

COSEWIC Annual Report

presented to

The Minister of the Environment

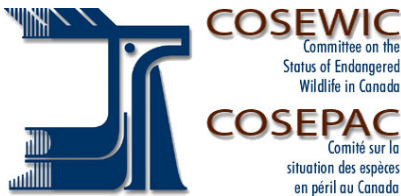
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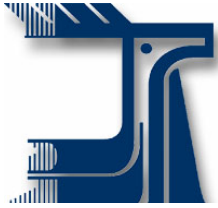
**The Canadian Endangered
Species Conservation Council
(CESCC)**

from

**The Committee on the Status
of Endangered Wildlife in Canada
(COSEWIC)**

2006





COSEWIC
(COMMITTEE ON THE
STATUS OF ENDANGERED
WILDLIFE IN CANADA)

COSEPAC
(COMITÉ SUR LA SITUATION
DES ESPÈCES EN PÉRIL
AU CANADA)

August 31, 2006

The Honourable Rona Ambrose
Minister of the Environment
Les Terrasses de la Chaudière
10 Wellington Street
28th Floor
Gatineau, Québec
K1A 0H3

Dear Minister Ambrose,

Please find enclosed the 2005-2006 Annual Report of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which I respectfully submit to you and to the Canadian Endangered Species Conservation Council (CESCC), thus fulfilling the obligations to COSEWIC under Section 25 and 26 of the *Species at Risk Act* (SARA).

I wish to express my sincere thanks for the support your ministry has provided to COSEWIC and to the conservation and protection of species at risk in Canada. I also want to acknowledge with sincere thanks the exemplary contributions of Dr. Marco Festa-Bianchet who was Chair of COSEWIC for the past four years and during most of the period encompassed by this report. Lastly, I wish to draw your attention to some of the key activities undertaken by COSEWIC during the past year.

Species Status Assessments: In April 2006, COSEWIC assessed/reassessed the status of 68 wildlife species, based on 64 Status Reports, more than 10% of which were unsolicited. The species assessment results can be summarized as follows: Extirpated – 1; Endangered – 28; Threatened – 10; Special Concern – 15. Eleven species were assessed as Not at Risk and 3 were examined and found to be Data Deficient. Following the reassessment of the Dwarf Woolly-heads (*Psilocarphus brevissimus*) in April 2006, the Plants and Lichens Species Specialist Subcommittee revised the 2001 Tall Woolly-heads (*Psilocarphus elatior*) status report to remove all references to the misidentified plants of the Prairie Population. This population consists of plants that were recently confirmed to belong to the Prairie Population of the Dwarf Woolly-heads. Furthermore, due to this population's misidentification, COSEWIC recommends that the Prairie Population of Tall Woolly-heads be deactivated and that the Pacific Population of the Tall Woolly-heads be renamed Tall Woolly-heads.

Aboriginal Traditional Knowledge (ATK) Subcommittee: COSEWIC is very pleased to report that the inaugural meeting of the ATK Subcommittee (SC) was held in February, 2006. The ATK SC co-chairs (Henry Lickers, Larry Carpenter) welcomed 10 new members who were nominated by their national organizations (the Assembly of First Nations, Inuit Tapiriit Kanatami, the Métis National Council, the Native Women's Association of Canada, and the Congress of Aboriginal Peoples). The request that these individuals be appointed to the ATK SC was communicated to you on 30 March 2006. The ATK SC unanimously recommended that Mr. Lickers (Mohawk Council of Akwesasne) be renewed as co-chair for a further term of four years. Mr. Carpenter (Wildlife Management Advisory Council, Northwest Territories), who has been nominated for appointment as a member of NACOSAR, will continue to serve as co-chair until the end of his current term of office (December 31, 2007). The ATK SC has established working groups to develop ATK processes and protocols, and to produce a prioritized list of species of interest/concern to Aboriginal Peoples. The Subcommittee has also identified members who will contribute to ATK inclusion on COSEWIC Species Specialist Subcommittees (SSCs).

Emergency Assessments: In response to a request for an emergency assessment of the Sakinaw Lake population of sockeye salmon, Dr. Festa-Bianchet established an Emergency Assessment Subcommittee (EAS) which then assessed the status of the Sakinaw Lake sockeye, based on information available through 2005. As communicated to you on 20 April 2006, the EAS unanimously recommended that the conservation status of the Sakinaw Lake population of Sockeye salmon warrants an Emergency Listing under Section 29(1) of SARA.

Referral of Species to COSEWIC: Based on recommendations reported in the Canada Gazette in December 2005, the Governor-in-Council (GIC) referred six species back to COSEWIC for further consideration, in accordance with Section 27(1.1)(c) of SARA: Atlantic Cod (Arctic Population), Bocaccio, Cusk, Harbour Porpoise, Lake Winnipeg Physa, and Shortjaw Cisco. At its species assessment meeting in April 2006, COSEWIC, in consultation with the appropriate SSCs, discussed at length the reasons, as reported in the Gazette, for sending these species back to COSEWIC and decided on the following courses of action. A new status report will be commissioned for Shortjaw Cisco. COSEWIC confirms its original assessment of the Lake Winnipeg Physa as an Endangered Species and of the Harbour Porpoise (Northwest Atlantic Population) as a Species of Special Concern. Regarding the other species, COSEWIC concluded that there was no substantive basis for the criticisms of these assessments reported in the Canada Gazette. Coupled with the fact that COSEWIC had not been provided with any new information pertaining to these species in the 3 to 4 years that had passed since these species were originally assessed, COSEWIC concluded that there was no basis for a review of its original assessments.

I note also that you have recommended (Canada Gazette, June 2006) that Verna's Flower Moth be referred back to COSEWIC, and that the GIC has accepted your recommendation (Canada Gazette, August 2006). After consulting with the

Arthropods SSC, COSEWIC will discuss this species referral at its Species Assessment Meeting in November 2006.

I would like to draw your attention to a matter of considerable concern to COSEWIC, given its bearing on COSEWIC's ability to fulfill its mandate, as specified by SARA, in a timely and expeditious manner. To date, based on the information reported in the Canada Gazette, COSEWIC has been requested to review its original assessments primarily because of the reported availability of new information that would significantly affect the assessment of species status (e.g., Bocaccio) or because of disagreement with COSEWIC's assessment (e.g., Verna's Flower Moth, Cusk). In the former case, the species referrals were not accompanied by the new information alluded to in the Gazette. Indeed, the time between the initial recommendation for these species referrals and the communication of the new information to COSEWIC exceeded 6 months. Delays such as these negatively influence COSEWIC's ability to fulfill its role in the implementation of SARA.

I note further that disagreements between COSEWIC's assessments and those that other individuals or agencies might make are understandable and not unexpected. But disagreement with COSEWIC's assessments does not constitute a substantive basis for referring species back to COSEWIC, further delaying the decision as to whether to include or exclude species in Schedule 1 of SARA.

Streamlining Reassessments: COSEWIC has developed and approved a protocol for streamlining the reassessment of species as required by SARA every 10 years. As detailed in Appendix IV of the enclosed report, the streamlining process will be effective for those species for which there is unanimity, among the responsible SSCs, COSEWIC members from relevant range jurisdictions, Wildlife Management Boards (WMBs), and Recovery Teams, that the status of the species is to remain unchanged. Under these circumstances, the responsible SSC will update the living status report document with new information, seeking input from COSEWIC members from range jurisdictions, from WMBs, and from the Recovery Teams. The 'in-house' update report will then form the basis on which COSEWIC will assess the species. COSEWIC's protocol is submitted herein for approval by CESSC.

Incorporation of Community Knowledge (CK): COSEWIC has developed a procedure for better incorporating CK into its species status assessments. Potential holders of CK are identified by SSCs, range jurisdictions, and status report writers, and COSEWIC then communicates with these parties and provides interim status reports to those who express an interest in reviewing them. COSEWIC has also updated its web site to better inform potential holders of CK of the various means by which they can contribute knowledge to the assessment process.

Designatable Units (DUs): To increase the consistency with which it assigns status to DUs, COSEWIC has revised its Guidelines for Recognizing Designatable Units below the Species Level to better describe the circumstances under which COSEWIC may combine designatable units when assigning status. It is proposed that when a

COSEWIC assessment has been conducted using DUs below the species level, and when adjacent DUs are classified as having the same status on the basis of the same criteria, then COSEWIC may apply a single status assessment to those units if a single assessment better addresses the conservation status of the units that are combined. COSEWIC's suggested revision is submitted in the enclosed report (Appendix V) for approval by CESCC.

Habitat Change / Ecosystem Approach: In collaboration with the Province of British Columbia, COSEWIC undertook a project to document historical changes in habitat in the Okanagan. A similar project, focusing on the native habitat of the Prairies, will be initiated with the Province of Alberta. COSEWIC has also established a working group to examine how an ecosystem approach might be used as a tool in assessing the status of species that share habitat or common threats.

I would be pleased to elaborate further on any of the points discussed above.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'J. Hutchings', with a stylized, flowing script.

Jeffrey Hutchings
Chair of COSEWIC

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ITEM I - COSEWIC ACTIVITIES

1. Species Assessment Meeting – Spring, 2006

Date: April 23-28, 2006

Location: Cypress Hills Interprovincial Park, Saskatchewan
(hosted by both the Province of Saskatchewan and the Province of Alberta).

Attendance

Members - 45 members/alternates

Secretariat Staff – 10

Observers – 17 (8 Aboriginal Traditional Knowledge (ATK) Subcommittee members, 2 from the Canadian Wildlife Service (CWS) Prairie and Northern Region, 2 from CWS Headquarters, 1 from Canadian Wildlife Federation, 2 from Fisheries and Oceans Canada, 2 Métis elders from the local area)

Teleconferences:

As in previous years, at the end of each species assessment meeting, COSEWIC held a teleconference with the Canadian Wildlife Directors Committee, followed by one with the Wildlife Management Boards (WMBs) to inform all jurisdictions about the assessments. For the first time this year, the National Aboriginal Council on Species at Risk (NACOSAR) was included in the teleconference with the WMBs.

COSEWIC Non-government Member / Members at Large:

COSEWIC decided to rename “members at large” (previously also called non-government members) as “non-government science members” in all communications.

2. Summary of the Species Assessment Meeting

In April 2006, COSEWIC assessed/ reassessed the status of 68 wildlife species (species, subspecies and populations) based on 64 Status Reports, of which seven were unsolicited.

The species assessment results include the following:

Extirpated: Atlantic Salmon, Lake Ontario population

Endangered: Ord's Kangaroo Rat, Pacific Water Shrew, Burrowing Owl, Ivory Gull, Vesper Sparrow *affinis* subspecies, Lake Erie Watersnake, Western Painted Turtle, Pacific Coast population, Atlantic Salmon, Inner Bay of Fundy populations, Speckled Dace, White Shark, Atlantic population, Aweme Borer, Eastern Persius Duskywing, Five-spotted Bogus Yucca Moth, Gold-edged Gem, Half-moon Hairstreak, Non-pollinating Yucca Moth, Blue-grey Taildropper Slug, Mapleleaf Mussel, Saskatchewan-Nelson Population, Rainbow Mussel, American Columbo, Brook Spike-primrose, Cherry Birch, Coast Microseris, Contorted-pod Evening-primrose, Dwarf Woolly-heads, Southern Mountain population, Rough Agalinis, Short-rayed Alkali Aster, Seaside Centipede Lichen.

Threatened: Northern Fur Seal, Golden-winged Warbler, Northern Saw-whet Owl *brooksi* subspecies, Carmine Shiner, Chinook Salmon, Okanagan population, Shortfin Mako, Atlantic population, Mapleleaf Mussel, Great Lakes- Western St. Lawrence population, Bolander's Quillwort, Green-scaled Willow, Smooth Goosefoot.

Special Concern: Atlantic Walrus, Harbour Porpoise, Northwest Atlantic population, Nuttall's Cottontail *nuttallii* subspecies, McCown's Longspur, Rusty Blackbird, Louisiana Waterthrush, Western Painted Turtle, Intermountain-Rocky Mountain population, American Eel, Blue Shark, Atlantic population, Deepwater Sculpin, Great Lakes-Western St. Lawrence populations, River Redhorse, Sonora Skipper, Dwarf Woolly-heads, Prairie population, Cryptic Paw, Ghost Antler.

In addition, 11 species were assessed as Not at Risk and 3 were examined and found to be Data Deficient.

As of May 2006, the COSEWIC assessment results includes 529 species in various categories, including 205 endangered species, 136 threatened species and 153 species of special concern. In addition, 22 species are extirpated (no longer existing in the wild in Canada) and 13 are extinct.

See Appendix I for the COSEWIC Press Release from the April, 2006 Species Assessment Meeting .

3. Important Notes Regarding Status Assessments:

The reassessment of the Lake Sturgeon (*Acipenser fulvescens*) that was scheduled for the April 2006 COSEWIC meeting was deferred so that the basis for delineating designatable units could be better documented. An update status report to support COSEWIC's previous assessment from May 2005 is currently not available. COSEWIC will defer forwarding its assessment of the Lake Sturgeon to the Minister of the Environment in consideration of being added to Schedule 1 of SARA until it approves an update status report.

The reassessment of the Westslope Cutthroat Trout (*Oncorhynchus clarkii lewesi*) that was scheduled for the April 2006 COSEWIC meeting was deferred and the report withdrawn until there is a resolution of eligibility of populations to be assessed. A status report to support COSEWIC's previous assessment from May 2005 is currently not available. COSEWIC will defer forwarding its assessment of Westslope Cutthroat trout to the Minister of the Environment in consideration of it being added to Schedule 1 of SARA until it approves a status report.

The Status of Dwarf Woolly-heads (*Psilocarphus brevissimus*) was reassessed at the April 2006 COSEWIC meeting. Two populations were recognized: Dwarf Woolly-heads, Prairie population was assessed as Special Concern; Dwarf Woolly-heads, Southern Mountain population was assessed as Endangered. The Dwarf Woolly-heads was first assessed by COSEWIC as Endangered in Canada in 2003. However, because the original status report failed to note the presence of the Prairie Population, which is present at numerous sites in southeastern Alberta and southwestern Saskatchewan, COSEWIC requested that an update report be prepared for an early re-evaluation of the species' conservation status which was done in April 2006.

In May 2006, following the reassessment of the Dwarf Woolly-heads (*Psilocarphus brevissimus*) and at the request of COSEWIC, the vascular plants specialists of the Plants and Lichens Subcommittee revised the 2001 Tall Woolly-heads (*Psilocarphus elatior*) status report to remove all references to the misidentified plants of the Prairie Population. Accordingly, as the Prairie Population of Tall Woolly-heads never existed, it was deactivated and the Pacific Population of the Tall Woolly-heads has been renamed Tall Woolly-heads.

Two species from SARA's Schedule 2 were reassessed by COSEWIC in April 2006, namely the Great Lakes Deepwater Sculpin (*Myoxocephalus thompsonii*) reassessed as Special Concern (and now identified as Great Lakes-Western St. Lawrence populations) and the Lake Erie Watersnake (*Nerodia sipedon insularum*), reassessed as Endangered. There is only one species from SARA's Schedule 2 left to be reassessed by COSEWIC, the Blackfin Cisco (*Coregonus nigripinnis*) and COSEWIC expects to reassess this species before June 2007 (deadline of the extension).

4. Species Assessments returned by the Minister to COSEWIC for further information or consideration:

The assessments returned to COSEWIC for further consideration - the Atlantic Cod, Arctic population (*Gadus morhua*) the Bocaccio Rockfish (*Sebastes paucispinis*), the Cusk (*Brosme brosme*), the Lake Winnipeg Physa (*Physa* sp.), the Harbour Porpoise, Northwest Atlantic population, (*Phocoena phocoena*) and the Shortjaw Cisco (*Coregonus zenithicus*) - were discussed at the COSEWIC Species Assessment Meeting in April, 2006, following which the Chair of COSEWIC wrote to the Minister of the Environment (May 24, 2006) to communicate COSEWIC's responses to each of these species referrals.

5. Emergency Assessment:

On February 10, 2006, COSEWIC received a request for an emergency assessment of the Sakinaw Lake population of sockeye salmon, *Oncorhynchus nerka*. This request followed two previous assessments of this population by COSEWIC. Both assessments resulted in a status of 'Endangered', but the population was not listed under SARA.

