RENEW Report 12

2001-2002 ANNUAL REPORT

RECOVERY OF NATIONALLY ENDANGERED WILDLIFE

Canadian Endangered Species
Conservation Council

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This report was produced by the Canadian Wildlife Service of Environment Canada in cooperation with the provinces, territories, Fisheries and Oceans Canada, Parks Canada Agency, authorized Wildlife Management Boards and many individuals and non-government groups. The printed report is complemented by the RENEW Web site (**www.speciesatrisk.gc.ca/species/sar/efforts/index.htm**), soon to move to **www.renew-rescape.ca**).

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Disclaimer:

We are grateful to the recovery community, notably the recovery team chairs and responsible jurisdictions, for contributing the information for this report. The Canadian Wildlife Service disclaims responsibility for the accuracy of the information contributed.

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REPORT from the CO-CHAIRS

STEWARDSHIP, AN ETHIC BY WHICH CANADIANS CARE FOR OUR LAND, WATER AND AIR AS PARTS OF A NATURAL LIFE SUPPORT SYSTEM AND ACT TO SUSTAIN AND ENHANCE IT FOR GENERATIONS TO COME, goes well beyond efforts to contribute to the recovery of species at risk. Nevertheless, it is the link between stewardship and recovery that we are profiling in this year's annual report of the national recovery program known as RENEW.

The provinces and territories along with the Government of Canada are putting forward *Canada's Stewardship Agenda: A Plan for Collaboration*. As a first step in ensuring national consistency and coordination of stewardship efforts, the Agenda targets the key capacity and network issues and draws extensively from the results of consultations. Over the next few months the federal, provincial and territorial governments will further develop the Agenda by implementing the priority actions, fine tuning the longer term action plan and continuing to seek other partners and contributions. Funding for these actions will come from a variety of sources, but will rely heavily on existing stewardship programs in Canada, of which there are many.

The Agenda is supported by a "Stewardship Canada" web portal featured on page 3 of this report. In the "Status of Recovery" table that forms the main section of the report, you will note frequent references to stewardship actions that are benefiting species at risk. You will also notice the participation of Wildlife Management Boards, established by comprehensive land claim agreements as co-mangement bodies or institutions of public government dealing with wildlife. The involvement of Wildlife Management Boards and Aboriginal organizations in the national recovery program is expanding, bringing with it the benefits of Aboriginal traditional knowledge in recovery planning and increased participation of Aboriginal community members in recovery actions.

The "Status of Recovery" table grows from year to year as more species become the focus of recovery effort, and the effort and funding expended on recovery are increasing accordingly, as documented in these annual reports. Occasionally a species is removed from the purview of RENEW as a result of downlisting by COSEWIC. This year for example, the Eastern Harlequin Duck was downlisted to Special Concern, and responsibility for management of this species has begun to shift from the more targeted recovery program to the broader migratory birds conservation program. Downlisting of species is the overall goal of recovery—what the dedicated individuals on recovery teams and in communities across the country are working towards. But recovery occurs small step by small step and can take decades to achieve. In this report we celebrate the small steps forward that were made in 2001-2002 and the contributions made by individual Canadians. We couldn't save species without you.

Robert McLean
A/ Director General
Canadian Wildlife Service
Environment Canada

Barry Sabean
Director, Wildlife Management
Department of Natural Resources
Government of Nova Scotia

Co-Chairs, Canadian Wildlife Directors Committee, 2002

HIGHLIGHTS of 2001-2002

Of 118 Endangered, 94 Threatened and 17 Extirpated species on the Nov. 2001 COSEWIC list:

83
have recovery teams, totalling 468 team members

14
have final recovery strategies or plans

68
have recovery plans or strategies in development

85
are the direct focus of recovery efforts

42
others are included in ecosystem recovery*

22
show stable or increasing population trend

$ 26.2 million
expended on recovery (salaries + expenses)

Employment equivalent to about 158 salaried and 18 volunteer people working full-time

196
organizations made financial contributions

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167 public consultation sessions were organized by recovery teams

22 recovery teams are incorporating Aboriginal Traditional Knowledge or community knowledge into recovery planning

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Try our "species search" Web site at

www.speciesatrisk.gc.ca/Species/English/SearchRequest.cfm

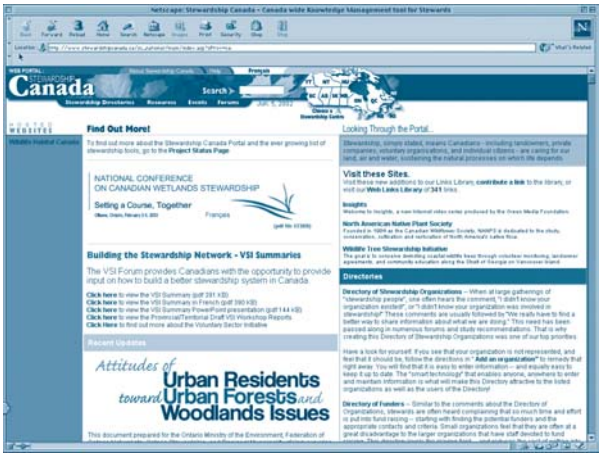
to learn more about recovery

* to the extent that their range overlaps with the geographic area covered by the ecosystem plan

STEWARDSHIP and RECOVERY

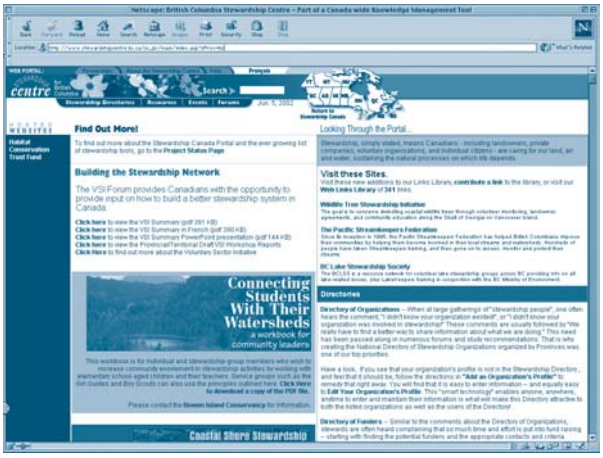
Visit the Stewardship Canada Web Portal at
www.stewardshipcanada.ca
Naturally Connecting Canadians

Stewardship Canada Portal URL:
www.stewardshipcanada.ca/sc_national/main/index.asp?sProv+ca



