at Regional Levels*. Conservation Biology 15: 1206-1212.