The Sakinaw Lake population was deemed a designatable unit by COSEWIC on the basis of unique genetic and biological characteristics. COSEWIC conducted an emergency status assessment of the population in October 2002 and designated it as Endangered. During its Species Assessment Meeting in May 2003, COSEWIC re-examined the status of Sakinaw sockeye on the basis of a new status report, and confirmed its status as Endangered because of a precipitous decline of 87-99% in the number of spawners over three generations (12 years). Only 14-122 fish per year returned to spawn between 1999 and 2002. Given the extremely small number of adults, the population was considered to be at imminent risk of extinction from a number of threats, including but not limited to, over-exploitation, impediments to spawning migration and ecological impacts to the lake environment.

The new request for an emergency assessment included new information about the number of adult salmon that returned to spawn in 2004 and 2005. The Chair of COSEWIC established an Emergency Assessment Subcommittee (EAS), following the COSEWIC Operations and Procedures Manual. He informed the Minister of the Environment on February 23, 2006, that an Emergency Assessment was underway. The COSEWIC EAS considered this information, as well as information obtained from Fisheries and Oceans Canada (DFO) about recovery activities recently implemented for Sakinaw sockeye salmon, and estimated exploitation rates for the population in 2004 and 2005. The EAS discussed all available information in two teleconferences held in February and April 2006.

The new information revealed that the number of returning mature sockeye was 99 (45 females, 54 males) in 2004, and 27 (13 females, 14 males) in 2005. Population abundance appears to have stabilized since the mid-1990's (with the annual fluctuations typical of sockeye populations), although at a critically low level. Abundance remains two orders of magnitude below levels observed until the mid-1980's. The EAS acknowledged the recovery plan put in place by DFO, which includes extensive fishery closures to limit exploitation in mixed-stock fisheries, habitat enhancement and monitoring initiatives, and a gene banking programme to breed Sakinaw sockeye in captivity. The EAS noted that it is too soon for the effectiveness of these measures to be evaluated, and that COSEWIC's mandate is limited to an assessment of current status. Sakinaw sockeye remain subject to harvest in mixed-stock fisheries. Harvest rate estimates in 2004 and 2005 were subject to a high degree of uncertainty, but the best estimate of the exploitation rate in 2004 (15%) exceeded the target rate in the management plan of 10-12%, while the estimated exploitation rate in 2005 was 4%. On the basis of all available information, and in particular based on the critically low abundance of mature adults, the COSEWIC EAS concluded that the risk of extinction remains very high for Sakinaw sockeye, and was unanimous in its assessment of the population as Endangered.

The EAS was also unanimous in its recommendation that the conservation status of the Sakinaw Lake population of Sockeye salmon warrants an Emergency Listing under Section 29(1) of the *Species at Risk Act*.

This was communicated to the Minister of the Environment in a letter dated April 20, 2006.

6. Species Selected for Status Report Preparation to be included in the Next Call for Bids Fall 2006

COSEWIC's process for determining the species for which status reports are to be commissioned was described in the 2005 Report to CESSC. This procedure was followed during the 2005-2006 year, and at the April 2006 COSEWIC meeting, 11 species from COSEWIC's candidate list were chosen for status report commissioning in the Fall of 2006. In addition, 16 species were identified as requiring update status reports. Three other species that had been included in previous COSEWIC Calls for Bids are to be recommissioned.

See Appendix II for a list of these species.

7. Annual Subcommittee Meetings:

Aboriginal Traditional Knowledge Subcommittee

All members of the ATK Subcommittee (ATK SC) and the Chair of COSEWIC participated in the first ATK SC meeting held February 27-28, 2006 in Kelowna, British Columbia. The ATK SC co-chairs welcomed 10 new members who were nominated by their national organizations (the Assembly of First Nations, Inuit Tapiriit Kanatami, the Métis National Council, the Native Women's Association of Canada and the Congress of Aboriginal Peoples). It was unanimously decided by the ATK SC members that Henry Lickers of the Mohawk Council of Akwesasne, co-chair, be recommended for renewal for a further four-year term from January 1, 2007 to December 31, 2010. Larry Carpenter, the other co-chair, from the Wildlife Management Advisory Council of the Northwest Territories, will continue until the end of his current term of office, December 31, 2007.

The Chair of COSEWIC provided the Minister of the Environment the list of the following members of the ATK SC for appointment with terms to be in effect until December 31, 2009.

Members

Dan Benoit	Seven Sisters Falls, Manitoba
Dean Trumbley	Armstrong, British Columbia
Jason Harquail	Fredericton, New Brunswick
Dr. Donna Hurlburt	Caledonia, Nova Scotia
Sue Chiblow	Sault Ste. Marie, Ontario
Jeannette Armstrong	Penticton, British Columbia
Ron Gruben	Inuvik, Northwest Territories

Norma Kassi	Whitehorse, Yukon
Gabriel Nirlungayuk	Rankin Inlet, Nunavut
Josephine Mandamin	Thunder Bay, Ontario

ATK SC members who will contribute to ATK inclusion on COSEWIC Species Specialist Subcommittees were identified. Two working groups were established to develop ATK processes and protocols and to produce a prioritized list of species of interest/concern for Aboriginal Peoples. A number of ATK Subcommittee members attended a portion of the COSEWIC Species Assessment Meeting which took place in late April at Cypress Hills Interprovincial Park, Saskatchewan.

Species Specialist Subcommittees:

Species Specialist Subcommittee meetings take place annually in different locations in Canada or, alternatively, may be held via teleconference. During these meetings, observers are invited to attend and sometimes a public information session occurs. Important issues during these meetings include the results of the most recent COSEWIC Species Assessment Meeting, status reports in preparation, results of public calls for bids for the preparation of status reports, including updates, review of candidate lists of species proposed for assessment, results of the public calls for membership, update on COSEWIC Operations and Procedures, orientation of new members and special projects and plans.

Indicated below are the names of the COSEWIC Species Specialist Subcommittees and, where relevant, a summary of special activities, projects and plans undertaken by the subcommittee.

COSEWIC is very grateful for the important work of the Species Specialist Subcommittee members who provide their time and expertise on a volunteer basis.

Amphibians & Reptiles Specialist Subcommittee

No special projects

Arthropods Specialist Subcommittee

- The Subcommittee is continuing its work on the prioritization scheme for butterflies.
- A working group was established to consider Subcommittee priorities for the next decade. The working group decided that the Subcommittee required new expertise in Orthoptera, Coleoptera, Arachnids and continuing expertise in Odonata and Lepidoptera so as to deal with major insect groups in a comprehensive way. Regional coverage across Canada was also considered important.

Birds Specialist Subcommittee

The Subcommittee agreed to oversee the completion by the summer of 2006 of a database/matrix indicating the status of Canadian birds to be used to identify candidate species.

Freshwater Fishes Specialist Subcommittee

- A review of the Freshwater Ecological Areas was proposed, particularly with reference to further delineation of Area 13-Western Arctic, which could be further defined as two areas. Following completion of a study of the existing protocol, further discussion of this issue will take place at the next meeting. It was agreed that the name for Area 10 should be changed to Great Lakes, Upper St. Lawrence, rather than Great Lakes, Western St. Lawrence.
- The Whitefish Designatable Units project will be put to a call for bids in the 2006/07 fiscal year.
- The Subcommittee intends to commence production of background summaries for all species on the Candidate species list. It is hoped that the project will be completed within two years.

Marine Fishes Specialist Subcommittee

The Subcommittee has been using different approaches to establishing candidate and priority lists for Atlantic and Pacific species. In the Pacific, RAMAS software was applied to a wide range of species and those identified as priorities were put forward for assessment. The final report of the RAMAS project was received in February 2006. In the Atlantic, species were identified mainly on the basis of temporal changes in fisheries-independent trawl survey catch rates.

At the Subcommittee meeting, it was concluded that the Subcommittee should attempt to devise a system for identifying candidate and priority species which would work for all coasts. The RAMAS software was suggested for all coasts, but although this method has many advantages (consistency in particular) the results from this type of algorithm-based approach can be difficult to interpret when quality of information available varies among species. A suggested alternative approach was, to (a) identify priority groups based on life history and ecological characteristics, (b) tabulate life history and ecological characteristics, decline rates and other relevant information for species in those groups, and then c) use the results to identify priorities. The priority groups to be considered, in the first instance: (1) anadromous species; (2) elasmobranchs; (3) species of high maximum age; and (4) species of high maximum length. The Subcommittee decided to develop this approach further and a member was tasked to take the lead on further development. Results from the Pacific RAMAS project are available and can be compared with results from alternative approaches. The Subcommittee noted that status reports are in preparation for most Pacific species identified as high priority and for which data are available.

Marine Mammals Specialist Subcommittee

No special projects were undertaken. However, the Subcommittee decided to initiate a reassessment of the Northwest Atlantic Harbour Porpoise population in response to the Governor in Council's decision to return the initial assessment to COSEWIC for reconsideration.

Molluscs Specialist Subcommittee

A set of guidelines for terrestrial molluscs was proposed for use with other groups of molluscs.

The Subcommittee plans to develop:

- a candidate list for the land snails of Ontario and Quebec
- French common names for all molluscs on the candidate list
- a list of French common names for the freshwater gastropods with the marine and terrestrial species to follow if feasible
- methodologies for identifying and prioritizing candidate species of molluscs.

Plants & Lichens Specialist Subcommittee

- Using information provided by the National General Status database, the Vascular Plants Specialists will undertake a further review of the current extensive candidate list of vascular plants.
- The work to update the moss prioritization database is completed, and work has begun to develop the prioritization list.
- Efforts to develop a lichen prioritization database and list is ongoing.

Terrestrial Mammals Specialist Subcommittee

No special projects.

ITEM II – ELECTION OF CHAIR OF COSEWIC

Following procedures set out in the COSEWIC Operations and Procedures Manual, a nomination Committee was struck in May, 2005, in preparation for the election of a new Chair of COSEWIC, as Dr. Marco Festa-Bianchet's second term as Chair of COSEWIC was scheduled to conclude at the end of the April, 2006, Species Assessment Meeting. Dr. René Belland, co-chair of the COSEWIC Plants and Lichens Specialist Subcommittee, chaired the Selection Committee. A number of nominations were received but subsequently all nominees withdrew with the exception of one nominee, Dr. Jeffrey Hutchings, non-government science member, from Dalhousie University.

At the Species Assessment Meeting in April, 2006, Dr. René Belland presented Dr. Hutchings as the candidate for the position of Chair of COSEWIC and Dr. Hutchings then spoke to the members about how his knowledge, experience and commitment to the work of COSEWIC would contribute to his ability to chair the committee. The members voted

and, following the election, Dr. Hutchings was proclaimed Chair of COSEWIC for a two-year term of office to take effect May 1, 2006.

The members congratulated Dr. Hutchings on his election as Chair and highly praised Dr. Marco Festa-Bianchet for his outstanding contribution to COSEWIC as Chair of the committee over the past four years.

ITEM III - COSEWIC MEMBERSHIP

Membership Changes:

For Information:

See Appendix III for a list of current and proposed members.

For Approval:

a) Members from Jurisdictions (Provincial/Territorial/Federal)

As Diane Amirault, one of the two COSEWIC members from the Canadian Wildlife Service (CWS) has resigned, CWS has submitted the name of Alain Branchaud as the new CWS member on COSEWIC.

Dwayne Sabine from the New Brunswick Department of Natural Resources has also resigned and his proposed replacement is Pascale Giasson, manager of their Species at risk Program.

Bill Watkins, from the Wildlife and Ecosystem Protection Branch, Manitoba Conservation, has been proposed to replace James Duncan who has signaled his intention to retire from COSEWIC.

Curriculum vitae of proposed members are on record with the COSEWIC Secretariat.

b) Co-chair, Aboriginal Traditional Knowledge Subcommittee

A biosketch is herein provided for Mr. Henry Lickers who was recommended by the ATK Subcommittee to continue as co-chair for a further term of four years effective January 1, 2007, subject to appointment by the Minister of the Environment.

c) Co-chairs of Species Specialist Subcommittees / Non-government Science Members

New /Renewed members were selected as a result of a process that was initiated with a January 2006 public call for members.

Biosketches are herein provided for the following nominees submitted for consideration and review by CESCC and subsequent appointment by the Minister of the Environment effective January 1, 2007:

Co-chair, Amphibians & Reptiles Specialist Subcommittee – Dr. Ronald Brooks

Co-chair, Arthropods Specialist Subcommittee – Dr. Laurence Packer

Co-chair, Birds Specialist Subcommittee – Dr. Marty Leonard

Co-chair, Molluscs Specialist Subcommittee – Mr. Robert Forsyth

Non-government science member – Dr. Jeannette Whitton

All memberships are for a four year term.

See Appendix IV for biosketches of new/renewed COSEWIC members.

ITEM IV - COSEWIC OPERATIONS AND PROCEDURES

Revised Definition – Data Deficient Category:

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

Approach to Streamlining Reassessments:

In recent years, the CESCC has identified as a priority for COSEWIC the development of an approach to streamlining status reassessments especially in view of the requirement under the *Species at Risk Act* to review the classification of each species at risk at least once every 10 years.

A working group was struck to work on this task in May, 2005, and in April, 2006, COSEWIC approved an approach to streamlining species reassessments.

See Appendix V submitted for your approval.

Incorporation of Community Knowledge into the Assessment Process:

As approved by COSEWIC in May 2005 and following the recommendations of its Community Knowledge Working Group, COSEWIC undertook the following steps to better incorporate community knowledge into the assessment process:

- developed a procedure to provide the interim species status reports to holders of Community Knowledge and
- added a Community Knowledge section to its website to better explain the type of information COSEWIC seeks and to inform individuals, organisations and associations how to contribute knowledge to the assessment process. A questionnaire was also posted on the website to facilitate this process.

Over the past year, COSEWIC received relevant information as a result of this preliminary Community Knowledge initiative for some of the species assessed in 2006. The approach to contact potential contributors directly seems promising and will be continued. COSEWIC is also considering the development of an outreach program to better inform the public about the mandate, role and activities of COSEWIC and to better inform individuals, organisations and associations about how to contribute to the assessment process.

Guidelines for Recognizing Designatable Units below the Species Level:

COSEWIC revised its Guidelines for Recognizing Designatable Units below the Species Level to better describe the circumstances under which COSEWIC may combine designatable units when assigning status.

See Appendix VI submitted for your approval.

Habitat Reports / Ecosystem Approach:

In cooperation with the Province of British Columbia, COSEWIC undertook a project to document changes in habitat that have occurred over time in the Okanagan Valley. A final report is in production.

Following this initiative, COSEWIC struck a Working Group, chaired by the member from the Province of Alberta, to begin the process of undertaking a similar habitat mapping project on the native habitat of the Prairies (e.g. sand hill complex, sand dunes, tall grass and short grass ecosystems).

Another Working Group was struck to examine how an ecosystem approach might be used as a tool in assessing species with habitat and threat commonality. (A workshop on this subject is planned for Fall 2006.)

Summary – Documents Recommended for Approval

Appendix V (Approach to Streamlining Reassessments)

Appendix VI (Guidelines for Recognizing Designatable Units below the Species Level)

ITEM V – SPECIES STATUS ASSIGNMENTS

List of Species assessed since the last reporting indicating status assigned, reasons (including uncertainties where applicable) and COSEWIC criteria with alphanumeric codes.

See Appendix VII.

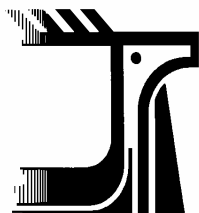
The status reports are available in English and French on the Public Registry at the following address: www.sararegistry.gc.ca

ITEM VI - WILDLIFE SPECIES ASSESSED BY COSEWIC SINCE ITS INCEPTION

See Appendix VIII.

August 2006 Canadian Species at Risk. This publication is available on the Public Registry (<http://www.sararegistry.gc.ca>) and includes all wildlife species assessed by COSEWIC since its inception.

APPENDIX I



COMMITTEE ON THE
STATUS OF ENDANGERED
WILDLIFE IN CANADA

COMITÉ SUR LA SITUATION
DES ESPÈCES EN PÉRIL
AU CANADA

Cypress Hills Interprovincial Park, Saskatchewan, May 1, 2006

More than 500 Canadian species now considered to be at risk of Extinction by COSEWIC

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) met in the Cypress Hills of Saskatchewan from April 23 to 28, 2006. The committee considered 64 scientific reports that assessed the risk of biological extinction for a wide variety of organisms, ranging from lichens to whales. Species in danger of extinction are assigned status as Endangered, Threatened, or Special Concern, according to the degree of risk and nature of the threats.