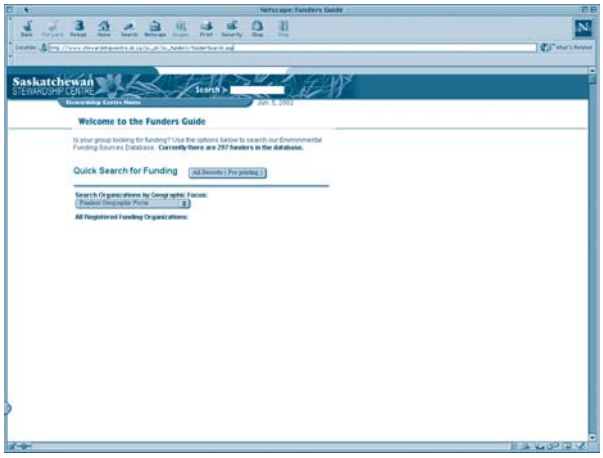
- a growing network of knowledge management toolkit for stewards
- Activated Stewardship Centres are BC, SK, ON—more to come
- Access any Prov./Terr. Stewardship Centre by clicking on the activated map

British Columbia URL:
www.stewardshipcentre.bc.ca/sc_bc/main/index.asp?sProv=bc



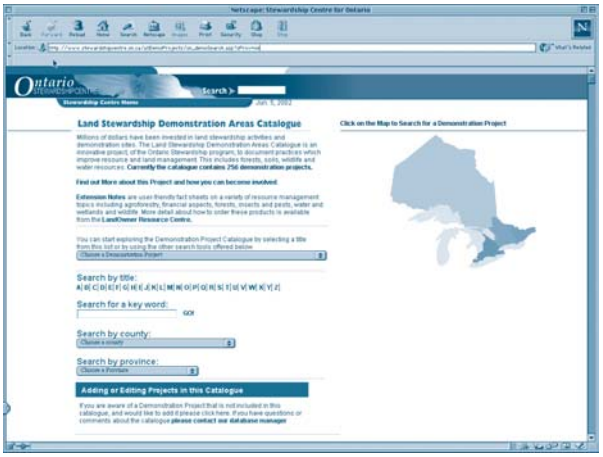
- All Prov./Terr. Stewardship Centres have unique mastheads
- All Stewardship Centres share common applications, services and system architecture

Saskatchewan URL:
www.stewardshipcentre.sk.ca/sc_sk/sc_funders/funderSearch.asp



- The portal contains resources, here a searchable list of stewardship funders throughout Canada

Ontario URL:
www.stewardshipcentre.on.ca/allDemoProjects/on_demoSearch.asp?sProv=on



- The portal contains information about stewardship demonstration projects and case studies
- You can contribute your own project/experiences

STATUS of RECOVERY

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
	MAMMALS (also see No. 100)			
1	**Badger, American** *Taxidea taxus jeffersonii* Not at Risk (1979) Endangered (2000)	BC, Parks	Ian Adams, *Corvus Communications*, ianadams@cintek.com	Recovery team is in place; recovery plan draft
2	**Badger, American** *Taxidea taxus jacksoni* Not at Risk (1979) Endangered (2000)	ON	**Contact**: Ron Gould, *ON–MNR*, Ron.Gould@mnr.gov.on.ca	Recovery team being formed; drafting recovery strategy to begin in 2002
3	**Bat, Pallid** *Antrozous pallidus* Special Concern (1988) Threatened (2000)	BC, CWS (for federal lands)	Orville Dyer, *BC–MWLAP*, Orville.Dyer@gems4.gov.bc.ca	Newly established recovery team; plan to produce a recovery plan, in cooperation with the SOSCP
4	**Bison, Wood** *Bison bison athabascae* Endangered (1978) Threatened (1988, 2000)	MB, AB, BC, NWT, YT, CWS, Parks, YFWMB[2]	Cormack Gates, *University of Calgary*, ccgates@nucleus.com	Recovery plan was published in 2001; recovery actions have been underway since 1963
5 6 7	**Caribou, Peary** *Rangifer tarandus pearyi* 5 [High Arctic pop.] Endangered (1991) 6 [Banks Island pop.] Endangered (1991) 7 [Low Arctic pop.] Threatened (1991)	NWT, NU, NWMB[1], WMAC(NWT)[2], CWS, Parks	James Schaefer, *Trent University*, JSchaefer@trentu.ca	Recovery strategy is in draft, approval is on hold; multi-species mgmt plan for Banks Isl will be recommended by the Sachs Hunters and Trappers Committee, IGC and WMAC (NWT)
8	**Caribou, Woodland** [Atlantic -Gaspésie pop.] *Rangifer tarandus caribou* Threatened (1984) Endangered (2000)	QC	Gilles Lamontagne, *QC–FAPAQ* gilles.lamontagne@fapaq.gouv.qc.ca	A new recovery team has been formed; a new recovery plan is in development (an update of the 1994 plan)
9	**Caribou, Woodland** [Boreal pop.] *Rangifer tarandus caribou* Threatened (2000)	AB, BC, QC, MB, ON, NF, NWT, SK WMAC(NWT)[2], SRRB[1], HTFCC[2], Parks, with national facilitation by CWS	A list of jurisdictional contacts is available from Mary Rothfels, *CWS*, mary.rothfels@ec.gc.ca	A national recovery strategy is being developed to link regional recovery strategies and action plans [which are also in development]. See: **www.cws-scf.ec.gc.ca/habitat/descriptions/index-ecfm**

