

Backgrounder

Species Assessments in Canada

Understanding the different terms used in species assessments

There are three primary institutions that assess the conservation status of Canadian species: 1) NatureServe Canada, 2) Committee on the Status on Endangered Wildlife in Canada (COSEWIC) and 3) International Union for Conservation of Nature (IUCN).

NatureServe Canada and its programs¹ (including the General Status program (CESCC 2017)) rank the general status species occurring in Canada. These ranks are updated every five years and provide input to prioritize more detailed species assessments. NatureServe programs in Canada (i.e., provincial and territorial Conservation Data Centres and the NatureServe Canada national office) rank species in Canada, covering a wide range of taxa, including many that have not been assessed by the IUCN nor COSEWIC. In total, the NatureServe system has been used to rank the status of almost 30,000 Canadian species at the national level through the General Status Program. Species are also assessed at the subnational level by provincial/territorial Conservation Data Centres and globally by NatureServe.

Detailed species assessments in Canada for those at highest risk of extinction are conducted by every 10 years by the **Committee on the Status of Endangered Wildlife in Canada** (COSEWIC²). Under the federal *Species at Risk Act* (SARA), COSEWIC is charged with completing extinction risk assessments.

COSEWIC uses a modified **IUCN Red List** process, which can be cross-walked to the IUCN categories. COSEWIC assessments combine the IUCN Critically Endangered and Endangered Categories into “Endangered” and the word “Threatened” is used in place of the IUCN category Vulnerable. NatureServe assesses species and ecosystems using a different system from the IUCN Red List (Master et al. 2012) and is necessarily less detailed; the thresholds are, however, similar and the outcomes of the two systems can be cross-walked (Table 1).

¹ <http://www.natureserve.org/biodiversity-science/publications/natureserve-conservation-status-assessments-methodology-assigning>

² <https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html>

Table 1. Cross-walk of terms used in Canada for species assessments.

IUCN (Global) Status	COSEWIC (National) Status	NatureServe (and General Status) Ranks
Critically Endangered+Endangered	Endangered	G1 for Global Ranks or N1 for National Ranks
Vulnerable	Threatened	G2 for Global Ranks or N2 for National Ranks

Assessments of taxa below the species level

“Wildlife species³” under the Canadian *Species at Risk Act* (SARA) are defined as “subspecies, varieties or geographically or genetically distinct population”; it is legally required to identify and protect habitat for those that are listed as endangered and threatened.

Guided by this definition of wildlife species in Canada, COSEWIC assesses extinction risk for species and, where warranted, units below the level of species (Designatable Units⁴). Designatable units are units below the species level that are considered discrete and significant and are assessed, listed and protected as “wildlife species” in Canada. Designatable Units are assessed for eligibility against guidelines that first evaluate discreteness and then significance of the proposed unit (COSEWIC 2018). After COSEWIC assessment these units are eligible for legal listing and management under the *SARA* as “Wildlife Species”⁵. COSEWIC has assessed 1064 taxa, including species and other designatable units.

COSEWIC’s Designatable Units are similar to the units used in the United States under the Endangered Species Act (ESA) called “Distinct Population Segments”. For example, the USA used the concept of the ESU (Evolutionarily Significant Units) to define Distinct Population Segments for the assessment of Pacific Salmon species. In some cases, COSEWIC evaluates and adopts subspecies as Designatable Units.

Subpopulation-level assessments by the IUCN Red List have also been undertaken for some taxa. Some of these assessments have resulted in units very similar to the designatable units used by COSEWIC (e.g., Pacific Salmon assessments in the U.S.). However, as the COSEWIC guidelines make clear, designatable units should not be conflated with management or demographic units, nor should they be defined on the basis of threats, or relative conservation status. For example, 44 subpopulations were assessed individually using the IUCN Red List Criteria for isolated subpopulations [IUCN 2012]), yet at least some would not have met the tests for discreteness and evolutionary significance. This means that

³ We recognize that this definition of wildlife species is inherently confusing and have put it in quotation marks to indicate that it is being used in an unusual way. It should be noted that ‘wildlife species’ is a term defined in legislation in Canada (SARA) and so its use for the purposes of Canadian KBAs will be most consistent and familiar.

⁴ Species, subspecies, variety, or geographically or genetically distinct population that may be assessed by COSEWIC, where such units are both discrete and evolutionarily significant.

⁵ Confusingly, DU’s legally listed under the SARA are called “populations”, a use of the word ‘population’ that is very different from its biological meaning.

global (Red List) subpopulation-level assessments should be scrutinized before being adopted in a similar fashion to Canadian (COSEWIC) designatable units.

References

Canadian Endangered Species Conservation Council [CESCC]. (2016). Wild species 2015: The general status of species in Canada. Ottawa: National General Status Working Group

IUCN. (2012). Guidelines for application of IUCN red list criteria at regional and national levels: version 4.0. Gland, Switzerland and Cambridge, UK: IUCN

Master, L., Faber-Langendoen, D., Bittman, R., Hammerson, G., Heidel, B., Ramsay, L., . . . Tomaino, A. (2012). NatureServe conservation status assessments: factors for evaluating species and ecosystem risk. NatureServe, Arlington, VA, 76.

For more information

This backgrounder is based on information prepared by Dave Fraser and others to inform species criteria for Key Biodiversity Areas.

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