First, the good news....

The risks to some Canadian species have lessened. Three species, including the Red-shouldered Hawk, a species that has recovered since its previous assessment as Special Concern, were reassessed as Not at Risk. The Aweme Borer, a moth that had not been seen in Canada for 70 years, was reported as rediscovered in Canada on Manitoulin Island, Ontario.

Species at Risk...

Threats to sand dune and open grassland ecosystems of western Canada include dune stabilization, introduction of exotic species, and habitat destruction. These affect a wide diversity of animals, including Ord's Kangaroo Rat, the Burrowing Owl, and a moth, the Gold-edged Gem, all assessed as Endangered, as well as a plant, the Smooth Goosefoot, assessed as Threatened.

Three species of moths, all dependent on a Threatened species of Yucca plant that is native to a restricted area of extreme southern Alberta, have been assessed as Endangered, two of them at this meeting.

Many of the world's large open-ocean sharks have declined due to overharvesting. In the Canadian Atlantic, the White Shark was assessed as Endangered, the Shortfin Mako as Threatened, and the Blue Shark as Special Concern.

Two Arctic species were assessed. The snow-white Ivory Gull, whose numbers have declined drastically in Canada, was assessed as Endangered. The Atlantic Walrus, now at

very low numbers in some areas and in need of improved management, was assessed as Special Concern.

The American Eel is a fish that breeds in the Sargasso Sea and whose young then move into rivers and streams along the Atlantic coast of North America. It has declined in numbers in Lake Ontario, the upper St. Lawrence River, and some other rivers and streams in Atlantic Canada.

The Golden-winged Warbler, which has declined throughout North America as a result of habitat loss and competition with a related species, was assessed as Threatened.

COSEWIC assesses the national status of wild species, subspecies, varieties, or other designatable units that are considered to be at risk in Canada. To do so, COSEWIC uses scientific, Aboriginal traditional and local or community knowledge provided by many experts from governments, academia and other organizations. These assessments are available to the public now and will be forwarded to Federal Minister of the Environment in August for consideration for listing under the *Species at Risk Act* (SARA).

There are now 529 species in various COSEWIC risk categories, including 205 Endangered, 136 Threatened, 153 Special Concern, and 22 Extirpated species (no longer found in the wild in Canada). In addition, 13 are Extinct and 41 are Data Deficient.

COSEWIC comprises members from each provincial and territorial government wildlife agency, four federal entities (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biodiversity Information Partnership, chaired by the Canadian Museum of Nature), three non-government science members and the co-chairs of the species specialist subcommittees and the Aboriginal traditional knowledge subcommittee.

Definition of COSEWIC terms and risk 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 it 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 no longer existing in the wild in Canada, but occurring elsewhere

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

Threatened (T): A wildlife species likely to become Endangered if limiting factors are not reversed

Special Concern (SC): A wildlife species that may become a Threatened or an Endangered species 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 species' eligibility for assessment or (b) to permit an assessment of the species' risk of extinction.

For further information, contact:

COSEWIC Chair Elect
Dr. Jeffrey Hutchings
Tel (1): (902) 494-2687
Tel (2): (902) 494-3515

General inquiries:
COSEWIC Secretariat
(819) 953-3215
www.cosewic.gc.ca

Past COSEWIC Chair:
Dr Marco Festa-Bianchet
Tel: (819) 821-8000 ext: 2061

For inquiries on White Shark, Shortfin Mako,
Blue Shark:

Dr. Paul Bentzen
Tel: (902) 494-1105

For inquiries about bird species:

Richard Cannings
Tel: (250) 496-4049

Dr. Marty Leonard
Tel: (902) 494-2158

For inquiries on the American Eel :

Dr. Robert Campbell
Tel: (613) 987-2552

For inquiries on the Atlantic Walrus:

Dr. Andrew Trites
Tel: (604) 822-8182

For inquiries on the Aweme Borer and the
Gold-edged Gem :

Dr. Theresa Fowler:
Tel: (819) 953-6402

For inquiries on the Ord's Kangaroo
Rat:

Dr. Mark Brigham
Tel: (306) 585-4255

Further details on all species assessed, and the reasons for designations, can be found on the COSEWIC website at:

www.cosewic.gc.ca

APPENDIX II

Species Selected for Status Report Preparation to be included in the Next Call for Bids Fall 2006

Part A. Species selected from COSEWIC's Candidate List

Species	Range of Occurrence
North American burying beetle, <i>Nicrophorus americana</i>	MB, NS, ON, QC
Dense Whitlow-grass, <i>Draba pycnosperma</i>	QC, NS, NL
Deepwater redfish, <i>Sebastes mentella</i>	Atlantic region; jurisdictions include DFO, NL, NS, NB.
Bertha's diving beetle, <i>Sanfilippodytes bertae</i>	AB.
Silver lamprey, <i>Ichthyomyzon unicuspis</i>	MB, ON, QC
American plaice, <i>Hippoglossoides platessoides</i>	Atlantic region; jurisdictions include DFO, NL, NS, NB.
Sable Island borer, <i>Papaipema sp.</i>	NS.
Dark saltflat tiger beetle, <i>Cicindela parowana</i>	BC.
Wickham ssp. <i>wallisi</i>	
Skillet clubtail dragonfly, <i>Gomphus ventricosus</i>	NB, NS, ON, QC.
Virginia mallow, <i>Sida hermaphrodita</i>	ON.
Whip-poor-will, <i>Caprimulgus vociferus</i>	SK, MB, ON, QC, NB, NS.

Part B. Species requiring updates for which status reports need to be recommissioned

Marine Mammals	Status History
Killer Whale (<i>Orcinus orca</i>)	
Northeast Pacific southern resident population	Endangered, 2001 based on 1999 report and an addendum
Northeast Pacific northern resident population	Threatened, 2001 based on 1999 report and an addendum
Northeast Pacific transient population	Threatened, 2001 based on 1999 report and an addendum
Northeast Pacific offshore population	Special Concern, 2001 based on 1999 report and an addendum
Northwest Atlantic / Eastern Arctic populations	Data Deficient, 2001 based on 1999 report and an addendum
Terrestrial Mammals	
Vancouver Island Marmot (<i>Marmota vancouverensis</i>)	Endangered, 2000 based on 1997 report and an addendum
Birds	
Roseate Tern (<i>Sterna dougallii</i>)	Endangered, 1999
Least Bittern (<i>Ixobrychus exilis</i>)	Threatened, 2001 based on a report from 1999
Sprague's Pipit (<i>Anthus spragueii</i>)	Threatened, 2000 based on a report from 1999
Reptiles	
Eastern Foxsnake (<i>Elaphe gloydi</i>)	Threatened, 2000 based on a report from 1999
Queen Snake (<i>Regina septemvittata</i>)	Threatened, 2000 based on a report from 1999

MolluscsNorthern Abalone (*Haliotis kamtschatkana*)

Threatened, 2000

Vascular Plants & LichensDrooping Trillium (*Trillium flexipes*)

Endangered, 2000 based on a report from 1996

Virginia Goat's-rue (*Tephrosia virginiana*)

Endangered, 2000 based on a report from 1996

Deltoid Balsamroot (*Balsamorhiza deltoidea*)

Endangered, 2000 based on a report from 1996

Prairie Lupine (*Lupinus lepidus* var. *lepidus*)

Endangered, 2000 based on a report from 1996

Seaside Birds-foot Lotus (*Lotus formosissimus*)

Endangered, 2000 based on a report from 1996

Water-plantain Buttercup (*Ranunculus alismifolius*
var. *alismifolius*)

Endangered, 2000 based on a report from 1996

White-top Aster (*Sericocarpus rigidus*)

Threatened, 2000 based on a report from 1996

Redroot (*Lachnanthes caroliana*)

Threatened, 2000 based on a report from 1994

Part C. Species requiring status report recommissioning**Species****Other Information**Banded Killifish (mainland populations) –
MB ON QC NB NS PENot at Risk, 1989 (no acceptable bidders from
Winter 2005 Call for Bids)

Felt Lichen (NS NB)

New report (contract had to be cancelled from
Winter 2004 Call for Bids)

Frost Lichen (ON)

New report (successful bidder from Winter 2004
Call for Bids had to decline contract)

APPENDIX III

Table 1

Members and Alternates from Provinces, Territories and Federal Agencies. The duration of the term for all members appearing in this table is 4 years and the end of term for each member and alternate is indicated in brackets().

(Names of new members provided to COSEWIC and recommended for ministerial nomination are indicated in **bold and underlined** where applicable.)

Jurisdiction	Member	Member
Alberta	Gordon Court (July 2007) Provincial Wildlife Status Biologist Resource Data and Species at Risk Fish and Wildlife Division Dept. of Sustainable Resource Development Government of Alberta 7th Floor, O.S. Longman Building 6909 - 116 Street Edmonton AB T6H 4P2	Steve Brechtel (July 2007) Head Resource Data and Species at Risk Fish and Wildlife Division Dept. of Sustainable Resource Development Government of Alberta 7th Floor, O.S. Longman Building 6909 - 116 Street Edmonton AB T6H 4P2
British Columbia	Dave Fraser (July 2007) Endangered Species Specialist Biodiversity Branch Terrestrial Ecosystem Science Section Ministry of Water, Land and Air Protection Government of British Columbia P.O. Box 9338 - Station Prov Govt Victoria BC V8V 9M1	Susan Pollard (July 2009) Endangered Species Specialist Biodiversity Branch Aquatic Ecosystem Science Section B.C. Ministry of Water, Land and Air Protection Government of British Columbia P.O. Box 9338 - Station Prov Govt Victoria BC V8W 9M1

Jurisdiction	Member	Member
Manitoba	<p>Dr. James Duncan (December 2006) Manager Biodiversity Conservation Section Wildlife and Ecosystem Protection Branch Manitoba Conservation P.O. Box 24 200 Saulteaux Crescent Winnipeg MB R3J 3W3</p> <p>William George Watkins (December 2010) Wildlife and Ecosystem Protection Branch Manitoba Conservation P.O. Box 24 200 Saulteaux Crescent Winnipeg MB R3J 3W3</p>	<p>Martin Erickson(July 2008) Fisheries Biologist Aquatic Ecosystem Section Fisheries Branch Manitoba Water Stewardship Box 20, 200 Saulteaux Crescent Winnipeg, MB R3J 3W3</p>
New Brunswick	<p>Dr. Maureen Toner (July 2007) Biologist Species at Risk Program Fish and Wildlife Branch Department of Natural Resources Hugh John Flemming Forestry Centre P. O. Box 6000 Fredericton, NB E3B 5H1 Canada</p>	<p>Pascal Giasson (December 2010) Manager Species at Risk Program Fish and Wildlife Branch Department of Natural Resources Hugh John Flemming Forestry Centre P. O. Box 6000 Fredericton, NB E3B 5H1 Canada</p>
Newfoundland and Labrador (For all Species other than Marine Fish)	<p>Joseph Brazil (July 2007) Chief Endangered Species and Biodiversity Section Inland Fish and Wildlife Division Department of Tourism, Culture and Recreation Government of Newfoundland and Labrador P.O. Box 2007 50 Main Street, Commerce Court Corner Brook NL A2H 7S1</p>	<p>Nathalie Djan-Chékar (July 2007) Curator of Botany Natural History Unit Provincial Museum of Newfoundland & Labrador P.O. Box 8700 St. John's NL A1B 4J6</p>

Jurisdiction	Member	Member
Newfoundland and Labrador (Marine Pelagic and Demersal Fish Species)	Tom Dooley (July 2007) Director of Resource Policy and Development Policy and Planning Department of Fisheries and Aquaculture Government of Newfoundland and Labrador P.O. Box 8700 St. John's NL A1B 4J6	David Coffin (July 2007) Supervisor Fisheries Resource Planning and Development Policy and Planning Department of Fisheries and Aquaculture Government of Newfoundland and Labrador P.O. Box 8700 St. John's NL A1B 4J6
Northwest Territories	Dr. Suzanne Carrière (July 2007) Ecosystem Management Biologist Wildlife Division Department of Environment and Natural Resources Government of the Northwest Territories 600 - 5102 50th Avenue Scotia Centre, 5th Floor Yellowknife NT X1A 3S8	Tom Lakusta (July 2008) Manager, Forest Resources Forest Management Department of Resources, Wildlife and Economic Development Government of the Northwest Territories PO Box 1320 Yellowknife NT X1A 2L9
Nova Scotia	Dr. J. Sherman Boates (July 2007) Manager Wildlife Division Department of Natural Resources Government of Nova Scotia 136 Exhibition Street Kentville NS B4N 4E5	Mark F. Elderkin (July 2007) Wildlife Division Nova Scotia Dept. of Natural Resources Government of Nova Scotia 136 Exhibition Street Kentville NS B4N 4E5
Nunavut Territory	Michael Setterington (July 2007) Ecosystems Biologist Department of Environment Government of Nunavut PO Box 120 Arviat NU X0C 0E0	Vacant

Jurisdiction	Member	Member
Ontario	Alan Dextrase (July 2007) Aquatic SAR Biologist Species At Risk section Ontario Parks Ontario Ministry of Natural Resources P.O. Box 7000 Peterborough ON K9J 8M5	Michael Oldham (July 2008) Botanist/Herpetologist Ontario Natural Heritage Information Centre (NHIC) Ontario Ministry of Natural Resources P.O. Box 7000 Peterborough ON K9J 8M5
Prince Edward Island	Rosemary Curley (July 2007) Program Manager Protected Areas and Biodiversity Conservation Conservation and Management Division PEI Dept. Fisheries, Aquaculture and Environment 11 Kent St. P.O. Box 2000, Jones Bldg, Charlottetown PE C1A 7N8	Barry MacPhee (July 2008) Manager of Marine Fisheries PEI Department of Fisheries, Aquaculture and Environment 11 Kent St. P.O. Box 2000, Jones Bldg, Charlottetown PE C1A 7N8
Quebec (Plants)	Line Couillard (July 2007) Ministère du Développement durable, de l'Environnement et des Parcs Direction du patrimoine écologique et du développement durable Édifice Marie-Guyart, 4e étage 675, boul. René-Lévesque Est Québec QC G1R 5V7	Jacques Labrecque (July 2008) Ministère du Développement durable, de l'Environnement et des Parcs Direction du patrimoine écologique et du développement durable Édifice Marie-Guyart, 4e étage 675, boul. René-Lévesque Est Québec QC G1R 5V7
Quebec (Fauna)	Daniel Banville (July 2008) Ministère des Ressources naturelles et de la Faune Secteur Faune Québec 930, Chemin Sainte-Foy 3 ^{ième} étage Québec QC G1S 2L4	Jacques Jutras (July 2008) Ministère des Ressources naturelles et de la Faune Secteur Faune Québec 930, Chemin Sainte-Foy 3 ^{ième} étage Québec QC G1S 2L4

Jurisdiction	Member	Member
Saskatchewan	Jeanette Pepper (July 2007) Zoologist Saskatchewan Conservation Data Centre Resource Stewardship Branch Saskatchewan Environment Government of Saskatchewan 3211 Albert Street - Room 436 Regina SK S4S 5W6	Dr. Robert Wright (July 2008) Plant ecologist Forest Services Group Saskatchewan Environment Government of Saskatchewan 3211 Albert Street Regina SK S4S 5W6
Yukon Territory	Thomas Jung (July 2007) Senior Biologist Department of Environment Fish and Wildlife Branch Government of Yukon P.O. Box 2703 Whitehorse YT Y1A 2C6	Syd Cannings (July 2008) NatureServe Yukon Yukon Department of the Environment Box 2703 Whitehorse YT Y1A 2C6
Federal Biodiversity Information Partnership (Canadian Museum of Nature)	Dr. Robert Anderson (July 2007) Entomology Research Scientist Canadian Museum of Nature P.O. Box 3443 - Station D Ottawa ON K1P 6P4	Dr. Lynn Gillespie (July 2007) Research Scientist Canadian Museum of Nature P.O. Box 3443 - Station D Ottawa ON K1P 6P4
Environment Canada (Canadian Wildlife Service)	Dr. Theresa Fowler (July 2007) Science Advisor / Species Assessment Biologist Species at Risk Branch Canadian Wildlife Service Environment Canada Ottawa ON K1A 0H3	Alain Branchaud (December 2010) Species at risk Biologist Centre Saint-Laurent Environment Canada 105 McGill street Montreal, QC H2Y 2E7
Department of Fisheries and Oceans	Dr. Jake Rice (July 2007) Director Canadian Science Advisory Secretariat Department of Fisheries and Oceans 200 Kent Street - Station 12S032 Ottawa ON K1A 0E6	Lara Cooper (July 2008) Canadian Science Advisory Secretariat Fisheries and Oceans Canada St. Andrews Biological Station 531 Brandy Cove Road St. Andrews NB E5B 2L9

Jurisdiction	Member	Member
Parks Canada	Dr. Gilles Seutin (July 2007) Coordinator Species at Risk Program Parks Canada 25 Eddy Street, 4th Floor Gatineau QC K1A 0M5	Dr. Peter L. Achuff (July 2007) National Botanist Ecological Integrity Branch Parks Canada Waterton Lakes National Park Waterton Park AB T0K 2M0

Table 2

Co-chairs of the Aboriginal Traditional Knowledge Subcommittee and Species Specialist Subcommittees, with dates of appointment and the ending date of their terms of office.

