Categories and Criteria for Status Assessment used by the Committee on the Status of Species at Risk in Ontario (COSSARO)

March 2014

In December 2013, COSSARO passed a motion to develop and use a single set of criteria for species assessment. The draft criteria were provided to stakeholders for comment, and then the criteria were subsequently finalized. The criteria are largely based on those used by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); however they have been modified to include some features of the former COSSARO criteria that are not reflected in the COSEWIC criteria.

The COSEWIC criteria are used to guide status assessment of wildlife species in Canada and are based on IUCN Red List categories (IUCN 2001[1]). For definitions of terms and other relevant information, see COSEWIC's Assessment Process and Criteria.

Indicator	Endangered	Threatened
A. Provincial Decline in Total Number of Mature Individuals		
A1. An observed, estimated, inferred or suspected reduction in total number of mature individuals over the last 10 years or 3 generations, whichever is the longer, where the causes of the reduction are: clearly reversible **and** understood **and** ceased, based on (and specifying) any of the following: a) direct observation b) an index of abundance appropriate to the taxon c) a decline in index of area of occupancy, extent of occurrence and/or quality of habitat d) actual or potential levels of exploitation e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites, disturbance, climate change or other threats.	Reduction of ≥ 70%	Reduction of ≥ 50%

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[1] IUCN. 2001. IUCN Red List Categories and Criteria: Version 3.1. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, U.K.

Indicator	Endangered	Threatened
A2. An observed, estimated, inferred or suspected reduction in total number of mature individuals over the last 10 years or 3 generations, whichever is the longer, where the reduction or its causes may not have ceased **or** may not be understood **or** may not be reversible, based on (and specifying) any of (a) to (e) under A1.	Reduction of ≥ 50%	Reduction of ≥ 30%
A3. A reduction in total number of mature individuals, projected or suspected to be met within the next 10 years or 3 generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of (b) to (e) under A1.	Reduction of ≥ 50%	Reduction of ≥ 30%
A4. An observed, estimated, inferred, projected or suspected reduction in total number of mature individuals over any 10 year or 3 generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased **or** may not be understood **or** may not be reversible, based on (and specifying) any of (a) to (e) under A1.	Reduction of ≥ 50%	Reduction of ≥ 30%
B. Small Distribution Range and Decline or Fluctuation		
B1. Extent of occurrence estimated to be	< 5,000 km²	< 20,000 km²
and/or		
B2. Index of area of occupancy estimated to be	< 500 km²	< 2,000 km²
and (for either B1 or B2) estimates indicating at least two of a) to c):		
a) Severely fragmented **or** known to exist at:	≤ 5 locations	≤ 10 locations
b) Continuing decline, observed, inferred or projected, in any of (i) extent of occurrence, (ii) index of area of occupancy, (iii) area, extent and/or quality of habitat, (iv) number of locations or subpopulations, (v) number of mature individuals.		

Indicator	Endangered	Threatened
c) Extreme fluctuations in any of (i) extent of occurrence, (ii) index of area of occupancy, (iii) number of locations or subpopulations, (iv) number of mature individuals.		
C. Small and Declining Number of Mature Individuals		
C. Total number of mature individuals estimated to be:	< 2,500	< 10,000
and one of either C1 or C2:		
C1. An estimated continuing decline in total number of mature individuals of at least:	20% within 5 years or two generations, whichever is longer, up to a maximum of 100 years in the future	10% within 10 years or three generations, whichever is longer, up to a maximum of 100 years in the future
or		
C2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals		
and at least one of the following:		
a.(i) No subpopulation estimated to contain	> 250 mature individuals	> 1000 mature individuals
or		
a.(ii) one subpopulation has	≥ 95% of all mature individuals	100% of all mature individuals
or		
b. There are extreme fluctuations in number of mature individuals.		