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
< 200; pop. trend is declining	Highway mortality; agricultural and urban development; reduction in prey; control of badgers as nuisance animals; forest ingrowth	To contain the current decline in badger numbers across BC by addressing mortality sources, low natality and connectivity	Research underway in East Kootenay and Kamloops areas examining habitat use, movement, mortality sources and recruitment. Working in cooperation with the SOSCP (see No.100)
Possibly < 200; pop. size not well understood; the 1979 and 1999 estimates were based on indirect evidence	Habitat loss is the main cause of decline; also possible are: losses from roadkills, predation and persecution	To be determined	Trapping of badgers for fur was closed in ON in 2000. **Stewardship:** in 2001, initiated a project to collect records to find pop. trends and verify suspected badger dens; a fact sheet was also developed
Pop. size is unknown; very restricted range in Canada (≤ 500 km^2 in BC's Okanagan Valley)	Loss or fragmentation of habitat due to extensive development; potential impacts on prey species due to heavy grazing	To conduct research to identify site-specific conservation options; to promote awareness and ecologically sustainable land use	Research into the species' habitat use and roost selection is underway; population surveys
2828 wild and 708 in captivity, free of brucellosis and tuberculosis, comprising 6 pops in the wild and 4 captive breeding herds (2000 estimates) **YT:** > 400 animals; pop. trend is stable	Habitat loss due to industrial and agricultural development; increased access; disease; loss of genetic diversity; predation by wolves	To reestablish ≥ 4 viable, healthy, free-roaming pops in their original range and other herds where the potential exists; to ensure the genetic integrity of wood bison; to restore wood bison for the benefit of local communities and society in general	**YT:** sustainable harvest levels set; **AB:** established a herd on tribal lands; **NWT:** successful 3rd year of calving in Hook Lake captive breeding herd (capturing and treating juveniles from a diseased wild herd and propagating them in captivity) **Stewardship:** establishing best practice guidelines and checklist for evaluating stewardship on Aboriginal lands
Banks Isl: 869-1523 caribou 1 year old (2001); **Bathurst Isl:** 150-357 caribou (2001); NW **Victoria Isl:** 888-1656 caribou 1 year old (2001); **Prince of Wales-Somerset Isl:**< 100	Uncertainty of climate trends; unknown levels of wolf predation; unknown relationship among muskoxen, wolves and caribou	To prevent extinction of all caribou pops; to improve pop. status; and to enable pops to become self-sustaining	Harvest quota was continued on Banks, northwest Victoria and Bathurst islands
This small isolated pop. south of the St. Lawrence River declined from ~ 500-1000 individuals in the 1950s to ~ 200 in the 1970s; ~ 140 in the Chic-Chocs area in 2000	Loss and alteration of habitat by logging; predation, particularly by coyotes and bears, resulting in low calf survival; vulnerability to illegal hunting; and habitat changes related to global warming	To maintain a survival rate of 50% for calves throughout their first summer, which by the fall should yield 17% calves in the pop.; to maintain a survival rate of 50% for calves aged 6 months to 2 years; to attain pop. of 150 animals by 2007 and 175 animals by 2012	Pop. is legally protected under provincial legislation which includes special habitat protection measures; key habitat is protected within a provincial park; recovery activities for this pop. continue
Numbers and distribution have decreased throughout most of the range	Habitat loss and fragmentation; human disturbance; increased predation; low reproductive rate	To be determined **Stewardship:** for a list of projects see **www.cws-scf.ec.gc.ca/habitat/descriptions/index_e.cfm**	**AB:** Implementing Strategic Plan and Guidelines to integrate industrial activity and conservation; habitat restoration initiated. **ON:** developing provincial recovery strategy; monitoring. **NWT:** traditional knowledge used to map occupation and occurrence; regeneration of plants on seismic lines was assessed; landscape scale study of caribou-vegetation relationships.

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
MAMMALS			
10 **Caribou, Woodland** [Southern Mountain pop.] *Rangifer tarandus caribou* Threatened (2000)	**BC**, AB, Parks	Ian Hatter, *BC–MWLAP* ian.hatter@gems6.gov.bc.ca	Jurisdiction-specific plans are being developed and will be integrated in a national plan. BC has drafted plans for Arboreal and Terrestrial lichen-foraging ecotypes and South Purcells herd. AB team to be in place in early 2002
11 **Ferret, Black-footed** *Mustela nigripes* Extirpated (1974, 2000)	**SK**, AB, MB, Parks	Earl Wiltse, *SK–ERM*, Earl.Wiltse.erm@govmail.gov.sk.ca	Recovery efforts are on hold
12 **Fox, Swift** *Vulpes velox* Extirpated (1978); Endangered (1998, 2000)	**AB**, SK, Parks	Pat Fargey, *Parks*, pat_fargey@pch.gc.ca and Axel Moehrenschlager, *Calgary Zoo* AxelM@calgary.zoo.ab.ca	The recovery plan was published in 1996
13 **Marmot, Vancouver Island** *Marmota vancouverensis* Endangered (1979, 1997, 2000)	**BC**	Doug Janz, *BC–MWLAP* doug.janz@gems2.gov.bc.ca	An updated recovery plan was published in 2000 [the original recovery plan was published in 1994]
14 **Marten, American** [Newfoundland pop.] *Martes americana atrata* Threatened (1986) Endangered (1996, 2000)	**NF**, Parks	Joe Brazil, *NF–TCR*, joebrazil@mail.gov.nf.ca and Brian Hearn, *NRCAN*, bhearn@nrcan.gc.ca	The 1995 recovery plan is being updated; 3 issue-specific action groups were formed in January 2002
15 **Otter, Sea** *Enhydra lutris* Endangered (1978) Threatened (1996, 2000)	**DFO**, BC, Parks	Don Lawseth, *DFO*, lawsethd@pac.dfompo.gc.ca	Development of the recovery strategy to begin in 2002
16 **Whale, Beluga** [Southeast Baffin Island - Cumberland Sound pop.] *Delphinapterus leucas* Endangered (1990)	**DFO**, NWMB[1]	Holly Cleator, *DFO*, cleatorh@dfo-mpo.gc.ca	Recovery strategy is in development