Names of new/renewed members recommended by COSEWIC for ministerial appointment for a term starting January 1st, 2007 are indicated in **Bold and underlined** where applicable.

Subcommittee	Name	Date Appointed	Term Ending
Aboriginal Traditional Knowledge	<u>Henry Lickers</u> Mohawk Council of Akwesasne Department of the Environment P.O. Box 579 Cornwall ON K6H 5T3	05/06/2003	31/12/2010
	Larry Carpenter Wildlife Management Advisory Council - Northwest Territories P.O. Box 2120 Inuvik NT X0E 0T0	05/06/2003	31/12/2007
Amphibians and Reptiles	<u>Dr. Ronald J. Brooks</u> Department of Zoology College of Biological Science University of Guelph Guelph ON N1G 2W1	05/06/2003	31/12/2010
	Dr. David M. Green Redpath Museum McGill University 859 Sherbrooke Street West Montréal QC H3A 2K6	05/06/2003	31/12/2008
Arthropods	Dr. Theresa Fowler Science Advisor / Species Assessment Biologist Species at Risk Branch Canadian Wildlife Service Environment Canada Ottawa ON K1A 0H3	01/01/2005	31/12/2006
	<u>Dr. Laurence Packer</u> Department of Biology York University 4700 Keele Street Toronto ON M3J 1P3	01/01/2007	31/12/2010

Subcommittee	Name	Date Appointed	Term Ending
	Dr Paul M. Catling Research Scientist and Curator Biodiversity, National Program on Environmental Health Agriculture and Agri-food Canada, Research Branch Wm. Saunders Bldg., Central Experimental Farm Ottawa, ON K1A 0C6	01/01/2005	31/12/2008
Birds	Richard Cannings 1330 East Debeck Road R.R. 1, Site 11 - Comp. 96 Naramata BC V0H 1N0	01/01/2005	31/12/2008
	<u>Dr. Marty L. Leonard</u> Department of Biology Dalhousie University 1355 Oxford Street Halifax NS B3H 4J1	05/06/2003	31/12/2010
Freshwater Fishes	Dr. Robert Campbell 983 Route 800 E R.R. #1 St. Albert ON K0A 3C0	05/06/2003	31/12/2009
	Dr. Claude Renaud Adjunct Professor, University of Ottawa Research Scientist – Ichthyology Canadian Museum of Nature P.O. Box 3443 – Station D Ottawa ON K1P 6P4	05/06/2003	31/12/2007
Molluscs	Dr. Gerald L. Mackie Department of Zoology College of Biological Science University of Guelph Guelph ON N1G 2W1	05/06/2003	31/12/2006
	<u>Robert Forsyth</u> P.O. Box 3804 Smithers BC V8T 3Y7	01/01/2007	31/12/2010

Subcommittee	Name	Date Appointed	Term Ending
	Janice L. Smith Aquatic Ecosystem Impacts Research Branch National Water Research Institute Environment Canada Burlington ON L7R 4A6	01/01/2005	31/12/2008
Marine Fishes	Dr. Howard Powles 53 rue Lortie Gatineau, Qc J9H 4G6	01/01/2006	31/12/2009
Marine Fishes	Dr. Paul Bentzen (2 year-term by exception) Professor Department of Biology, Dalhousie University Halifax, N.S. B3H 4J1	01/01/2006	31/12/2007
Marine Mammals	Dr. Andrew Trites Director Marine Mammal Research Unit Fisheries Centre University of British Columbia 2204 Main Mall Vancouver BC V6T 1Z4	05/06/2003	31/12/2007
	Dr. Randall R. Reeves Okapi Wildlife Associates Hudson QC J0P 1H0	01/01/2005	31/12/2008
Plants and Lichens (Vascular Plants)	Dr. Erich Haber c/o National Botanical Services 604 Wavell Avenue Ottawa ON K2A 3A8	05/06/2003	31/12/2009
Plants and Lichens (Mosses and Lichens)	Dr. René Belland Devonian Botanic Garden University of Alberta Edmonton AB T6G 2E1	05/06/2003	31/12/2007
Terrestrial Mammals	Dr. Marco Festa-Bianchet Department of Biology Sherbrooke University Sherbrooke, QC J1K 2R1	05/06/2003	31/12/2007

Subcommittee	Name	Date Appointed	Term Ending
	Dr Mark Brigham Department of Biology University of Regina Regina, SK S4S 0A2	01/01/2006	31/12/2009

Table 3

COSEWIC Non-government Science Members with dates of appointment and the ending date of their terms of office.

Names of new/renewed members recommended by COSEWIC for ministerial appointment for a term starting January 1, 2007 are indicated in **Bold and underlined** where applicable.

Name	Date Appointed	Term Ending
Michael Bradstreet Ontario Region Director Nature Conservancy of Canada RR 5, 5420 Highway 6 North Guelph ON N1H 6J2	05/06/2003	31/12/2007
Dr. Steven M. Carr Department of Biology Memorial University of Newfoundland Elizabeth Avenue St. John's NL A1B 3X9	05/06/2003	31/12/2006
<u>Dr. Jeannette Whitton</u> Associate Professor and Director, UBC Herbarium Department of Botany University of British Columbia 3529-6270 University Boulevard Vancouver BC V6T 1Z4	01/01/2007	31/12/2010
Dr. Jeffrey Hutchings Department of Biology Dalhousie University 1355 Oxford Street Edsell Castle Circle Halifax NS B3H 4J1	01/01/2005	31/12/2008

APPENDIX IV

Biosketches

Co--chair, Aboriginal Traditional Knowledge (ATK) Subcommittee

Henry Lickers has been the co-chair of the COSEWIC ATK Subcommittee since its inception in 2003.

He is a member of Seneca Nation, Turtle Clan. He has been the director of the Mohawk Council of Akwesasne, Department of the Environment for the past 28 years.

Mr. Lickers grew up on the Six Nations reserve and studied biology at Trent University and the Waikato University, New Zealand.

He represents Akwesasne in a number of partnerships with other organizations and governments. He served as a member of the Panel on the Ecological Integrity of Canada's National Parks and is a member of the board of directors of the Algonquin to Adirondacks Conservation Association. Both are examples of working with representatives from Canadian Parks & Wilderness Society (CPAWS) and others to better protect natural ecosystems.

During this time, he has been the principal investigator on the Effect on Aboriginals in the Great Lakes Environment (EAGLE) Project and the Naturalized Knowledge Systems Project and the First Nation's Community Health Indicators Project. All of these projects involve investigating First Nations Environmental issues.

In 2005 Mr. Lickers received the Eco-Hero Community Award from Planet in Focus, a non-profit organization whose mission is to promote the use of film and video as catalysts for public awareness, discussion, and appropriate action on the ecological and social health of the planet.

In 2006 he was presented with the Ross Silversides Award by the Eastern Ontario Model Forest group, an organization which promotes sustainable forestry across the region and partners with other groups in projects which meet that mandate.

He also received the Jean Woodsworth Award from the Canadian Pensioner Concerned Inc. (CPC) for his dedication to community and the environment. CPC is a non-profit organization that gives voice to elders and their concerns.

Some of Mr. Lickers' other commitments have been:

- Member of the Science and Technology Advisory Council to Environment Canada.
- Scientific Co-Chair, The Haudenosaunee Environmental Taskforce.
- Vice President, Board of Directors, St. Lawrence River Institute of Environmental Sciences.
- Member, Board of Directors, Eastern Ontario Model Forest.

- Scientific Co-Chair, The Assembly of First Nations Environment Committee.
- Past Board Member of the International Joint Commission, Science Advisory Board.
- Past Member of the Panel on Ecological Integrity of Canada's National Parks.
- Past Member, The Scientific Advisory Committee, Northern River Basin Study.
- Past Board Member, Canadian Environmental Assessment Research Council.

Co-chair - Amphibians & Reptiles Specialist Subcommittee

Recommendation – Dr. Ronald J. Brooks

Dr. Ronald J. Brooks is the current co-chair the Amphibians & Reptiles Specialist Subcommittee of COSEWIC and is a Professor of Zoology at the University of Guelph. Dr. Brooks has held the Amphibians & Reptiles Specialist Subcommittee co-chair position on COSEWIC since 1995 and according to his CV has also been a member of a plethora of working groups on COSEWIC. He was the president of the Canadian Association of Herpetologists from 1996 to 2002 and has served as a member of the Board of Directors, Canadian Amphibian and Reptile Conservation Network since 1997. He has also been a member of the IUCN Species Survival Commission – Tortoises and Turtles since 1996. Dr. Brooks is also a member of the Scientific Advisory Committee of the Endangered Species Recovery Team of World Wildlife Canada and serves on the recovery teams for Blue Racer, Wood Turtle, Eastern Fox Snake, Eastern Hog-nosed Snake, Queensnake, Eastern Spiny Softshell and OMSTARRT (Ontario Multispecies Turtles at Risk Recovery Team).

Dr. Brooks has published about 120 articles in scientific journals including a recently-submitted article entitled “Male biting behavior during the spring courtship of painted turtles, *Chrysemys picta*.” His research on reptiles now covers all eight of Canada’s extant freshwater turtles with some projects extending back to the 1970s. In addition, Dr. Brook’s students have worked on several species of snakes, including the blue racer, eastern fox snake, brown snake, Lake Erie watersnake and eastern hognosed snake. These studies have focused on life history, ecology, demography, conservation and embryonic development, sex determination and hatching success. Dr. Brooks is also knowledgeable beyond the herpetological realm; he has published papers on leeches, earthworms, fish, mites, dipteran flies, lemmings, voles, deer mice, wolves, caribou and beaver, and is the director of the longest-running (55 years) monitoring study of small mammals in North America or perhaps the world.

Dr. Brooks recently received the Blue Racer Conservation Award from the Canadian Amphibian and Reptile Conservation Network.

Co-chair - Arthropods Specialist Subcommittee**Recommendation – Dr. Laurence Packer**

Dr. Laurence Packer is a full professor in the Department of Biology, Faculty of Pure and Applied Science, at York University in Toronto. He has been at York since 1988. Prior to that, he was a Post-Doctoral Research Fellow in the Department of Biological Sciences at the University of Calgary (1987-88) and an Assistant Professor of Biology at the University College of Cape Breton (1986-87). He received his Ph.D. from the University of Toronto in 1986.

Dr. Packer is a prolific researcher with over 80 primary publications, many of them in high impact journals, on the biology, systematics, behaviour, conservation genetics and biodiversity of insects, mainly bees. He is a recognized expert on bees who has obtained numerous research grants. He is a member of the editorial board for three journals, including the Canadian Journal of Zoology. He has supervised 11 Masters and Ph.D. students and served on the supervisory committees for over 20 others. He has taught undergraduate courses in entomology, biodiversity, systematics and evolution and graduate courses in ecology, entomology, phylogenetics and the biology of bees. Dr Packer is not currently a member of the Arthropods SSC and his familiarity with COSEWIC and SARA is somewhat limited. However, he has worked on the insects of oak savanna and tallgrass prairie habitats in Ontario, wrote the COSEWIC status report on the Frosted Elfin butterfly and a status report on the Karner Blue butterfly for the World Wildlife Fund and the Ontario Ministry of Natural Resources, and is a member of the Karner Blue recovery team.

Dr. Packer has extensive experience serving on major committees both within and outside the University, including search committees for new faculty members, the departmental chair and NSERC review panels. He currently chairs the tenure and promotion committee for the Biology Department at York University. Four people with whom he has worked on committees were unanimous in their praise of his ability to work constructively within a consensus-based decision-making process. He was described as fair, organized and hardworking, and as someone with good interpersonal skills who is articulate, listens well, has a good sense of humour and “gets the job done.” He appears to be a very upbeat person who is keen to take on the job of Co-Chair of the Arthropods SC of COSEWIC.

Co-chair - Birds Specialist Subcommittee**Recommendation – Dr. Marty Leonard**

Dr. Marty Leonard is the current Co-Chair of the Birds Specialist Subcommittee of COSEWIC and lives in Halifax, Nova Scotia, where she is a full Professor at Dalhousie University. Dr. Leonard earned her B.Sc. at the University of Guelph, her M.Sc. at Carleton University and her Ph.D. at the University of Ottawa in 1987. She conducted post-docs at Queen's University and at the University of Cambridge and has also been a Research Fellow in Australia. In 2003, Dr. Leonard won an Alumni Association award for excellence in teaching at Dalhousie.

Dr. Leonard is widely published with over 60 authored and co-authored publications in the primary literature (and books) on subjects ranging from birds in yerba mate plantations in Paraguay to tree swallows; to polar bears; to wrens, penguins and blackbirds; to terns; to chickens, bats and penguins; and back to tree swallows again. Her current interests revolve around the effects of noise on parent-offspring communication, conservation of endangered birds, the function and design of avian begging signals and the role of error in the evolution of animal signals.

Dr. Leonard has a good knowledge of the biology and conservation of birds, including endangered species, and especially of birds in Eastern Canada.

She has been Co-chair of the the Birds Specialist Subcommittee of COSEWIC since 2003, is a member of the Nova Scotia Species at Risk Working Group, which also uses COSEWIC criteria, and has served on the Scientific Advisory Committee of World Wildlife Fund, and serves on the national and Nova Scotia Roseate Tern Recovery Teams.

Dr. Leonard has reviewed numerous articles, grant applications, reports and theses over her 25 year academic career, and is currently an associate editor for two journals. Her experience on COSEWIC, the Nova Scotia Species at Risk Working Group and the Roseate Tern Recovery Team has shown that she has a good ability to work in a consensus-based decision-making environment.

Co-chair - Molluscs Specialist Subcommittee

Recommendation – Mr. Robert Forsyth

Robert Forsyth's formal education is in graphic design. Over the past 15 years, he has built an impressive knowledge base on the systematics and ecology of terrestrial molluscs, as well as freshwater and marine species, through his work as a volunteer and research associate with the Royal British Columbia Museum. Mr. Forsyth has an impressive publication record. In addition to his recently published book entitled *Land Snails of British Columbia*, he has published 13 papers in peer-reviewed scientific journals. He has also co-authored COSEWIC species status reports on the warty jumping-slug, dromedary jumping-slug, Oregon forestsnail and Puget Oregonian.

Robert Forsyth has a broad knowledge of Canadian molluscs, specializing in particular on terrestrial species. He has been a member of the Molluscs SSC since 2001 and has co-authored several COSEWIC status reports. This has given him a foundation in species assessment and in formulating recommendations with respect to biological status.

As an Species Specialist Subcommittee member, Mr. Forsyth has been a strong contributor as well as a good team player. He has experience in reviewing and editing COSEWIC status reports. He also has experience as a referee for manuscripts submitted for publication in peer-reviewed journals.

Non-government Science Member**Recommendation: Dr. Jeannette Whitton**

Dr. Jeannette Whitton is an Associate Professor at the University of British Columbia (Department of Botany). She earned a B.Sc. at McGill University and a Ph.D. at the University of Connecticut for her work on the systematics and evolution of North American *Crepis* agamic complex. Following this, Dr. Whitton completed a Post-Doc at Indiana University. Her current work focuses on evolutionary biology and conservation genetics, working primarily with vascular plants (e.g. *Lasthenia*, *Calycadenia*, *Helianthus*, *Crepis*, and *Towsendia*). She has broad experience in population biology and systematics, and her work often involves her in allied disciplines (e.g. ecology and ecophysiology). In addition to her laboratory work, Dr. Whitton has field botany experience on the Gaspé Peninsula, the Rocky Mountains, and the Pacific Coast.