Indicator	Endangered	Threatened
D. Very Small or Restricted Total Ontario Population		
D. Total number of mature individuals very small or restricted in the form of either of the following:		
D1. Population estimated to have	< 250 mature individuals	< 1000 mature individuals
or		
D2. **For Threatened only:** Ontario population with a very restricted index of area of occupancy (typically < 20 km²), number of locations (typically ≤5) such that it is prone to the effects of human activities or stochastic events within a very short time period (1-2 generations) in an uncertain future, and is thus capable of becoming endangered, extirpated or extinct in a very short time period.	Does not apply	Index of area of occupancy < 20 km² **or** ≤ 5 locations
E. Quantitative Analysis		
E1. Quantitative analysis (population projections) showing the probability of extinction or extirpation in the wild is at least	20% within 20 years or 5 generations, whichever is longer, up to a maximum of 100 years	10% within 100 years

Special Concern:

Those wildlife species that are particularly sensitive to human activities or natural events but are not Endangered or Threatened wildlife species.

Wildlife species may be classified as Special Concern if:

a) the wildlife species has declined to a level of abundance at which its persistence is increasingly threatened by genetic, demographic or environmental stochasticity, but the decline is not sufficient to qualify the wildlife species as Threatened; or

b) the wildlife species may become Threatened if factors suspected of negatively influencing the persistence of the wildlife species are neither reversed nor managed with demonstrable effectiveness; or

c) the wildlife species is near to qualifying, under any criterion, for Threatened status; or

d) the wildlife species qualifies for Threatened status but there is clear indication of rescue effect from extra-limital subpopulations.

Examples of reasons why a wildlife species may qualify for "Special Concern":

- a wildlife species that is particularly susceptible to a catastrophic event (e.g., a seabird population near an oil tanker route); or
- a wildlife species with very restricted habitat or food requirements for which a threat to that habitat or food supply has been identified (e.g., a bird that forages primarily in old-growth forest, a plant that grows primarily on undisturbed sand dunes, a fish that spawns primarily in estuaries, a snake that feeds primarily on a crayfish whose habitat is threatened by siltation; or
- a recovering wildlife species no longer considered to be Threatened or Endangered but not yet clearly secure.

Examples of reasons why a wildlife species may not qualify for "Special Concern":

- a wildlife species existing at low density in the absence of recognized threat (e.g., a large predatory animal defending a large home range or territory); or
- a wildlife species existing at low density that does not qualify for Threatened status for which there is a clear indication of rescue effect.

Status Modifiers:

1. A species may be up-graded to a higher classification if its NatureServe Global Rank ranges anywhere from G1 to G3[2] <u>AND</u> its Ontario Conservation Responsibility is ≥ 25%. Ontario Conservation Responsibility is based on the abundance of the species within Ontario compared to its global abundance. If abundance is unknown, then the range of the species within Ontario is compared to its global range.

2. A species may be down-graded to a lower classification if rescue effect is applicable. The potential for "rescue" from extra-regional subpopulations (e.g., from the United States or a different province or from another Designatable Unit within Ontario) is evaluated based on information in the status report. The rescue

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[2] G3G4 is not applicable for use with this modifier.

effect is the immigration of gametes or individuals that have a high probability of reproducing successfully, such that extirpation or decline of a wildlife species, or some other Designatable Unit, can be mitigated. If the potential for rescue is high, the risk of extirpation may be reduced, and the status may be down-graded. COSSARO will address this by applying guidelines developed by COSEWIC for this purpose.

Guidelines for use of Extinct or Extirpated

A wildlife species may be classified as Extinct or Extirpated from Ontario if:

- there exists no remaining habitat for the wildlife species and there have been no records of the wildlife species despite recent surveys; or
- 50 years have passed since the last credible record of the wildlife species, despite surveys in the interim; or
- there is sufficient information to document that no individuals of the wildlife species remain alive.

Guidelines for use of Data Deficient

Data Deficient should be used for cases where the status report has fully investigated all best available information yet that information is insufficient to: a) satisfy any criteria or assign any status, or b) resolve the wildlife species' eligibility for assessment.

Examples:

- Records of occurrence are too infrequent or too widespread to make any conclusions about extent of occurrence, population size, threats, or trends.
- Surveys to verify occurrences, when undertaken, have not been sufficiently intensive or extensive or have not been conducted at the appropriate time of the year or under suitable conditions to ensure the reliability of the conclusions drawn from the data gathered.
- The wildlife species' occurrence in Ontario cannot be confirmed or denied with assurance.

Data Deficient should **not** be used if: a) the choice between two status designations is difficult to resolve by COSSARO, or b) the status report is inadequate and has not fully investigated all best available information (in which case the report should be rejected), or c) the information available is minimally sufficient to assign status but inadequate for recovery planning or other such use.