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
BC: 1900 of the Arboreal Foraging ecotype; 4700 of the Terrestrial Lichen-Foraging ecotype. **AB:** ~ 760 animals (1993-98 estimates for different ranges); A la Peche herd is declining; Redrock/Prairie Creek herd is stable to declining	Isolation, small sizes of sub-pops; destruction and fragmentation of contiguous old-forest habitats; alteration of predator-prey relationships; disturbance on backcountry winter range; forest health issues (insects, fire)	**BC:** to maintain pop. of 2500 – 3000 Arboreal Lichen-Foraging Ecotype and viable sub-pops of Terrestrial Lichen-Foraging Ecotype (pop. recovery targets to be determined) throughout current range; enhance recovery of identified sub-pops at risk; foster stakeholder support	Distribution map updated; revised guidelines for backcountry recreation operators; study of caribou response to disturbances from snowmobiles. **AB:** government and industry are planning for habitat supply; implementation of Operating Guidelines for Industry Activity in Caribou Ranges in West Central AB
~ 30 adults in captivity in Canada	The prey base (black-tailed prairie dogs) is too limited to sustain a wild pop. of ferrets	To participate in captive breeding; to determine the feasibility of releasing the ferret in the Val Marie area of SW SK; if feasible, to develop a plan to release and manage ferrets	Captive breeding program at Toronto Zoo continues
Increase from 279 foxes in 1996-97 to 656 foxes in 2000-01 (estimate for Canadian pop.); 98.6% foxes caught were wild-born; range expanding	Small pops subject to severe climatic variation; accidental poisoning or trapping; cultivation and industrial development of key mixed-grass prairie habitats; predation	To achieve a viable, self-sustaining pop., well distributed across suitable habitats on the Canadian prairies	The 2000-01 census indicates that 2 small pops are established and growing in Canada, and foxes are expanding into Montana. **Stewardship:** landowner support has been critical in maintaining habitat
Minimum 24 marmots in the wild, 47 in captivity (2001); pop. trend is declining	Small pop. and confined geographic distribution; associated impacts due to logging; disease; predation by cougars, wolves and eagles. See also: **www.marmots.org/**	To maintain the existing Nanaimo-Cowichan Lake pop. at ≥ 200 animals, within the currently known range; to re-assess status when a second stable or increasing pop. of 100-200 animals is discovered or established	Captive breeding is underway at Toronto and Calgary zoos and at a private facility in BC; fundraising; Mt. Washington breeding facility became operational in September with the arrival of 7 inhabitants
~ 300 marten in Newfoundland (1998); pop. trend is believed to be stable	Habitat loss and fragmentation from timber harvesting and fires; incidental mortality in traps and snares set for other furbearers and snowshoe hares	To establish or maintain 3 short-term, individual fall pops of ≥ 50 martens each; to develop and apply a landscape-scale habitat and pop. assessment model; to increase public awareness; to improve wildlife-harvesting methods; to develop and/or modify forest-harvesting guidelines and planning processes	Increased understanding of demographics and habitat ecology; research to develop predictive habitat and pop. assessment model; developing alternative methods for snaring and trapping, and applying predictive habitat model island-wide. **Stewardship:** increasing public awareness and acceptance of modified hare snare for reducing incidental mortality; developing a Web based education program (Adopt a Marten)
Exact size and growth rate of the BC pop. is unknown, but when last surveyed in 1995, the pop. appeared to be expanding its range	Oil spills and other environmental contamination; illegal killing	To determine size of pop.; to develop better assessment methods and characterize preferred habitat; to determine the role of otters in nearshore community structure	Otters were successfully re-introduced to BC. **Stewardship:** in 2002, coastal First Nation communities to participate in pop. assessments, educational activities
~ 1500 belugas in this pop. (1999); pop. trend appears stable or increasing; they appear to be limited to Cumberland Sound	Historically, over-exploitation from which the pop. has not fully recovered	To be determined	Research into movements and habitat use, assessment of population status

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
MAMMALS			
17 **Whale, Beluga** [St. Lawrence River pop.] *Delphinapterus leucas* Endangered (1983, 1997)	**DFO**, QC, Parks	Richard Bailey, *DFO*, baileyr@dfo-mpo.gc.ca	A DFO recovery plan was published in 1995; an update is scheduled to be published in 2002
18 **Whale, Beluga** [Ungava Bay pop.] *Delphinapterus leucas* Endangered (1988)	**DFO**, QC, NU, HTFCC[2]	Anne Lagacé, *DFO*, lagacea@dfo-mpo.gc.ca	Recovery strategy/plan is in development
19 **Whale, Beluga** [Eastern Hudson Bay pop.] *Delphinapterus leucas* Threatened (1988)	**DFO**, QC, HTFCC[2]	Anne Lagacé, *DFO*, lagacea@dfo-mpo.gc.ca	Recovery strategy/plan is in development
20 **Whale, Bowhead** [Eastern Arctic pop.] *Balaena mysticetus* Endangered (1980)	**DFO**, NWMB[1], HTFCC[2]	Pete Ewins, *WWF–Canada*, pewins@wwfcanada.org; and Sue Cosens, *DFO*, cosenss@dfo-mpo.gc.ca	A conservation strategy has been completed
21 **Whale, Bowhead** [Western Arctic pop.] *Balaena mysticetus* Endangered (1986)	**DFO**, FJMC[2]	**Contact**: Holly Cleator, *DFO*, cleatorh@dfo-mpo.gc.ca	No recovery team or plan in place but the population is recovering
Whale, Killer *Orcinus orca*		**Contact**: Marilyn Joyce, *DFO*, joycem@pac.dfo-mpo.gc.ca	Development of a recovery strategy is being considered for 2003-04
22 [Northeast Pacific southern resident pop.] Endangered (2001)	22 **DFO**, BC		
23 [Northeast Pacific northern resident pop.] Threatened (2001)	23 **DFO**, BC, NJFMC[2], Parks		
24 [Northeast Pacific transient pop.] Special Concern (1999) Threatened (2001)	24 **DFO**, BC, NJFMC[2]		