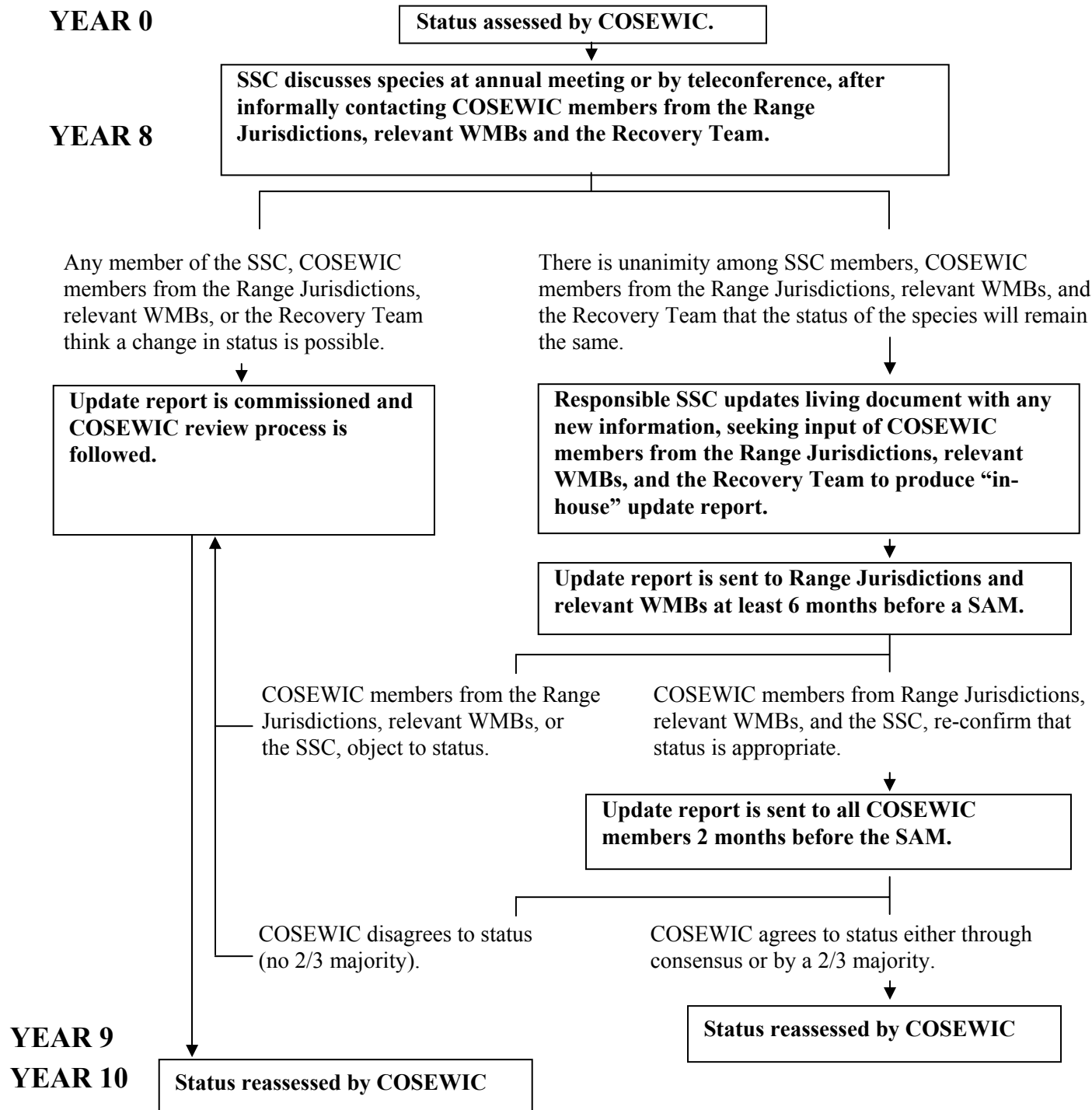
Since 1996, Dr. Whitton has contributed 10 papers in peer-reviewed journals, four chapters in books, and was Co-editor of the book *Plant Adaptation: Molecular Genetics and Evolution*. She has supervised or co-supervised seven graduate students, and sat on a number of graduate advisory committees on a range of taxa, including vascular plants, fish and birds. Dr. Whitton is the Director and Curator of Vascular Plants at the UBC Herbarium, and is on the building steering committee for a new natural history museum at UBC. She is also a member of the Streambank Lupine Recovery Team and gave a talk during a mini-symposium organized for Parks representatives on genetic issues around plant restoration.

APPENDIX V

Approach to Streamlining Reassessments

Approved by COSEWIC April 2006

To be considered by CESSC for approval in September 2006



APPENDIX VI

Guidelines for recognizing Designatable Units Below the Species Level

Approved by CESSC in October 2005
Subsequent changes submitted for approval by CESSC
(see footnote under Precautions section)

Preamble:

It is widely recognised that species status assessment and conservation of biological diversity require that populations below the species level (using “species” in the accepted sense of the taxonomic hierarchy) be considered when appropriate. Most legislation allows for status designation of populations below the species level. For example, the federal Species at Risk Act (SARA) includes subspecies, varieties and “geographically or genetically distinct” populations in its definition of wildlife species thus allowing for listing of populations below the species level. COSEWIC's recognition of populations below the species level for assessment (i.e. designatable units) is guided by the same general objective of preventing wildlife species from becoming extinct or extirpated.

COSEWIC strives to recognize designatable units that are significant and irreplaceable units of biodiversity yet there are difficulties inherent in achieving a uniform interpretation of the word “significant”. Furthermore, because patterns of population structure, life history, and genetic variability differ across taxonomic groups, use of uniform criteria in determining appropriate designatable units *a priori* can be difficult. Guidelines are needed in order to interpret, on a case-by-case basis, what constitutes a significant element of biological diversity to be recognized for the purpose of conservation status assessment by COSEWIC.

Approach:

COSEWIC's usual approach to assigning status is, first, to examine the species as a whole and then, if deemed appropriate, to examine the status of designatable units below the species level.

In cases where particular designatable units are strongly suspected of being at risk, or where they are so different in distribution or conservation status that an overall assessment would not capture the conservation concerns, COSEWIC will assess single designatable units below the species level.

Status may be assigned to subspecies, varieties, or geographically or genetically distinct populations which may be recognized in cases where a single status designation for a species is not sufficient to accurately portray probabilities of extinction within the species. Designatable units are to be recognized in accordance with the following guidelines.

Guidelines:

Specifically, the units to which status may be assigned below the species level are recognized on the basis of any one of the four criteria (1 - 4) described below. Typically, COSEWIC will consider, in order of precedence, 1) established taxonomy, 2) genetic evidence, 3) range disjunction, and 4) biogeographic distinction.

1) named subspecies or varieties:

published subspecies of animals according to the Code of Zoological Nomenclature or
published subspecies or varieties of plants according to the Code of Botanical Nomenclature.

Examples:

Water Snake: *Nerodia sipedon sipedon* (NAR), *N. s. insularum* (E)
Loggerhead Shrike: *Lanius ludovicianus migrans* (E), *L. l. excubitorides* (T)

or,

2) units identified as genetically distinctive:

evidence of genetic distinctiveness including, but not limited to, appropriate inherited traits (morphological, life history, behaviour) and/or genetic markers (e.g. allozymes, DNA microsatellites, DNA restriction fragment length polymorphisms (RFLPs), DNA sequences, etc.).

Example:

Coho salmon: Interior Fraser River (E), as opposed to other populations

or,

3) units separated by major range disjunction:

disjunction between substantial portions of the species' global geographic range such that dispersal of individuals between separated regions has been severely limited for an extended period of time and is not likely in the foreseeable future.

Examples:

Boreal Felt Lichen: Atlantic (E), Boreal (SC)
Blanding's Turtle: Atlantic population (T), as opposed to other populations

or,

4) units identified as biogeographically distinct:

occupation of differing eco-geographic regions that are relevant to the species and reflect historical or genetic distinction, as may be depicted on an appropriate ecozone or biogeographic zone map (Figs. 1 - 3).

Examples:

Mormon Metalmark: Southern Mountain population (E), Prairie population (T).
Woodland Caribou: an assortment of designations based on biogeographic zones.

Precautions:

Appropriate caution in interpreting data should be exercised when identifying designatable units. The biological significance of phenotypic, genetic or geographic variation, must be considered in light of potential limitations in the data available. Inadequate information on temporal variability, insufficient sample sizes, or evidence from inappropriate traits (those which are either inordinately variable or overly conservative) will compromise the significance of available information.

Separate status designations should **not** be recognized for management units that are not based on biological criteria consistent with these guidelines.

~~Status designations should **not** be individually assigned to units below the species level if all such units within the species have the same status designation. In such cases, the status designation should be applied to the entire species.~~

When a COSEWIC assessment has been conducted using designatable units below the species level, and adjacent designatable units are classified as having the same status, on the basis of the same criteria, then COSEWIC may apply a single status assessment to those units if a single assessment better addresses the conservation status of the units that are combined.¹

¹ Shaded text indicates the changes to the guidelines approved by COSEWIC in April 2006.

Figure. 1. Terrestrial ecozones of Canada

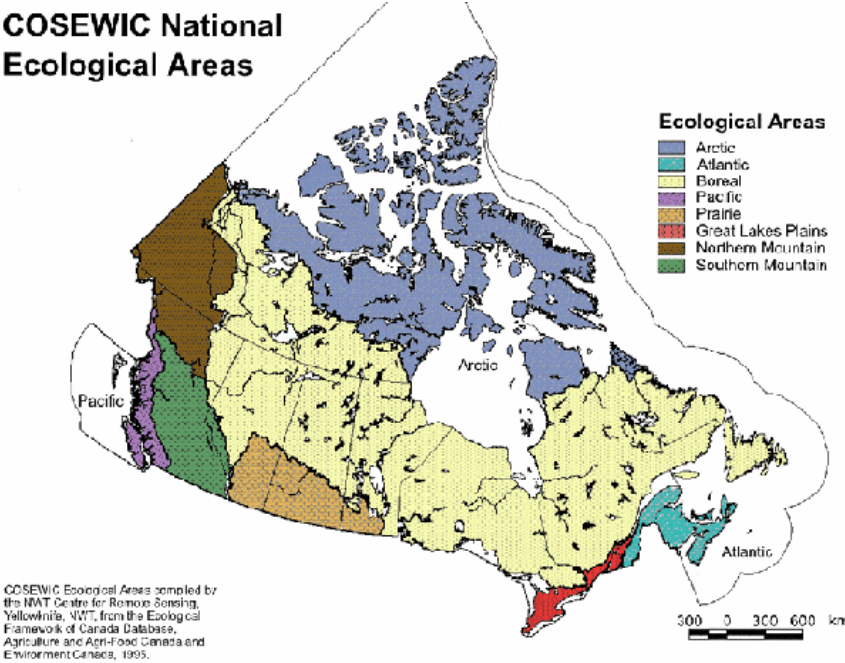


Figure. 2. Aquatic ecozones of Canada.

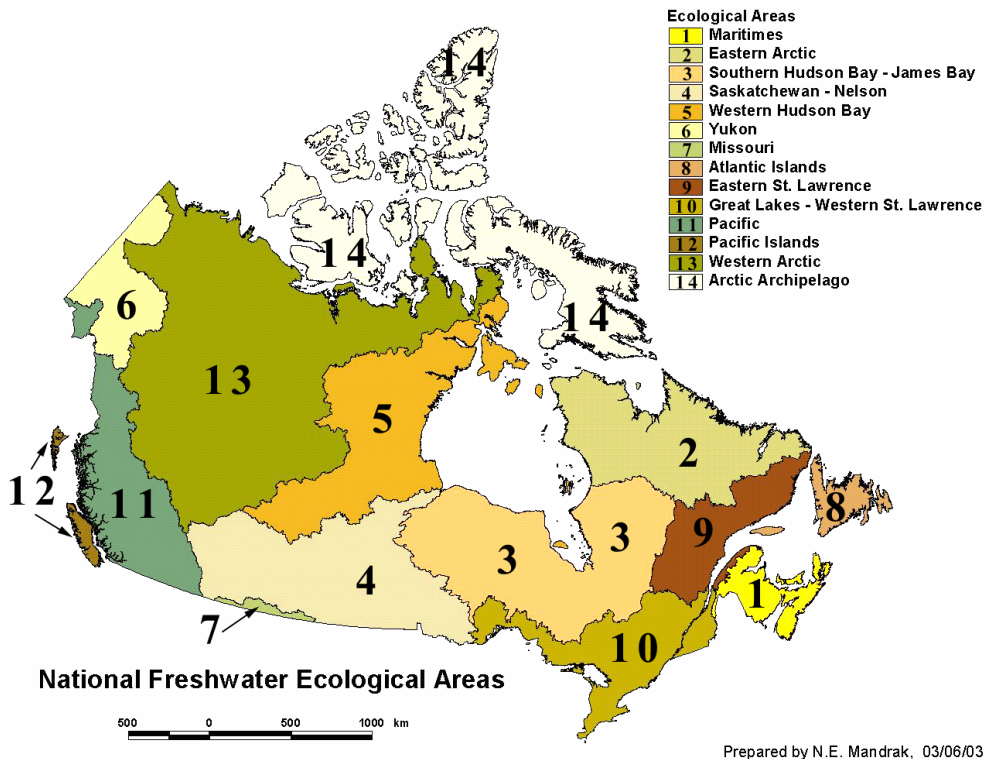
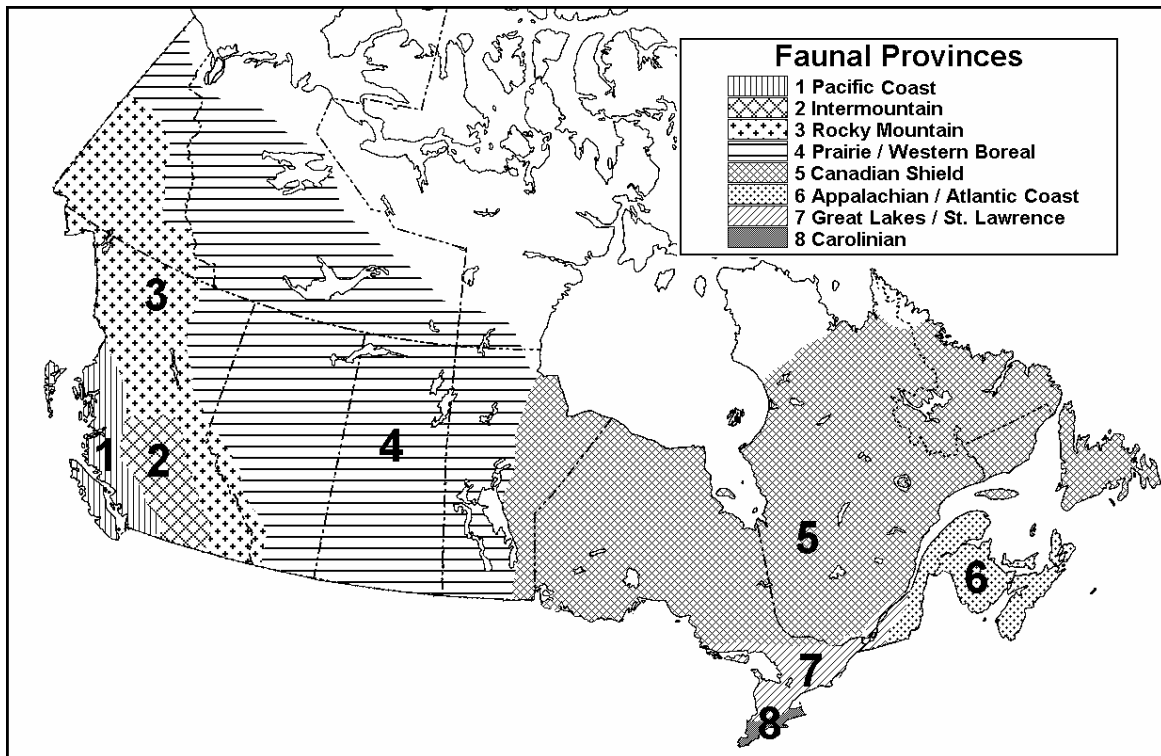


Figure. 3. Faunal provinces of terrestrial amphibians, reptiles, and molluscs in Canada.



