



COSEWIC
Committee on the Status of
Endangered Wildlife in Canada

COSEPAC
Comité sur la situation des
espèces en péril au Canada

Climate Change Matters for Species at Risk

As world leaders assemble in Paris to address climate change, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) met in Ottawa to assess the conservation status of the latest group of Canadian wildlife species. This assessment process is an essential part of efforts to maintain and restore Canadian biodiversity.

Over the last decade, climate change has increasingly been implicated as a pervasive threat in the assessment of many species, from polar bears to sweat bees.

What is COSEWIC?

Under the federal *Species at Risk Act*, COSEWIC is recognized as the science advisory group that recommends Canadian species for Extirpated, Endangered, Threatened, Special Concern or Not at Risk status. COSEWIC's assessments inform legal listing, protection and recovery action. The Committee bases its assessments and recommended risk status on the best available scientific, community and Aboriginal Traditional Knowledge.

Since 1977, COSEWIC has assessed 957 Canadian species: 316 Endangered, 170 Threatened, 206 Special Concern, 23 Extirpated (no longer found in Canada), 173 Not at Risk, 54 Data Deficient, and 15 Extinct. At the recent Ottawa meeting, the Committee evaluated the status of 19 species.

Climate change a recurring theme

A changing climate was identified as a primary threat to some species' survival. For Peary Caribou, a subspecies that dwells only in Canada's High Arctic Islands, there are concerns about food sources being covered by ice from increasingly frequent and severe weather events. In addition, information from Aboriginal sources has highlighted the growing effects of reduced sea ice, which disrupt caribou migration and movement patterns. However, some limited population recovery has happened since the



Peary Caribou © Morgan Anderson

mid-1990s when significant die-offs in parts of its range followed large ice storms. Previously assessed as Endangered, COSEWIC reassessed the Peary Caribou as Threatened at the Ottawa meeting due to ongoing concerns about the future welfare of this animal.

Intensity of other threats is compounded by climate change

In addition to the direct impacts of climate change on most species, a changing climate may also indirectly exacerbate pre-existing threats. The Lake Huron Grasshopper, found only in Ontario's Great Lakes region, has already disappeared from several sites after development and intensive recreational use damaged much of its dune habitat. This grasshopper now faces the added threat of climate-linked lowering of water levels, which will further reduce the quality of its habitat.

Shifts in climate may also facilitate the spread of invasive species, which already threaten many native plants and animals. The Hemlock Woolly Adelgid, an insect accidentally introduced from Japan, has already caused widespread mortality of hemlock trees in eastern North America. Rising average temperatures are expected to facilitate its spread into Canada, which would directly affect the breeding habitat of the Louisiana Waterthrush, a bird that is closely associated with hemlock along clear, coldwater streams in southern Ontario. Due in large part to the



Flooded Jellyskin © Samuel Brinker

escalating nature of this threat, this wood-warbler was reassessed from Special Concern to Threatened. Similarly, warmer conditions may hasten the spread of the invasive Emerald Ash Borer, a beetle from Europe that kills native ash trees. These trees are important hosts of the Flooded Jellyskin, which was assessed as Special Concern. Canada is the global stronghold for this lichen, which has declined or disappeared elsewhere in the world.

A new mandate: Science guides decision making

Along with combating climate change, Canada's new Minister of the Environment and Climate Change is charged with enhancing the protection and recovery of Canada's species at risk. Further, the value of scientific advice is highlighted throughout the new mandates of this and other federal departments.

COSEWIC, which is made up of approximately 50 recognized experts, must reassess each species at risk every 10 years. In this way it evaluates the deterioration or improvement of status and measures the success of species recovery efforts. Achieving this objective relies on regular gathering of information on species' occurrence, population trends, and threats.

For example, the Spotted Gar is a member of an ancient group of fishes with a known historical distribution along the north shores of lakes Erie and Ontario. It has been assessed four times by COSEWIC since 1983. Recent thorough sampling has resulted in our current understanding that the species has an extremely limited range, having disappeared from some areas, and faces growing threats. All this new information supported an upgraded assessment from Threatened to Endangered. The assessment of the Rainbow, a freshwater mussel, likewise benefited from extensive surveys since its last assessment in 2006. These new data reveal that the Rainbow is more abundant than previously understood and pinpoint key habitats in the headwaters of several Ontario rivers. This new information resulted in a status downgrade from Endangered to Special Concern, but several threats persist, including agricultural effluent and the invasive Zebra Mussel.