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
1000 individuals, based on aerial survey index (2000); pop. trend is stable or increasing; more frequent evaluations are required	Small and isolated pop. threatened by collision and disturbance from vessel traffic (commercial and eco-tourism) and exposed to increasing levels of toxic chemicals	To recover the pop. to the point where numbers and conditions have reached a state in which natural events and human activities no longer threaten its survival	A review of initial plan implementation is available from the recovery team chair. **Stewardship:** an intervention network for marine mammals in distress has been implemented
Fewer than 200 individuals according to the aerial survey index (2001)	Small population; Aboriginal harvest	To be determined	Meetings with Inuit representatives from the Makivik Corporation, the Kativik Regional Government and the Nunavik Hunting, Fishing and Trapping Association
Fewer than 1194 individuals according to the aerial survey index (2001); pop. trend is declining	Small population; Aboriginal harvest	To be determined	Meetings with Inuit representatives (as above). **Stewardship:** Study to reduce disturbances; use of Inuit traditional knowledge regarding the beluga in order to raise awareness
~ 300 whales in Hudson Bay/Foxe Basin (1994 and 1995); ≥ 350 whales in Baffin Bay/Davis Strait (1993); pop. is increasing according to Inuit Bowhead Knowledge Study (2000)	Changes in ice conditions as a result of climate change may be causing changes in whale distribution and increasing exposure to killer whale predation; underwater noise from shipping traffic and seismic vessels produces avoidance behaviour	To identify and protect important areas; establish long-term monitoring and research program; ensure Inuit subsistence harvest; mitigate human activities; improve communications	Stock relationships, sizes and boundaries are being described through genetic analyses, data from satellite transmitters and aerial surveys. **Stewardship**: Igaliqtuuq critical habitat stewardship project in key late summer feeding area is underway; completed the first of 3 year community-based habitat projects
9860 whales (95% confidence: 7700-12 600) (IWC estimate for 2001); compared with approx. 7500 (1991) and between 14 000 and 20 000 prior to commercial whaling; pop. trend is increasing ~ 3%/year (U.S. survey)	Climatic factors and changing ice conditions may cause changes in distribution and abundance; disturbance from traffic and noise associated with offshore developments in the Beaufort Sea		Research into seasonal movements, habitat requirements, feeding and reproductive behaviour, overall abundance, and responses to disturbance (e.g., overhead aircraft and oil-drilling wells)
N. and S. resident pops. began declining in mid-1990s. From 1995 to 2001, the S. resident pop. declined by 20%, to 78 animals; in 2001, the N. resident pop. declined by 8%, to 200 animals; pop. trends and accurate counts are not available for the transient pop., but the current pop. is about 200 animals	Increased vessel traffic; reduced food supply (e.g., chinook salmon for residents); high contaminant levels; low genetic diversity; very small pop. size and low potential rate of growth	Key research areas include distribution and diet, pop. discreteness and viability, and contaminants; management priorities have yet to be established	Research into genetics, contaminants, movements and critical habitats; and acoustic monitoring of occurrence by interpretation of dialects. **Stewardship:** the Marine Mammal Monitoring Project and the BC Cetacean Sightings Network monitor and record sightings and human interactions with whales and other marine mammals, and provides educational materials

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
MAMMALS			
25 **Whale, Right** [Atlantic and Pacific Oceans] *Eubalaena glacialis* Endangered (1980, 1985, 1990)	**DFO**, NWMB[1]	**Pacific contact:** John Ford, *DFO*, Fordjo@pac.dfo-mpo.gc.ca **Atlantic:** Jerry Conway, *DFO*, conwayj@mar.dfo-mpo.gc.ca and Moira Brown, *Canadian Whale Institute* mbrown@coastalstudies.org	**Pacific:** Recovery strategy to start in 2002 **Atlantic:** Recovery plan for North Atlantic pop. was approved in 2000; an implementation team has formed to develop action plan
26 **Wolverine** [Eastern pop.] *Gulo gulo* Endangered (1989)	**QC**, NF, HTFCC[2]	Clément Fortin, *QC-FAPAQ*, clement.fortin@fapaq.gouv.qc.ca	Recovery plan will be published in 2002-03
BIRDS (also see No. 100)			
27 **Chat, Western Yellow-breasted** [BC pop.] *Icteria virens auricollis* Threatened (1994) Endangered (2000)	**CWS**, BC	Christine Bishop, *CWS*, Christine.Bishop @ec.gc.ca	Draft recovery strategy is in development with First Nations involvement
28 **Crane, Whooping** *Grus americana* Endangered (1978, 2000)	**CWS**, Parks, SK, AB, MB, NWT – in cooperation with U.S.	Brian Johns, *CWS*, Brian.Johns@ec.gc.ca	The 1994 recovery plan is being updated as a joint Canadian/U.S. plan
29 **Curlew, Eskimo** *Numenius borealis* Endangered (1978, 2000)	**CWS**; all provinces and territories except BC; GRRB[1], SRRB[1], YFWMB[2], WMAC(NWT)[2], NWC[2]	Cheri Gratto-Trevor, *CWS*, Cheri.Gratto-Trevor@ec.gc.ca	Development of a recovery plan is on hold
30 **Falcon, Anatum Peregrine** *Falco peregrinus anatum* Endangered (1978) Threatened (1999, 2000)	**CWS**; all provinces and territories except PEI; Parks, HTFCC[2], NWMB[1], WMAC(NWT)[2], WMAC(North Slope)[2], GRRB[1], SRRB[1], YFWMB[2]	Geoff Holroyd, *CWS*, Geoffrey.Holroyd@ec.gc.ca	An update of the 1988 recovery plan is in development
31 **Flycatcher, Acadian** *Empidonax virescens* Endangered (1994, 2000)	**CWS**, ON, Parks	Lyle Friesen, *CWS*, lyle.friesen@ec.gc.ca	A recovery plan for Acadian Flycatcher and Hooded Warbler was published in 2000

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
Pacific: critically low pop. size due to commercial whaling **Atlantic**: 300-350 in North Atlantic; calving very poor for several years, however, 31 births in winter 2000-01 and 18 calves in 2001-02	**Pacific**: pop size may limit recovery potential; potential mortality from ship strikes and entanglement; potential disruption from seismic exploration or other noise disturbances **Atlantic**: incidental collisions with vessels; entanglements in fishing gear; poor recruitment (due to habitat degradation, changes in copepod prey distribution)	**Pacific**: to identify critical habitat and possible areas of conflict with industry **Atlantic**: interim goal of 1200 whales; to reduce mortality/injury related to vessel strikes and frequency / severity of entanglements; minimize disturbances; reduce exposure to chemical contamination, other habitat degradation; monitor and study pop.	**Pacific**: developing and deploying an autonomous recording package to monitor presence. **Stewardship**: Cetaceans Sightings Network is collecting sightings **Atlantic**: Transport Canada petitioned the International Maritime Organization to adjust the shipping lanes in the Bay of Fundy away from Right Whale critical habitat; code of ethics for whale-watching industry **Stewardship**: raising public awareness; assessing and modifying fishing gear to reduce entanglements
< 50 wolverines in Quebec and Labrador	Historically, hunting and trapping and starvation due to low prey numbers (caribou) led to the decline, now the pop. size is less than viable and individuals are widely dispersed	To establish (through re-introductions) a self-sustaining pop.; achieve a pop. size of 100 and maintain this for ten years; prevent losses attributable to human activities; ensure habitats and major prey are available in sufficient quantity and quality	A source of wild animals from western Canada for re-introduction remains to be identified. **Stewardship**: NF raising awareness and promoting stewardship of species at risk in Labrador
~ 34 pairs found in South Okanagan in 2001; the increase is probably due to more intensive inventory rather than a real change in pop. size	Channeling of Okanagan river; conversion of riparian habitat to agriculture; destruction of remaining riparian habitat by cattle and horses	To protect all nesting locations; to determine habitat structure and vegetation composition of territories and nest patches to facilitate habitat restoration; to further protect riparian habitats through stewardship and restoration	Fenced 29.8 ha of prime riparian habitat to allow restoration on private lands in areas near current territories; a range plan being implemented in 2002 for the Osoyoos Indian Band lands will extremely limit livestock access to riparian areas in prime habitats
53 nesting pairs (2001), of which 15 pairs successfully arrived on the wintering grounds with a single young each	Small, localized breeding pop. in Canada; deteriorating winter habitat due to boat traffic, wave erosion and dredging; deteriorating breeding habitat due to drought; hazards during migration (collisions, predation)	Establish 40 breeding pairs in Wood Buffalo National Park for 10 years and two other wild pops in U.S., each with ≥ 25 breeding pairs, by 2020	Breeding centres raised 30 cranes for release; migration training by ultra-light aircraft; a test migration from Wisconsin to Florida; 5 cranes returned unaided to Wisconsin in spring 2002
Species may be extinct, but there are occasional reports of possible sightings	Over-harvesting triggered decline, then other factors contributed to its demise	On hold pending confirmation that the species is still living	Potential sightings are investigated; status re-examined based on the 1999 updated status report
Anatum appears stable in NW Canada, increasing in S Canada. 400 pairs in NWT and YT; 162 pairs known across S. Canada (2000)	Low productivity in YT, N. AB and Labrador in 2000-01; pesticide use throughout migratory range; small pop. in S. Canada; little protection at nest sites; limited protection for prey habitats	Original recovery plan goal and objectives have been met	Ongoing population monitoring. **Stewardship**: NF is raising awareness and promoting stewardship of this and other species at risk in Labrador
20-30 pairs; pop. trend appears to be stable	Drastic reduction of habitat due to agricultural and other development throughout the Canadian range	To prevent any decline of the existing pop.; to increase the breeding pop. to 250 pairs, with multiple pairs established in ≥ 15 separate core areas	New breeding sites found; information on nesting productivity and habitat use; public outreach; mgmt of core breeding sites. **Stewardship**: habitat acquisition and publication of fact sheet