Prepared by David M. Green, 2003

APPENDIX VII

Detailed COSEWIC Species Assessments, April 2006

Results are grouped by taxon and then by status category. A reason for designation is given for each species. A short history of status designations follows. The range of occurrence in Canada for each species (by province, territory, or ocean) is provided.

Mammals**Ord's Kangaroo Rat*****Dipodomys ordii*****Endangered**

Assessment Criteria A3c; B2ab(iii); C2a(i)

Reason for Designation

The species requires sand dune habitat, which may disappear over the short term (10 years). The area of occupancy is only about 53 km² and only 1000 or fewer individuals are alive at the end of most winters. There is strong evidence for local adaptations of the Canadian population and a rescue effect is extremely unlikely because the nearest population in the United States is 270 km away.

Range AB SK

Status History

Designated Special Concern in April 1995. Status re-examined and designated Endangered in April 2006.

Pacific Water Shrew***Sorex bendirii*****Endangered**

Assessment Criteria B1ab(i,iii)

Reason for Designation

The habitat of this rare species, confined to the lower Fraser valley region of British Columbia, continues to decline and fragment as a result of development. There is little chance of rescue. It is extremely rare throughout its range.

Range BC

Status History

Designated Threatened in April 1994 and in May 2000. Status re-examined and designated Endangered in April 2006.

Northern Fur Seal***Callorhinus ursinus*****Threatened**

Assessment Criteria Met criteria for Endangered, A2b; B2ab(v), but designated Threatened, A2b; B2ab(v), because there are still more than 600,000 individuals and the species does not appear to be in imminent danger of extinction.

Reason for Designation

The population that breeds on the Pribilof Islands in the Bering Sea feeds in, and migrates through, British Columbia waters. This population numbered about 629,000 animals in 2004. Although still relatively large, the population, as inferred from pup counts, has declined by 50-60% over three generations (1974-2004). The rate of decline has been particularly rapid since 1998. Trends in counts of adult males from 1974-2004 are confounded by response to the cessation, in 1984, of the selective commercial harvesting of sub-adult males in 1984. These counts have declined rapidly and inexplicably since 1992. The reasons for the population decline are unknown. Entanglement in marine debris, disturbance, pollution, and environmental changes, possibly including a regime shift in the Bering Sea and North Pacific ecosystems, are thought to be contributing factors. Little is known about possible limiting factors in British Columbia and other regions where fur seals forage during their annual migration.

Range BC Pacific Ocean

Status History

Designated Not at Risk in April 1996. Status re-examined and designated Threatened in April 2006.

Atlantic Walrus***Odobenus rosmarus rosmarus*****Special Concern**

Assessment Criteria not applicable

Reason for Designation

Five populations ranging from Nova Scotia to the high Arctic are recognized for management purposes based on geographical distributions, genetics and lead isotope data. Some of the populations appear to be at greater risk than

others due to over-hunting, and may be threatened. However, knowledge about population structure is insufficient to assess them separately. The Nova Scotia-Newfoundland-Gulf of St Lawrence population was hunted to extirpation by the late 18th century. Sporadic recent sightings of individuals and small groups in the Gulf of St Lawrence and off Nova Scotia are not considered evidence of re-establishment. The South and East Hudson Bay population is believed to number in the low hundreds, although population size and structure are poorly known. Observations from the late 1930s to the present suggest that numbers declined significantly, but the rate of decline cannot be quantified and it is not known whether the decline is continuing. The small population size suggests it may be vulnerable to disturbances and small increases in hunting effort. The total size of the Northern Hudson Bay-Davis Strait population could be as small as 4000-6000 individuals. Its ability to sustain minimum current removals is questionable. Some portion of this population is hunted in Greenland waters. The Foxe Basin population was estimated to be 5,500 in 1989. It is unknown if current exploitation rates are sustainable. Hunting is believed to have reduced the Baffin Bay (High Arctic) population to only a few percent of the number present in 1900. Limited information suggests the current population is small and that a portion of it continues to be hunted at unsustainable levels in the North Water area of Canada and northwest Greenland. However, satellite tracking and genetic information suggests that some animals in this population are resident in the Canadian Archipelago (west Jones Sound and Penny Strait / Lancaster Sound) and are not exposed to over-hunting. Better information is needed on population sizes and composition, seasonal movements, vital rates, and hunting mortality. The biggest threat is over-hunting, particularly on populations that inhabit the southern and northern ends of the species' current range. The species is near to qualifying for threatened status and requires an effective plan to manage hunting. No Management Plans are currently in place for the species. Although quotas have been set in few communities, it is not known if they are adequate to prevent over-hunting.

Range NU MB ON QC NB PE NS NL Arctic Ocean

Status History

The Atlantic Walrus in Canada was originally treated by COSEWIC as two separate populations: Eastern Arctic population (Not at Risk in April 1987 and May 2000) and Northwest Atlantic population (Extirpated in April 1987 and May 2000). In April 2006, COSEWIC included both populations in a single designatable unit for Atlantic Walrus in Canada, and the species was designated Special Concern.

Harbour Porpoise

Phocoena phocoena

Special Concern

Northwest Atlantic population

Assessment Criteria not applicable

Reason for Designation

The species is widely distributed in eastern Canadian marine waters. Surveys of portions of the range (Bay of Fundy/Gulf of Maine and the Gulf of St. Lawrence) during the late 1990s indicated more than 100,000 porpoises. Incidental catch (bycatch) in fishing gear, especially gillnets, is a major source of mortality. Bycatch probably has declined in areas where use of gillnets has decreased. Management measures in the Bay of Fundy and Gulf of Maine have been shown to reduce porpoise bycatch rates in gillnets. However, these measures have not been implemented in much of the species' range, including the Gulf of St. Lawrence and Newfoundland and Labrador, where annual mortality in several gillnet fisheries is still estimated to be in the thousands. There is also some concern that porpoises in the Bay of Fundy and possibly other areas may be excluded from portions of their habitat by acoustic harassment devices associated with aquaculture. Although the population remains abundant, the particular susceptibility of harbour porpoises to bycatch in fishing gear represents an incipient threat. Given that, the lack of good abundance information in some parts of the range and the lack of porpoise bycatch monitoring and mitigation in many of the relevant fisheries are reasons for concern.

Range Atlantic Ocean

Status History

The Northwest Atlantic population was designated Threatened in April 1990 and in April 1991. Status re-examined and designated Special Concern in May 2003 and in April 2006.

Nuttall's Cottontail *nuttallii* subspecies

Sylvilagus nuttallii nuttallii

Special Concern

Assessment Criteria not applicable

Reason for Designation

This rabbit was first recorded in Canada about 70 years ago and has since increased its range in the Okanagan, where it may have reached the maximum possible extent of its distribution. Remaining rabbit habitat in the Okanagan is less than 8000 hectares, increasingly fragmented, and continues to be lost to urbanization and agriculture. The total

population size, based on available habitat, is probably less than 3500 individuals. Rescue potential from Washington is minimal because of the declining availability of habitat. There are substantial uncertainties about the current area of occupancy, which may have declined over the last few decades as habitat has been lost.

Range BC

Status History

Designated Special Concern in April 1994 and in April 2006.

Common Minke Whale North

Atlantic subspecies

Balaenoptera acutorostrata

acutorostrata

Not at Risk

Assessment Criteria not applicable

Reason for Designation

Calculations by the Species Specialist Subcommittee, based on survey estimates for some areas and informed judgements for others, suggest a total population in the order of 15,000 (6000 West Greenland, 1000 Gulf of St. Lawrence, 3000 Scotian Shelf, probably at least 5000 Newfoundland/Labrador = 15,000). Although the hunt in West Greenland may involve the same stock that occurs in eastern Canadian waters, recent and current removals are likely sustainable, given that the annual catch quota is 175, representing an offtake of ca. 0.01, which does not exceed replacement. Human-caused mortality from other potential threats does not exceed replacement.

Range Atlantic Ocean

Status History

Designated Not at Risk in April 2006.

Common Minke Whale North

Pacific subspecies

Balaenoptera acutorostrata

scammonii

Not at Risk

Assessment Criteria not applicable

Reason for Designation

There is no identifiable threat to the subspecies in the eastern North Pacific (there is no whaling; number of deaths from entanglement in fishing gear and ship strikes is not thought to be high enough to cause concern). There is considerable potential for rescue – mainly from United States waters to the north and south; individuals occurring in inshore waters in Canada could constitute a naturally small population.

Range Pacific Ocean

Status History

Designated Not at Risk in April 2006.

Gaspé Shrew

Sorex gaspensis

Not at Risk

Assessment Criteria not applicable

Reason for Designation

It is highly likely that this shrew is more widespread and abundant than presently believed. Although the occurrence of presumed preferred habitat is restricted and isolated in the landscape, it is not at risk. The species appears to be widespread in talus habitats throughout its range. Recent information questions the taxonomic status of this shrew. Whereas it may well be a subspecies of *Sorex dispar*, when the original designation was made, it was considered a Canadian endemic species.

Range QC NB NS

Status History

Designated Special Concern in April 1988. Status re-examined and designated Not at Risk in April 2006.

Southern Flying Squirrel

Glaucomys volans

Not at Risk

Great Lakes Plains population

Assessment Criteria not applicable

Reason for Designation

Flying squirrels are small inconspicuous nocturnal forest-dwelling rodents with impressive gliding ability. They are difficult to distinguish from the Northern Flying Squirrel. Dedicated sampling programs have generally revealed greater abundance and range than previously assumed. Its known area of occupancy has expanded. Habitat loss through deforestation and fragmentation of remaining forest may lead to extirpation of some local populations in the southern part of its range in Ontario, but does not currently pose a threat to the persistence of this population. The overall trend in habitat availability is stable or positive. Recent research in Ontario has revealed a much wider range of suitable habitat and reported a substantial range expansion. There is little information on this squirrel from Quebec as there have been no directed surveys for this species.

Range ON QC

Status History

Designated Special Concern in April 1988. Split into two populations in April 2006 and the Great Lakes Plains population was designated Not at Risk.

Southern Flying Squirrel*Glaucomys volans***Not at Risk****Atlantic (Nova Scotia) population**

Assessment Criteria not applicable

Reason for Designation

Flying squirrels are small inconspicuous nocturnal forest-dwelling rodents with impressive gliding ability. They are difficult to distinguish from the Northern Flying Squirrel. In Nova Scotia, the southern species was first detected in 1971, and until 2001, was only known from seven sites. New recent research located southern flying squirrels in 32 locations and over a much wider area in the southern part of the province than expected. Like a number of species in Nova Scotia, it is at the north of its range and disjunct. Habitat loss through deforestation and fragmentation of intact forest may lead to extirpation of some local populations, but does not currently pose a threat to the species' persistence and the population appears stable.

Range NS

Status History

Designated Special Concern in April 1988. Split into two populations in April 2006 and the Atlantic (Nova Scotia) population was designated Not at Risk.

Birds**Burrowing Owl***Athene cunicularia***Endangered**

Assessment Criteria A2bc; C1

Reason for Designation

This grassland owl has suffered significant declines across its North American range; Canadian populations declined 90% in the 1990s and the species is essentially extirpated from British Columbia and Manitoba. This population decline slowed somewhat between 1994 and 2004, but remained at approximately 57%. The true cause or causes of this widespread decline remain unknown.

Range BC AB SK MB

Status History

Designated Threatened in April 1979. Status re-examined and confirmed in April 1991. Status re-examined and designated Endangered in April 1995. Status re-examined and confirmed in May 2000 and in April 2006.

Ivory Gull*Pagophila eburnea***Endangered**

Assessment Criteria A2a; C1

Reason for Designation

Aboriginal Traditional Knowledge and intensive breeding colony surveys over the last four years indicate that the Canadian breeding population of this long-lived seabird has declined by 80% over the last 20 years. This bird feeds along ice-edge habitats in the high Arctic and breeds in very remote locations. Threats include contaminants in food chain, continued hunting in Greenland, possible disturbance by mineral exploration at some breeding locations, and

degradation of ice-related foraging habitats as a result of climate change.

Range NT NU NL

Status History

Designated Special Concern in April 1979. Status re-examined and confirmed in April 1996 and in November 2001. Status re-examined and designated Endangered in April 2006.

Vesper Sparrow *affinis* subspecies *Pooecetes gramineus affinis*

Endangered

Assessment Criteria B1ab(i,ii,iii)+2ab(i,ii,iii); C2a(i,ii); D1

Reason for Designation

This songbird, a subspecies of the Vesper Sparrow, is found in Canada only in coastal grasslands in the extreme southwestern corner of British Columbia, where it now breeds only at one site with a population of about 5 pairs. The taxon is declining in the United States as well, where it has a restricted distribution in western Washington and Oregon. Habitat loss is the greatest threat, both through direct destruction of habitat for urban development and through invasion by alien plant species.

Range BC

Status History

Designated Endangered in April 2006.

Golden-winged Warbler

Vermivora chrysoptera

Threatened

Assessment Criteria Met criterion for Endangered, A2be, but designated Threatened because the species is still widespread, shows the ability to maintain small pure populations within the Blue-winged Warbler range, is still expanding in Manitoba, and is thus not in imminent danger of extinction. Criterion met for Threatened: A2be.

Reason for Designation

This small songbird has declined by 79% over the last 10 years according to Breeding Bird Survey data from Canada. The main threat appears to be competition and genetic swamping (hybridization) from the closely-related Blue-winged Warbler, which is spreading north because of habitat change and perhaps climate change.

Range MB ON QC

Status History

Designated Threatened in April 2006.

Northern Saw-whet Owl *brooksi* subspecies

Aegolius acadicus brooksi

Threatened

Assessment Criteria Met criterion for Endangered, C2a(ii), with its small population and projected habitat loss, but designated as Threatened, C2a(ii), because of the presence of substantial protected areas.

Reason for Designation

This is a distinct subspecies endemic to Canada, with a small world population (ca. 1900 adults) restricted to the Queen Charlotte Islands. It is a forest specialist, preferring older forests with abundant nesting snags and an open understory in a landscape where such resources are continually becoming scarcer due to forest harvest.

Range BC

Status History

Designated Threatened in April 2006.

Louisiana Waterthrush

Seiurus motacilla

Special Concern

Assessment Criteria Met criterion for Threatened, D1, but designated Special Concern because the population in Canada has been stable over the last two decades and rescue effect from the United States is likely.

Reason for Designation

This wood warbler breeds along clear, shaded, coldwater streams in southern Ontario and possibly southwestern Quebec. The Canadian population is small – probably less than 200 pairs – but has been stable over the last two

decades and immigration from United States populations probably occurs. Habitat degradation, particularly from ATVs, may be a threat at some sites.

Range ON QC

Status History

Designated Special Concern in April 1991. Status re-examined and confirmed in April 1996 and in April 2006.

McCown's Longspur

Calcarius mccownii

Special Concern

Assessment Criteria not applicable

Reason for Designation

This species has experienced a severe population decline since the late 1960s. This trend appears, however, to have slowed in the past decade. The species is threatened by continuing habitat loss and degradation. It may also risk exposure to pesticides associated with increased breeding in cultivated fields.

Range AB SK

Status History

Designated Special Concern in April 2006.

Rusty Blackbird

Euphagus carolinus

Special Concern

Assessment Criteria not applicable

Reason for Designation

More than 70% of the breeding range of the species is in Canada's boreal forest. The species has experienced a severe decline that appears to be ongoing, albeit at a slower rate. There is no evidence to suggest that this trend will be reversed. Known threats occur primarily on the winter range, and include habitat conversion and blackbird control programs in the United States.

Range YT NT NU BC AB SK MB ON QC NB PE NS NL

Status History

Designated Special Concern in April 2006.

Red-shouldered Hawk

Buteo lineatus

Not at Risk

Assessment Criteria not applicable

Reason for Designation

In Canada, this forest-nesting species has been stable or increasing, depending on the region, over the last 10 to 20 years. The main threat to the species is habitat loss and degradation, which is likely to be most serious in the southern parts of its Canadian range. Populations are stable or increasing in most parts of the United States, so there is also a potential outside source for rescue.

Range ON QC NB

Status History

Designated Special Concern in April 1983. Status re-examined and confirmed in April 1996. Status re-examined and designated Not at Risk in April 2006.

Reptiles

Lake Erie Watersnake

Nerodia sipedon insularum

Endangered

Assessment Criteria B1ab(ii,iii,v)+2ab(ii,iii,v); C2a(i)

Reason for Designation

It has a small population, likely fewer than 1000 adults, confined to four small Canadian islands in western Lake Erie. Threats, which include loss of its shoreline habitats, mortality on roads, and destruction of hibernacula by quarries and construction, are increasing. Although persecution by people may be levelling off, it is still a significant threat to these snakes.