In contrast to the situation for the Spotted Gar and Rainbow, there has been little new research for many species at risk. This limits recovery action and makes reassessments difficult, hampering our ability to detect when the status of species worsens and requires attention.

This week, world leaders will seek to devise strategies for managing the impacts of climate change and its implications for our economy and human health. Meeting this challenge requires consideration of how climate change affects biodiversity -- so well illustrated by the diverse and growing array of Canadian species at risk. In addition to the changing climate, Canadian species continue to face a wide range of other threats including over-harvesting, invasive species, and habitat loss and degradation. When combating climate change and other threats, all Canadians have a role to play in successfully protecting and recovering Canada's species at risk and rich and valuable biodiversity.

Next meeting

COSEWIC's next scheduled wildlife species assessment meeting will be held in April 2016.

About COSEWIC

COSEWIC assesses the status of wild species, subspecies, varieties, or other important units of biological diversity, considered to be at risk in Canada. To do so, COSEWIC uses scientific, Aboriginal traditional and community knowledge provided by experts from governments, academia and other organizations. Summaries of assessments are currently available to the public on the COSEWIC website (www.cosewic.gc.ca) and will be submitted to the Federal Minister of the Environment in fall 2016 for listing consideration under the *Species at Risk Act* (SARA). At this time, the status reports and status appraisal summaries will be publicly available on the Species at Risk Public Registry (www.sararegistry.gc.ca).

At its most recent meeting, COSEWIC assessed 19 wildlife species in various COSEWIC risk categories, including 4 Endangered, 9 Threatened, and 5 Special Concern. In addition to these wildlife species that are in COSEWIC risk categories, COSEWIC assessed 1 wildlife species as Not at Risk.

COSEWIC comprises members from each provincial and territorial government wildlife agency, four federal entities (Canadian Wildlife Service, Parks Canada Agency, Fisheries and Oceans Canada, and the Canadian Museum of Nature), three Non-government Science Members, and the Co-chairs of the Species Specialist and the Aboriginal Traditional Knowledge Subcommittees.

Definition of COSEWIC terms and status categories:

Wildlife Species: A species, subspecies, variety, or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus, that is wild by nature and is either native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.

Extinct (X): A wildlife species that no longer exists.

Extirpated (XT): A wildlife species that no longer exists in the wild in Canada, but exists elsewhere.

Endangered (E): A wildlife species facing imminent extirpation or extinction.

Threatened (T): A wildlife species that is likely to become Endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

Special Concern (SC): A wildlife species that may become Threatened or Endangered because of a combination of biological characteristics and identified threats.

Not at Risk (NAR): A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

Data Deficient (DD): A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.

Species at Risk: A wildlife species that has been assessed as Extirpated, Endangered, Threatened or Special Concern.

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<p>For inquiries on freshwater fishes: (Little Quarry Lake Benthic Threespine Stickleback, Little Quarry Lake Limnetic Threespine Stickleback, River Redhorse, Spotted Gar)</p> <p>Dr. John R. Post University of Calgary Telephone: 403-220-6937 Fax: 403-289-9311 jrpost@ucalgary.ca</p>	<p>For inquiries lichens: (Flooded Jellyskin)</p> <p>Dr. David H. S. Richardson Saint Mary's University Telephone: 902-496-8174 Fax: 902-420-5261 david.richardson@smu.ca</p>

<p>For inquiries on terrestrial mammals: (Gray Fox, Peary Caribou)</p> <p>Dr. Justina C. Ray Wildlife Conservation Society Canada Telephone: 416-850-9038 (ext. 22) jray@wcs.org</p>	<p>For inquiries on molluscs: (Rainbow)</p> <p>Dr. Joseph Carney Lakehead University Telephone: 403-762-0864 jcarney@lakeheadu.ca</p>
<p>For inquiries on reptiles: (Eastern Yellow-bellied Racer, Lake Erie Watersnake, Western Yellow-bellied Racer)</p> <p>Dr. Kristiina Ovaska Biolinx Environmental Research Ltd. Telephone: 250-727-9708 kovaska@shaw.ca</p>	<p>For inquiries on plants: (Bear's-foot Sanicle, Colicroot, Common Hoptree, Giant Helleborine)</p> <p>Bruce Bennett Yukon Conservation Data Centre Telephone: 867-667-5331 Fax: 867-393-6263 brbennett@klondiker.com</p>
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Further details on all wildlife species assessed can be found on the COSEWIC website at:
www.cosewic.gc.ca