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
BIRDS			
32 Grouse, Sage [Prairie pop.] *Centrocercus urophasianus urophasianus* Threatened (1997) Endangered (1998, 2000)	**SK**, **AB**, Parks	Wayne Harris, *SK–ERM*, wayne.harris.erm@govmail.gov.sk.ca; Dale Eslinger, *AB–SRD*, Dale.Eslinger@gov.ab.ca	A recovery strategy has been finalized; AB is forming a provincial recovery action group and developing an action plan
33 Murrelet, Marbled *Brachyramphus marmoratus* Threatened (1990, 2000)	**CWS**, BC, Parks, NWC[2]	Doug Bertram, *CWS*, bertramd@pac.dfo-mpo.gc.ca	The 1994 recovery plan is being updated
34 Owl, Barn [Eastern pop.] *Tyto alba* Endangered (1999, 2000)	**ON**, **QC**	Dave Richards, *ON–MNR* , dave.richards @mnr.gov.on.ca **Coordinator:** Bernie Solymar, *EarthTramper Consulting*, solymar@nornet.on.ca	Provincial recovery plan for ON was published 1998; an updated plan is in development See: **www.bsc-eoc.org/regional/barnowl.html**
35 Owl, Burrowing *Athene cunicularia* Threatened (1978, 1991) Endangered (1995, 2000)	**CWS**, MB, SK, AB, BC, Parks	Geoff Holroyd, *CWS*, Geoffrey.Holroyd@ec.gc.ca	Recovery plan was published 1995; an update is in development
36 Owl, Northern Spotted *Strix occidentalis caurina* Endangered (1986, 1999, 2000)	**BC**	Myke Chutter, *BC–MWLAP*, Myke.Chutter@gems7.gov.bc.ca	New recovery team is being established and a plan is in development; a management plan that does not meet the requirements of a recovery plan has been developed
37 Plover, Piping *Charadrius melodus circumcinctus* Threatened (1978) Endangered (1985, 2001)	**CWS**, ON, MB, SK, AB – in cooperation with U.S.	Paul Goossen, *CWS*, Paul.Goossen@ec.gc.ca	The national recovery plan, covering both *circumcinctus* and *melodus* subspecies, was published in 2002

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
AB: in spring 2001, ~ 480 (108 males at 8 active leks); **SK:** in spring 2001, ~ 550 (124 males at 11 active leks); 1995-99 average of 97 males	Small pop.; low chick and adult survival; low recruitment of young to breeding pop.; intensive use of habitat for agricultural grazing; oil and gas exploration and extraction activities near lek locations	To protect, secure, and enhance critical habitat in AB and SK; to maintain a stable or increasing pop. with ≥ 365 males in the spring in AB and 500 males in the spring in SK; and to maintain active lek numbers ≥ 16 in AB and ≥ 30 in SK	Land reservations have been placed on all lek sites in AB to restrict industrial development; land use guidelines have been adopted near leks; provincial legislation has been amended to restrict activities of bird dog trainers within grouse range. **Stewardship:** examining manipulation of grazing and other land uses to enhance habitat; continued breeding surveys, mapping and research
66 000 birds (2001 estimate)	Loss and degradation of old-growth forest habitat; bycatch mortalities in gill and seine nets; oil spills	To ensure that effective and timely action is taken to protect the species by reducing threats to its nesting habitat and reducing the risks faced by the birds when at sea	Creation of wildlife habitat areas, published multi-scale studies of pop., distribution and habitat associations for species in Clayoquot Sound; habitat protection measures in place; reserve planning; assessment of remaining productive old-growth forest as nesting habitat
6 sightings along North shore of Lake Erie and adjacent counties confirmed in 2000-01; 4-6 pairs in ON (1987). Was never common or widespread in ON; considered only a rare visitor to QC	Loss of grassland foraging habitat primarily through the conversion of wetlands, meadows, native grasslands, and pastures to intensive agriculture (e.g. row crops); possibly nest predation by raccoons and cats	To establish a wild breeding pop. of ≥ 20 pairs in SW ON and to conserve and restore ≥ 1000 ha of rough grassland habitat by end of 2003; to cooperate with community groups in recovery efforts	300 nest boxes erected and monitored in SW ON (no breeding pairs found); 8400 habitat posters produced and distributed. **Stewardship:** newsletter sent to > 500 landowners etc.; mgmt practices information being developed for farmers/rural landowners
Average rate of decline over past decade is - 22% per year; fewer than 1000 breeding pairs in AB and SK (1995); extirpated from MB and BC	Low productivity due to limited food supply; high summer mortality; limited information on migration and winter ecology; low known recruitment	To reverse declining pop. trends on the prairies and maintain a stable or increasing pop. averaging > 3000 pairs for 10 years; to establish a viable pop. in BC and maintain it at an average of > 50 pairs for 10 years	Major wintering grounds discovered in central and coastal Mexico and south Texas. **Stewardship:** good support from landowners; stewardship programs are in place to protect nesting owls and the habitat in AB and SK; "Owls on Tour" school program (SK) to raise awareness
~ 50 occupied locations and ~ 25 breeding pairs (2001). Known population has declined by 50% over the last decade	Small pop., loss of old growth forest habitat due to timber harvesting and urbanization; predation by great horned owls, ravens, and goshawks; competition with barred owls; 42% of known spotted owl pop. in Canada is not fully protected; large portion of species range not protected	To stabilize and improve the pop. status in the next 100 years; to maintain /restore a min. 67% of the gross forested area as suitable habitat within 19 mgmt areas; to allow 33% timber volume removal in 67% habitat area and for clear-cut harvest if > 67% exists in managed area; to allow for adaptive mgmt	Draft pop. assessment report; will be included as Identified Wildlife to enable protection of suitable habitat under the Identified Wildlife Management Strategy of the Forest Practices Code; species account drafted; negotiating protection for occupied territories under Lilooett Land Resource Mgmt Plan; pop. monitoring
~ 970 adults (2001); comparison of 1996 and 2002 census data: Cdn Prairie portion of Northern Great Plains pop. declined in numbers	Threats to habitat and reproductive success, including human disturbance, artificial water levels, natural beach succession, and predators	To prevent further pop. decline; to maintain a self-sustaining pop. of ≥ 1626 adults in the prairie pop.; to protect habitat	Productivity at Lake Diefenbaker SK was higher than usual in 2001; nest exclosures in AB increased hatching success; guardianship program established at Grand Beach MB and being developed for Lake Diefenbaker