Range ON

Status History

Designated Endangered in April 1991 and in April 2006.

Western Painted Turtle

Chrysemys picta bellii

Endangered

Pacific Coast population

Assessment Criteria B1ab(i,ii,iii)+2ab(i,ii,iii); C2a(i); D1

Reason for Designation

There are few records from Vancouver Island and the mainland south coast / Fraser River valley, and both regions are undergoing major loss of wetlands and a rapid increase in roads, development, and people. Recent searches of the lower Fraser River valley and of eastern Vancouver Island indicate the subspecies has declined in some of the handful of areas where it was previously observed.

Range BC

Status History

Designated Endangered in April 2006.

Western Painted Turtle

Chrysemys picta bellii

Special Concern

Intermountain - Rocky Mountain population

Assessment Criteria not applicable

Reason for Designation

The number of turtles is likely small and declining because of extensive loss of wetland habitats and proliferation of roads.

Range BC

Status History

Designated Special Concern in April 2006.

Western Painted Turtle

Chrysemys picta bellii

Not at Risk

Prairie / Western Boreal - Canadian Shield population

Assessment Criteria not applicable

Reason for Designation

Populations are numerous and widespread and there is an abundance of good habitat, especially in the eastern part of the range (Ontario).

Range AB SK MB ON

Status History

Designated Not at Risk in April 2006.

Amphibians

Long-toed Salamander

Ambystoma macrodactylum

Not at Risk

Assessment Criteria not applicable

Reason for Designation

Despite high rates of habitat loss due to anthropogenic development in British Columbia's Lower Mainland and eastern Vancouver Island regions, which put stress upon native amphibians in general, and previous concerns over the status of Alberta populations, the species remains widespread and abundant throughout the majority of its Canadian range.

Range BC AB

Status History

Designated Not at Risk in April 2006.

Fishes**Atlantic Salmon***Salmo salar***Extirpated****Lake Ontario population**

Assessment Criteria not applicable

Reason for Designation

Once a prolific species throughout the Lake Ontario watershed, there has been no record of a wild Atlantic salmon since 1898. The Lake Ontario Atlantic salmon was extinguished through habitat destruction and through over-exploitation by a food and commercial fishery. Attempts to re-establish Atlantic salmon through stocking have failed, and the original strain is no longer available.

Range ON

Status History

Last reported in 1898. Designated Extirpated in April 2006.

Atlantic Salmon*Salmo salar***Endangered****Inner Bay of Fundy populations**

Assessment Criteria A2bc; C2a(i,ii); D1

Reason for Designation

These salmon represent a unique Canadian endemic; their entire biological distribution exists within Canada. Adult numbers are estimated to have declined by more than 95% in 30 years, and most rivers no longer have either adults or juveniles. In 2003, fewer than 100 adults are estimated to have returned to the 32 rivers known to have historically contained the species. There is no likelihood of rescue, as neighbouring regions harbour severely depressed, genetically dissimilar populations. The reasons for the collapse in adult abundances are not well understood. Reduced survival from smolt to adulthood in marine waters is thought to be a key factor. There are many possible causes of this increased mortality, including ecological community shifts; ecological / genetic interactions with farmed and hatchery Atlantic salmon; environmental shifts; and fisheries (illegal or incidental catch). Threats to the species in the freshwater environment are thought to be historical and contemporary in nature. Historical threats include loss and degradation of habitat (attributable to the construction of barriers to migration and logging); contemporary threats may include interbreeding with escaped farmed fish and environmental change (warmer temperatures, contaminants).

Range NB NS Atlantic Ocean

Status History

Designated Endangered in May 2001 and in April 2006.

Speckled Dace*Rhinichthys osculus***Endangered**

Assessment Criteria B1+2ab(iii)

Reason for Designation

The species is restricted to the Kettle River mainstem and two main tributaries in southcentral British Columbia where it appears to be limited by the availability of suitable habitat. As this population is isolated above Cascade Falls, it cannot be rescued from downstream United States populations. The Kettle River is a flow-sensitive system that appears to be experiencing increasing frequency of drought conditions. The species is threatened by these reduced water flows and projected increasing water demands.

Range BC

Status History

Designated Special Concern in April 1980. Status re-examined and designated Endangered in November 2002 and in April 2006.

White Shark***Carcharodon carcharias*****Endangered****Atlantic population****Assessment Criteria** A2b**Reason for Designation**

The species is globally distributed in sub-tropical and temperate waters, but absent from cold polar waters; hence Atlantic and Pacific populations in Canada are isolated from each other and are considered separate designatable units. This very large apex predator is rare in most parts of its range, but particularly so in Canadian waters, which represent the northern fringe of its distribution. There are only 32 records over 132 years for Atlantic Canada. No abundance trend information is available for Atlantic Canada. Numbers have been estimated to have declined by about 80% over 14 years (less than one generation) in areas of the Northwest Atlantic Ocean outside of Canadian waters. The species is highly mobile, and individuals in Atlantic Canada are likely seasonal migrants belonging to a widespread Northwest Atlantic population; hence the status of the Atlantic Canadian population is considered to be the same as that of the broader population. Additional considerations include the long generation time (~23 years) and low reproductive rates (estimated gestation is 14 months and average fecundity is 7 live-born young) of this species, which limit its ability to withstand losses from increase in mortality rates. Bycatch in the pelagic long line fishery is considered to be the primary cause of increased mortality.

Range Atlantic Ocean

Status History

Designated Endangered in April 2006.

Carmines Shiner***Notropis percobromus*****Threatened****Assessment Criteria** D2**Reason for Designation**

This freshwater fish species occurs in an extremely restricted area of Manitoba. The major threat to the species is the alteration in water flow as a result of stream regulation.

Range MB

Status History

Designated Special Concern in April 1994. Status re-examined and designated Threatened in November 2001 and in April 2006.

Chinook Salmon***Oncorhynchus tshawytscha*****Threatened****Okanagan population**

Assessment Criteria Met criteria for Endangered, D1, but designated Threatened because of the rescue effect. Met criteria for Threatened: D1+2.

Reason for Designation

The Chinook salmon (Okanagan population) are the only remaining Columbia Basin population of Chinook salmon in Canada, and are geographically, reproductively and genetically distinct from all other Canadian Chinook salmon populations. They consist of anadromous salmon that migrate to and from the Pacific Ocean through the Columbia River, and also individuals that remain in Osoyoos Lake. The Chinook salmon (Okanagan population) was once large enough to support an important food and trade fishery prior to settlement by non-native people. The population used to occupy the area from Osoyoos Lake to Okanagan Lake, but McIntyre Dam has limited access to only the area below the dam and in Osoyoos Lake. As well as this habitat loss, the population was depleted by historic overfishing in the Columbia River and juvenile and adult mortality due to dams downstream on the Columbia River. Fisheries exploitation in the ocean, deterioration in the quality of the remaining Canadian habitat, and new predators and competitors such as non-native fishes also contributed to the current depleted state of the population. Genetic data show evidence of successful reproduction and maturation by individuals in this population, but also that this small population has genetic diversity similar to much larger populations in adjacent areas of the Columbia River basin, and is closely related to those populations. The genetic data, as well as the presence of fish of hatchery origin in the Canadian portion of the Okanagan River indicate that it is very likely that fish from elsewhere in the upper Columbia River basin have contributed reproductively to the population. With spawning numbers as low as 50 adults, the population is at risk of extinction from habitat loss, exploitation and stochastic factors, but may also be subject to rescue from populations in adjacent areas of the Columbia River basin.

Range BC Pacific Ocean

Status History

Designated Endangered in an emergency assessment in May 2005. Status re-examined and designated Threatened in April 2006.

Shortfin Mako***Isurus oxyrinchus*****Threatened****Atlantic population**Assessment Criteria A2bReason for Designation

As a large (maximum length 4.2 m), relatively late-maturing (7-8 yrs) pelagic shark, the species has life-history characteristics making it particularly susceptible to increased mortality from all sources, including human activities. The species is circumglobal in temperate and tropical waters. Individuals found in Atlantic Canada are considered part of a larger North Atlantic population. There does not appear to be any reason to assume that the Canadian Atlantic "population" is demographically or genetically independent from the larger Atlantic population, so the status of the species in Atlantic Canada should reflect the status throughout the North Atlantic. Although there is no decline in an indicator of status for the portion of the species that is in Atlantic Canada, two analyses suggest recent declines in the North Atlantic as a whole (40% 1986-2001; 50% 1971-2003). The main causes of the species' decline (mortality due to bycatch in longline and other fisheries) are understood and potentially reversible, but these sources of mortality have not been adequately reduced.

Range Atlantic OceanStatus History

Designated Threatened in April 2006.

American Eel***Anguilla rostrata*****Special Concern**Assessment Criteria not applicableReason for Designation

Indicators of the status of the total Canadian component of this species are not available. Indices of abundance in the Upper St. Lawrence River and Lake Ontario have declined by approximately 99% since the 1970s. The only other data series of comparable length (no long term indices are available for Scotia/Fundy, Newfoundland, and Labrador) are from the lower St. Lawrence River and Gulf of St. Lawrence, where four out of five time series declined. Because the eel is panmictic, i.e. all spawners form a single breeding unit, recruitment of eels to Canadian waters would be affected by the status of the species in the United States as well as in Canada. Prior to these declines, eels reared in Canada comprised a substantial portion of the breeding population of the species. The collapse of the Lake Ontario-Upper St. Lawrence component may have significantly affected total reproductive output, but time series of elver abundance, although relatively short, do not show evidence of an ongoing decline. Recent data suggest that declines may have ceased in some areas, however, numbers in Lake Ontario and the Upper St. Lawrence remain drastically lower than former levels, and the positive trends in some indicators for the Gulf of St. Lawrence are too short to provide strong evidence that this component is increasing. Possible causes of the observed decline, including habitat alteration, dams, fishery harvest, oscillations in ocean conditions, acid rain, and contaminants, may continue to impede recovery.

Range ON QC NB PE NS NL Atlantic OceanStatus History

Designated Special Concern in April 2006.

Blue Shark***Prionace glauca*****Special Concern****Atlantic population**Assessment Criteria not applicableReason for Designation

This species is a relatively productive shark (maximum age 16-20 years, mature at 4-6 years, generation time 8 years, 25-50 pups every two years) but as an elasmobranch, populations are susceptible to increased mortality from all sources including from human activities. The species is considered to have a single highly migratory population in the North Atlantic, of which a portion is present in Canadian waters seasonally. The abundance index which is considered to best represent the whole population has declined 60% 1986-2000 but another index shows no long-term trend for the whole population 1971-2003. Indices of abundance in and near the Canadian waters show variable

trends from no decline to 60% decline from the 1980s to early 2000s. There is evidence for a decline in mean length in longline fisheries in Canadian waters 1986-2003. The primary threat is bycatch in pelagic longline fisheries; although the threat is understood and is reversible, it is not being effectively reduced through management. Assessing the impact of bycatch on the population would benefit from better information on proportion of individuals discarded which survive. It appears that recent fishery removals from the North Atlantic have been several tens of thousands of tons annually. Estimated Canadian removals, a small proportion of the total, have been declining since the early 1990s and recently have averaged around 600 t/yr.

Range Atlantic Ocean

Status History

Designated Special Concern in April 2006.

Deepwater Sculpin

Myoxocephalus thompsonii

Special Concern

Great Lakes - Western St. Lawrence populations

Assessment Criteria not applicable

Reason for Designation

This species occurs in the deeper parts of 10 coldwater lakes, including lakes Superior, Huron and Ontario, in Ontario and Quebec. Previously thought to be exterminated in Lake Ontario, it now appears to be reestablished in that lake, albeit in small numbers. Populations have been exterminated in 2 lakes in Quebec due to eutrophication of these lakes, and may be in decline in Lake Huron, possibly in relation to the introduction of zebra mussel.

Range ON QC

Status History

The "Great Lakes - Western St. Lawrence populations" unit (which includes the former "Great Lakes populations" unit, designated Threatened in April 1987) was designated Special Concern in April 2006.

River Redhorse

Moxostoma carinatum

Special Concern

Assessment Criteria not applicable

Reason for Designation

This freshwater fish species occurs in Ontario and Quebec and although it has been collected at new locations in both provinces, sometimes in large numbers, this is thought to reflect the use of more effective sampling techniques such as boat electrofishing. It has likely disappeared historically from the Ausable, Châteauguay and Yamaska rivers, since the use of boat electrofishing has failed to collect it recently. Threats to the species include habitat degradation (pollution, siltation), stream regulation that affects water flow (dams) and habitat fragmentation (dams). The Canadian range is highly fragmented and rescue effect is improbable because of the precarious conservation status in adjoining US States.

Range ON QC

Status History

Designated Special Concern in April 1983. Status re-examined and confirmed in April 1987 and in April 2006.

Deepwater Sculpin

Myoxocephalus thompsonii

Not at Risk

Western populations

Assessment Criteria not applicable

Reason for Designation

This species is widely distributed in western Canada where it is found in the deepest parts of at least 52 coldwater lakes in northwestern Ontario, Manitoba, Saskatchewan, Alberta and the Northwest Territories. There is no evidence to indicate population declines, or of any threats that would convey a degree of risk to these populations.

Range NT AB SK MB ON

Status History

Designated Not at Risk in April 2006.

Blue Shark	<i>Prionace glauca</i>	Data Deficient
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Pacific populationAssessment Criteria not applicableReason for Designation

The species is apparently present regularly in Canada's Pacific waters, probably as part of a wider North Pacific population. Catch information and data from the International Pacific Halibut Commission longline survey (1998-2004) suggest the species is widespread on the continental shelf with a concentration at the shelf break. It has also been taken, at times in large numbers, in oceanic waters. No information is available to assess status in Canada, as there have been few records in existing surveys. Pacific-wide indices are of low reliability because of historical misidentification issues, but one recent assessment from United States National Marine Fisheries Service suggests that fishing mortality on this species in the North Pacific is well below the level of maximum sustainable yield. Level of fishery removals (bycatch) in the Canadian Pacific are low, of the order of 20-40 t/yr.

Range Pacific OceanStatus History

Species considered in April 2006 and placed in the Data Deficient category.

Darktail Lamprey	<i>Lethenteron alaskense</i>	Data Deficient
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Assessment Criteria not applicableReason for Designation

This freshwater fish is the only representative of its species in the western Arctic aquatic ecozone. Too little of its biology and actual distribution is known for an assessment to be made.

Range NTStatus History

Species considered in April 1990 and in April 2006 and placed in the Data Deficient category.

White Shark	<i>Carcharodon carcharias</i>	Data Deficient
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Pacific populationAssessment Criteria not applicableReason for Designation

The species is globally distributed in sub-tropical and temperate waters, but absent from cold polar waters; hence Atlantic and Pacific populations in Canada are isolated from each other and are considered separate designatable units. This very large apex predator is rare in most parts of its range, but particularly so in Canadian waters, which represent the northern fringe of its distribution. There are only 13 records over 43 years for the Pacific coast of Canada. No abundance trend information is available for Pacific Canadian waters, or for adjacent waters in the United States that would permit a status designation.

Range Pacific OceanStatus History

Species considered in April 2006 and placed in the Data Deficient category.

Arthropods

Aweme Borer	<i>Papaipema aweme</i>	Endangered
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Assessment Criteria D1Reason for Designation

Prior to the collection of one specimen in Ontario in 2005, this moth was last collected 70 years earlier. It is known from only five localities globally, three of which are in Canada. Although the species is poorly known, it is apparently restricted to a rare, fragmented and threatened habitat. Repeated collecting at all of the historic locations has not resulted in relocation of the species, and intensive collecting in the vicinity of the recent record has not yielded any additional specimens.

Range ON

Status History

Designated Endangered in April 2006.

Eastern Persius Duskywing

Erynnis persius persius

Endangered

Assessment Criteria B1ab(iii)+2ab(iii); C2a(i); D1

Reason for Designation

This lupine-feeding butterfly has been confirmed from only two sites in Canada. It inhabits oak savannahs in southern Ontario, a habitat that has undergone substantial declines and alterations. Larval host plant populations have been greatly reduced. There have been no confirmed records of this butterfly for 18 years, but unconfirmed sight records suggest that the species might still exist in Canada.

Range ON

Status History

Designated Endangered in April 2006.

Five-spotted Bogus Yucca Moth

Prodoxus quinquepunctellus

Endangered

Assessment Criteria B1ac(iv)+2ac(iv)

Reason for Designation

This highly specialized moth exists in Canada as a single population that occurs in a very small, restricted area, isolated from the main range of the species in the United States. The moth is entirely dependent on the obligate mutualistic relationship between its host plant (Soapweed), and the plant's pollinator (Yucca Moth), both of which are at a high level of risk. It is threatened by the high level of wild ungulate herbivory, which in some years greatly reduces recruitment of the moth, its host plant and the host plant pollinator, and by off-road vehicles that destroy the host plant.

Range AB

Status History

Designated Endangered in April 2006.

Gold-edged Gem

Schinia avemensis

Endangered

Assessment Criteria B2ab(iii)

Reason for Designation

This moth is a habitat specialist that needs active dunes or blow-outs with populations of its sole larval host plant. It is known from only two small populations in Canada and two in the United States. Large-scale decline in active dune habitat over the past 100 years has likely resulted in a corresponding reduction in the moth. Only very small, scattered, isolated patches of suitable habitat, totaling approximately 6 km², remain. They are threatened by habitat loss in the form of stabilization of active dunes by both native and introduced vegetation and by overgrazing of its larval host plant, which severely impacts small, isolated populations of the moth. The closest population of the moth in the United States is about 1200 km to the south in Colorado, so immigration of individuals into the Canadian population is not possible.

Range AB SK MB

Status History

Designated Endangered in April 2006.

Half-moon Hairstreak

Satyrrium semiluna

Endangered

Assessment Criteria B1ab(iii,v)+2ab(iii,v)

Reason for Designation

The butterfly occurs as disjunct populations in two small, restricted areas at the northern extreme of the species' range. The species' population has likely declined in the past as a result of habitat loss. Both populations continue to be threatened by habitat loss and degradation. In British Columbia the species occurs in an area under severe pressure for development. In both Alberta and British Columbia, invasive weeds also pose a serious threat.

Range BC AB

Status History

Designated Endangered in April 2006.

Non-pollinating Yucca Moth*Tegeticula corruptrix***Endangered**

Assessment Criteria B1ac(iv)+2ac(iv)

Reason for Designation

This highly specialized moth exists in Canada as a single viable population that occurs in a very small, restricted area, isolated from the main range of the species in the United States. A second isolated population is on the verge of disappearing or has already been lost. The moth is entirely dependent on the obligate mutualistic relationship between its host plant (Soapweed), which is Threatened, and the plant's pollinator (Yucca Moth), which is Endangered. It is threatened by the high level of wild ungulate herbivory, which in some years greatly reduces recruitment of the moth, its host plant and the host plant pollinator, and by off-road vehicles that destroy the host plant.

Range AB

Status History

Designated Endangered in April 2006.

Sonora Skipper*Polites sonora***Special Concern**

Assessment Criteria not applicable

Reason for Designation

This skipper occurs in some moist grassy openings in a forested landscape. It is known from only six locations in a small, restricted area of Canada where its distribution is very patchy and it does not occupy all apparently suitable available habitats. The ability of Canadian populations to benefit from immigration from other Canadian populations or from populations in adjacent Washington State is likely limited at best. The skipper is threatened by intensive grazing and habitat loss due to natural habitat change and road construction. However, it shows some ability to make use of some man-made habitats, such as grassy roadside areas, agricultural meadows and small clearcuts, but only if these habitats are moist or mesic.

Range BC

Status History

Designated Special Concern in April 2006.

Molluscs**Blue-grey Taildropper Slug***Prophysaon coeruleum***Endangered**

Assessment Criteria B1ab(iii)+2ab(iii)

Reason for Designation

This species has a very small extent of occurrence (~ 150 km²) and area of occupancy (< 5 km²), and a continuing decline is projected in quality of habitat. It is found in remnant patches of older forest with a deciduous component. It is currently known from only 5 locations on southern Vancouver Island. Threats at these locations include heavy recreational use and the impacts of introduced plants and animals, including introduced invasive slugs and snails.

Range BC

Status History

Designated Endangered in April 2006.

Mapleleaf Mussel	<i>Quadrula quadrula</i>	Endangered
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Saskatchewan - Nelson populationAssessment Criteria B2ab(i,ii,iii,iv)Reason for Designation

Small area of occupancy; all localities but one are in one system, the Red Assiniboine drainage, and a major event could extirpate the population; no evidence for recruitment (few small individuals); numerous threats including degrading water quality from agriculture, domestic waste, commercial and industrial activities.

Range MBStatus History

Designated Endangered in April 2006.

Rainbow Mussel	<i>Villosa iris</i>	Endangered
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Assessment Criteria B2ab(i,ii,iii,iv)Reason for Designation

This attractive yellowish green to brown mussel with green rays is widely distributed in southern Ontario but has been lost from Lake Erie and the Detroit and Niagara rivers and much of Lake St. Clair due to zebra mussel infestations. It still occurs in small numbers in several watersheds but the area of occupancy and the quality and extent of habitat are declining, with concern that increasing industrial agricultural and intensive livestock activities will impact the largest population in the Maitland River.

Range ONStatus History

Designated Endangered in April 2006.

Mapleleaf Mussel	<i>Quadrula quadrula</i>	Threatened
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Great Lakes - Western St. Lawrence population

Assessment Criteria Met criteria for Endangered, B2ab(i,ii,iii,iv), but designated Threatened because populations are stable or perhaps increasing in most existing locations. Criteria met for Threatened: B1ab(i,ii,iii,iv)+2ab(i,ii,iii,iv).

Reason for Designation

This heavy shelled mussel that is shaped like a maple leaf, has a very small area of occupancy in watersheds dominated by agriculture with past and continuing declines due to habitat loss and degradation. Although the mussel has been lost from the Great Lakes and connecting channels due to zebra mussels, the numbers of mature individuals appear to be very large in two of the watersheds and three of five watersheds have recovery teams in place for aquatic species at risk. Zebra mussels continue to be a potential threat in watersheds that have numerous impoundments.

Range ONStatus History

Designated Threatened in April 2006.

Vascular Plants

American Columbo	<i>Frasera caroliniensis</i>	Endangered
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Assessment Criteria B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v); C2a(i)Reason for Designation

A long-lived perennial with 11 to 12 extant Canadian populations. These are fragmented and restricted geographically to a highly agricultural and urbanized region that is subject to continuing habitat loss and degradation. Populations consist primarily of vegetative rosettes with only a few flowering plants produced in a given year. The spread of invasive plants within its habitat is a major threat to the persistence of the species. Further losses of populations due to site development are anticipated.

Range ON

Status History

Designated Special Concern in April 1993. Status re-examined and designated Endangered in April 2006.

Brook Spike-primrose***Epilobium torreyi*****Endangered**Assessment Criteria D1Reason for Designation

Although no plants have been seen at the two known sites after intensive directed surveys, there is still the possibility that some seeds may remain in the soil seed bank given the relatively short period of time since the last observation of plants in 1993, or that previously overlooked populations may be found.

Range BCStatus History

Designated Endangered in April 2006.

Cherry Birch***Betula lenta*****Endangered**Assessment Criteria A2ac; B1ab(ii,iii,v)+2ab(ii,iii,v); C1+2a(i,ii); D1Reason for Designation

A widespread deciduous tree of eastern North America that is known from a single small population in Ontario. This population has declined considerably over the past four decades with fewer than 15 trees remaining in the wild. Its habitat is surrounded by residential development and the population is at continued risk from storms, erosion and habitat loss and degradation.

Range ONStatus History

Designated Endangered in April 2006.

Coast Microseris***Microseris bigelovii*****Endangered**Assessment Criteria B1ab(ii,iii)+2ab(ii,iii)Reason for Designation

A small annual herb present in a few fragmented sites within a narrow coastal fringe on southeast Vancouver Island in a densely inhabited urbanized region. Development, recreational activities, site management practices and competition from invasive alien plants continue to impact the species.

Range BCStatus History

Designated Endangered in April 2006.

Contorted-pod Evening-primrose***Camissonia contorta*****Endangered**Assessment Criteria B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v)Reason for Designation

An annual herb restricted to several dry, open and sandy coastal habitats of very small size. The small fragmented populations are impacted by on-going habitat loss, high recreational use and competition with several invasive exotic plants.

Range BCStatus History

Designated Endangered in April 2006.

Dwarf Woolly-heads *Psilocarphus brevissimus* **Endangered**

Southern Mountain population

Assessment Criteria B1ac(iv)+2ac(iv)

Reason for Designation

An annual herb restricted to a very small range and present at only three small sites on private lands within the COSEWIC Southern Mountain Ecological Area of British Columbia. Population size is subject to extreme fluctuations in the number of mature individuals due to variation in precipitation levels and the population is at risk from such factors as increased land development in the region and land use practices.

Range BC

Status History

Designated Endangered in November 2003. Renamed Dwarf Woolly-heads(Southern Mountain population) in April 2006 and designated Endangered.

Rough Agalinis *Agalinis aspera* **Endangered**

Assessment Criteria B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v); C2a(i)

Reason for Designation

An herbaceous annual having a restricted geographical range and occupying small prairie remnants mainly along roadsides in southern Manitoba. The few small populations are at risk from such impacts as late season mowing, burning, overgrazing and road expansion.

Range MB

Status History

Designated Endangered in April 2006.

Short-rayed Alkali Aster *Symphotrichum frondosum* **Endangered**

Assessment Criteria B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v)

Reason for Designation

An annual herb of lake shorelines present at only a few remaining sites in restricted habitats. The small populations are subject to disruption from such activities as trampling, beach management, spread of invasive plants and potential development of a major facility at one of the primary sites.

Range BC

Status History

Designated Endangered in April 2006.

Bolander's Quillwort *Isoetes bolanderi* **Threatened**

Assessment Criteria D2

Reason for Designation

A small aquatic plant currently known in Canada from only one small lake in southwestern Alberta. The population has a large number of plants but is prone to being extirpated by a single, unpredictable event that could affect the entire population in a short period of time. Another population in a nearby lake has already disappeared over the past 50 years.

Range AB

Status History

Designated Special Concern in April 1995. Status re-examined and designated Threatened in April 2006.

Green-scaled Willow *Salix chlorolepis* **Threatened**

Assessment Criteria D1

Reason for Designation

An endemic shrub restricted to the serpentine outcrops of Mount Albert in Gaspésie Provincial Park, Quebec. The low numbers of the shrub located on a single mountain top are at risk from stochastic events, potential impact of the exotic tussock moth, and limited impact from hikers along the Appalachian Trail.

Range QC

Status History

Designated Threatened in April 2006.

Smooth Goosefoot***Chenopodium subglabrum*****Threatened**

Assessment Criteria Met criteria for Endangered, B2b(iii)c(iv), but designated Threatened due to a large number of sites scattered over a large area. Criteria met for Threatened: B2b(iii)c(iv).

Reason for Designation

An herbaceous annual with fluctuating populations of relatively small size. The species is restricted to areas of active sand habitats in southern Alberta, Saskatchewan and Manitoba. Current risks to the species include sand dune stabilization, invasive species, oil and gas development and recreational activities.

Range AB SK MB

Status History

Designated Special Concern in April 1992. Status re-examined and designated Threatened in April 2006.

Dwarf Woolly-heads***Psilocarphus brevissimus*****Special Concern****Prairie population**

Assessment Criteria not applicable

Reason for Designation

This population is widely distributed in Saskatchewan and Alberta at more than 40 sites with large among-year fluctuations in numbers of mature individuals and with concerns over potentially significant future impacts. These pertain to potential future development of coal-bed methane gas extraction in a significant part of the range of the population and disruptions from pipeline construction.

Range AB SK

Status History

Designated Special Concern in April 2006.

Serpentine Stitchwort***Minuartia marcescens*****Not at Risk**

Assessment Criteria not applicable

Reason for Designation

A globally rare perennial herb which is present almost exclusively in Canada in disjunct and fragmented populations found on basic soils over serpentine outcrops at higher elevations. Several large populations occur in protected areas with minimal threats identified for the species.

Range QC NL

Status History

Designated Not at Risk in April 2006.

Mosses**Delicate Luster Moss*****Isopterygium tenerum*****Not at Risk**

Assessment Criteria not applicable

Reason for Designation

This species is a small, shiny light green creeping moss. In Nova Scotia, it is found in the habitat of Coastal Plain species. It grows in a variety of habitats including soil and rocks along the wet margins of lakes and rivers. Although

the species has a Canadian distribution restricted to southern Nova Scotia, it is more common and continuously distributed at known locations than previously thought. There are no direct or imminent threats to support an “at-risk” status.

Range NS

Status History

Designated Not at Risk in April 2006.

Lichens

Seaside Centipede Lichen

Heterodermia sitchensis

Endangered

Assessment Criteria D1

Reason for Designation

This is a foliose lichen restricted to shoreline Sitka Spruce trees on the west coast of Vancouver Island. It has been documented from only ten locations in Canada, 11 worldwide. It requires high levels of nitrogen, so is restricted to sites subject to nitrogen enrichment, for example, sea lion haul-out sites and bird nest sites. The species may have poor dispersal abilities. It is highly vulnerable to tsunamis, and intensified winter storm activity associated with global warming.

Range BC

Status History

Designated Endangered in April 1996. Status re-examined and confirmed in May 2000 and in April 2006.

Cryptic Paw

Nephroma occultum

Special Concern

Assessment Criteria not applicable

Reason for Designation

This foliose lichen is endemic to western North America where it is known in Canada from 45 locations, however there are likely more undiscovered locations. The Canadian sites account for more than 50% of the global range with only 5 locations protected from forest harvesting. The species has restricted habitat requirements and grows in mid to lower canopy of old growth coastal and interior humid cedar-hemlock forest. It reproduces only by vegetative propagules with limited dispersal distance. The species is vulnerable to forest harvesting, changes in understory humidity, insect defoliation (hemlock looper), and fire.

Range BC

Status History

Designated Special Concern in April 1995 and in April 2006.

Ghost Antler

Pseudevernia cladonia

Special Concern

Assessment Criteria not applicable

Reason for Designation

The species is a chalky white, finely branched macrolichen occurring on twigs of conifers in cool montane and coastal spruce-fir forests in eastern North America. It is very patchily distributed in New Brunswick and Nova Scotia, probably owing to dispersal limitations, and in southeastern Quebec, it is restricted to scattered mountaintops >800 m in elevation and to the height-of-land along the border with the United States. In its montane locations, the construction of communication towers, alpine ski development, and logging have caused some reductions in the area and quality of habitat. In the Maritimes, some population losses are attributable to logging and housing development. The severity of the threats is offset by the abundance of the species over a broad area and potential discovery of large populations on some mountain tops in Quebec.

Range QC NB NS

Status History

Designated Special Concern in April 2006.

Notes

Lake sturgeon, *Acipenser fulvescens*: The reassessment of the lake sturgeon that was scheduled for the April 2006 COSEWIC meeting was deferred so that the basis for delineating designatable units could be better documented. An update status report to support COSEWIC's previous assessment from May 2005 is currently not available. COSEWIC will defer forwarding its assessment of lake sturgeon to the Minister of the Environment for consideration for addition to Schedule 1 of the *Species at Risk Act* until an update status report is approved.

Purple Spikerush, *Eleocharis atropurpurea*: Report withdrawn for one year to allow inclusion of Aboriginal traditional knowledge information on population occurrence and size.

Sowerby's Beaked Whale, *Mesoplodon bidens*: Report withdrawn to allow incorporation of information related to perceived threats.

Westslope Cutthroat Trout, *Oncorhynchus clarkii lewisi*: Report withdrawn to clarify eligibility of populations to be assessed. A status report to support COSEWIC's previous assessment from May 2005 is currently not available. COSEWIC will defer forwarding its assessment of westslope cutthroat trout to the Minister of the Environment for consideration for addition to Schedule 1 of the *Species at Risk Act* until a status report is approved.

Wood Turtle, *Glyptemys insculpta*: Report withdrawn to integrate more details on population abundance and decline in the report, and to clarify information on designatable units.

APPENDIX VIII

CANADIAN SPECIES AT RISK

August 2006



Aussi disponible en français

COSEWIC
COMMITTEE ON THE STATUS OF
ENDANGERED WILDLIFE
IN CANADA



COSEPAC
COMITÉ SUR LA SITUATION DES
ESPÈCES EN PÉRIL
AU CANADA