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
BIRDS			
38 **Plover, Piping** *Charadrius melodus melodus* Threatened (1978) Endangered (1985, 2001)	**CWS**, Parks, PEI, NF, NS, NB, QC – in cooperation with U.S.	Diane Amirault, *CWS*, Diane.Amirault@ec.gc.ca	The national recovery plan, covering both *melodus* and *circumcinctus* subspecies, was published in 2002
39 **Rail, King** *Rallus elegans* Special Concern (1985) Endangered (1994, 2000)	**CWS**, ON	Laurie Maynard, *CWS*, Laurie.Maynard@ec.gc.ca	The recovery plan is being revised; in 1999 a recovery plan was approved by CWS and conditionally approved by ON
40 **Shrike, Eastern Loggerhead** *Lanius ludovicianus migrans* Endangered (1991, 2000)	**CWS**, QC, ON, MB	Robert Wenting, *CWS*, Robert.Wenting@ec.gc.ca	The 1994 recovery plan is being updated See: **www.bsc-eoc.org/losh.html**
41 **Shrike, Prairie Loggerhead** *Lanius ludovicianus excubitorides* Threatened (1986)	**CWS**, AB, SK, MB, Parks	Andrew Didiuk, *CWS*, Andrew.Didiuk@ec.gc.ca	The 1994 recovery plan needs updating
42 **Sparrow, Henslow's** *Ammodramus henslowii* Threatened (1984) Endangered (1993, 2000)	**CWS**, ON	Richard Pratt, *CWS*, Richard.Pratt@ec.gc.ca	The recovery plan was published in 1997
43 **Tern, Roseate** *Sterna dougallii* Threatened (1986) Endangered (1999)	**CWS**, QC, NB, NS	Sherman Boates, *NS–DNR*, boatesjs@gov.ns.ca	A recovery strategy is being developed; the recovery plan was published in 1993
44 **Thrasher, Sage** *Oreoscoptes montanus* Endangered (1992, 2000)	**CWS**, BC, AB, SK, Parks	Rhonda Millikin, *CWS*, rhonda.millikin@ec.gc.ca	Recovery action plan is in development

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
481 adults (2001); comparison of 1996 and 2001 census data: Pop. increased (13.7%); pop. levels remain lower than in 1991; pop. trend is stabilizing, though a portion of the increase can be attributed to more survey effort in some provinces	Low reproductive success due to habitat-related concerns, including human disturbance, illegal vehicle use on beaches, coastal development, and increases in predator numbers; also threatened by natural beach succession and nest flooding due to high tides	To prevent further pop. decline; to increase the pop. to 670 adults; to evaluate other pop. goals in conjunction with habitat carrying capacity analysis; to establish and work towards achieving habitat protection goals	**Stewardship**: "Guardian" program operating in all provincial jurisdictions to protect nesting birds and their habitat; engaging landowners in habitat stewardship (NS); preparing documentaries and public service announcements (NF); outreach to beach users (NB)
~ 50 pairs (1998); – was possibly never common in Canada, but major declines have occurred	Habitat loss and degradation due to activities such as draining, filling and dredging; very low pop. size	To prevent any decline of the existing pop.; to increase the breeding pop. to 250 well-established pairs that breed regularly in ≥ 10 separate wetlands	Standardized surveys and traditional ecological knowledge have improved knowledge of distribution and abundance; established a survey protocol; species is benefiting from "Wetland Trends Through Time" and other conservation projects. **Stewardship:** developing stewardship options, fact sheet and communications products
38 breeding pairs in five widely-separated areas in ON + 11 breeding pairs in one location in SE MB (2000); pop. trend is declining	Habitat loss and degradation; changes in agricultural practices that impact on short grass habitat; collisions with vehicles; pesticide contamination	To prevent further pop. decline; to establish a stable or increasing breeding pop. in ON, QC, and eastern MB with a combined pop. of ≥ 1000 adults	Experimental field propagation and release project is underway in a core area; a marketing and communications strategy is being implemented. **Stewardship:** a stewardship program is ongoing
300 pairs in MB, 7000 pairs in SK, 2500 pairs in a third of the AB range (2000); pop. trends may be stable in S AB and SW SK; possibly declining in SE SK; and apparently declining in SW MB	Habitat loss and degradation; changes in agricultural practices that impact on short grass habitat; collisions with vehicles; pesticide contamination; increased human disturbance	To prevent further pop. decline	Efforts are underway to identify the causes of pop. decline in breeding and wintering areas, and to conserve and create nesting habitat
2-3 pairs	Loss of wintering habitat in U.S.; loss of breeding habitat; vulnerability of small pop. inhabiting an isolated area	To establish a stable or increasing breeding pop. of 500 adults distributed in different colonies across ON (e.g., 50 colonies with ≥ 10 birds in each)	Surveys of potential habitat are ongoing; birds may be emigrating to southern ON from breeding pops in New York State and Pennsylvania
150 pairs (2000); pop trend is stable in Canada, and increasing in U.S.	Low pop. size; low reproductive success and survival of young due to predation by gulls; loss of habitat; human disturbance	To have 125 pairs ≥ 3 mainland colonies totaling 75 breeding pairs; to maintain productivity of these colonies at > 1 fledging per pair per year	Protected under NS' *Endangered Species Act* [Endangered 2000]; record high pop. estimates were recorded at the two largest Canadian colonies in 2000: 86 pairs on The Brothers, 53 pairs on Country Island. **Stewardship:** a volunteer produced and installed new interpretive signage near The Brothers Colony
Decline from 20-30 pairs to 3 individuals (2000); fluctuations may be due to episodic influx of second breeders from Washington, U.S.	Loss of habitat due to agricultural and urban development; burning and clearing of sage; heavy grazing of sagebrush habitat; susceptibility to pesticides	10 pairs in each of 3 primary sites, with management of 3 alternate sites in case of fire; include transects in protected areas; locate transects and nests using GPS; control weed invasion; promote stewardship	SOSCP acquired habitat in 5/7 historic breeding sites as protected areas with lower grazing use; summary of BC data in prep. **Stewardship:** outreach to encourage "community watch" was initiated

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
BIRDS			
45 **Warbler, Hooded** *Wilsonia citrina* Threatened (1994, 2000)	**CWS**, ON, Parks	Lyle Friesen, *CWS*, lyle.friesen@ec.gc.ca	Recovery plan for Hooded Warbler and Acadian Flycatcher was published in 2000
46 **Warbler, Kirtland's** *Dendroica kirtlandii* Endangered (1979, 1999, 2000)	**CWS**, ON, Parks	Richard Pratt, *CWS*, Richard.Pratt@ec.gc.ca	Draft recovery plan is available upon request; plan to revise it in 2002-2003
47 **Warbler, Prothonotary** *Protonotaria citrea* Special Concern (1984) Endangered (1996, 2000)	**CWS**, ON, Parks	Jon McCracken, *Bird Studies Canada*, jmccracken@bsc-eoc.org, and Jeff Robinson, *CWS*, Jeff.Robinson@ec.gc.ca	Draft recovery plan is available upon request See: **www.bsc-eoc.org/prowmain.html**
48 **Woodpecker, White-headed** *Picoides albolarvatus* Threatened (1992) Endangered (2000)	**CWS**, BC	Pam Krannitz, *CWS*, Pam.Krannitz@ec.gc.ca	Plan is being developed in cooperation with the SOSCP
AMPHIBIANS (also see No. 100)			
49 **Frog, Northern Cricket** *Acris crepitans* Endangered (1990, 2001)	**ON**, Parks	**Contacts**: Bob Johnson, *Toronto Zoo*, bjohnson@torontozoo.ca and Mike Oldham, *ON-MNR*, michael.oldham@mnr.gov.on.ca	The recovery plan for Northern [Blanchard's] Cricket Frog was published in 1997. A new recovery team is forming
50 **Frog, Northern Leopard** [Southern Mountain pop.] *Rana pipiens* Endangered (1998, 2000)	**BC**	Doug Adama, *Adama Wildlife Consulting/Columbia Basin Fish & Wildlife Compensation Program*, adama@rockies.net	Recovery strategy is in development
51 **Frog, Oregon Spotted** *Rana pretiosa* Endangered (1999, 2000)	**BC**, **CWS** (for federal lands)	Russ Haycock, *Hyla Environmental Services Ltd.*, rhaycock@hyla.ca; John Richardson, *UBC*, jrichard@interchange.ubc.ca	Recovery plan is in development
52 **Salamander, Allegheny Mountain Dusky** *Desmognathus ochrophaeus* Special Concern (1998) Threatened (2001)	**QC**	Joël Bonin, *Conservation de la nature*, joel.bonin@conservationdelanature.ca	Plan, covering this and 3 other stream salamanders, is in development. Team is considering recovery actions to be undertaken and intends to finalize the plan during the 2002-03 fiscal year

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
144-207 pairs; pop. trend appears to be stable or increasing	Drastic reduction of habitat due to agricultural and other development throughout the Canadian range	To prevent any decline of the existing pop.; to increase the breeding pop. to 500 pairs, with multiple pairs established in at least 15 separate core areas	New breeding sites found; better information on nesting productivity and habitat use; management of core breeding sites; second 5-year survey is planned for 2002. **Stewardship:** habitat acquisition; fact sheet and public outreach
Last confirmed breeding record was in 1945; males are occasionally heard or seen; pop. trend is increasing Michigan	Limited amount of early successional pine habitat	To determine whether there is a breeding pop. in Canada and, if so, to undertake activities to maintain or increase it	Surveys of potential habitat are ongoing
25 pairs + 4 unmated males (2001); some signs of recovery; pop. increased from 20 to 54 adults between 1996 and 2001	Nesting failure due to competition with house wrens and brood parasitism by brown-headed cowbirds; shortage of nesting cavities; destruction of breeding and wintering habitats; drought in breeding habitat	To maintain a stable or increasing pop. averaging ≥ 100 pairs annually, in ≥ 6 geographically distinct nesting areas, each separated by a distance of ≥ 25 km	Nest box program is reducing cowbird parasitism and mammalian predation (241 boxes in 2001); over 80% of the Canadian pop. is now nesting in nest boxes; pamphlets produced and widely distributed
One family (2 adults and 1 juvenile) were observed in 2001-02; at extreme northern limit of its range in Canada	Forest ingrowth because of fire suppression, and loss of snags due to firewood harvesting; vulnerability of small pop. size, restricted niche	20 pairs by 2050; restored ponderosa pine habitat throughout critical habitat	Habitat restoration to promote breeding and overwintering; GIS mapping of historical sightings; identifying critical habitat. **Stewardship:** tree encroachment/ critical habitat restoration project underway
Extirpated at Point Pelee (last record in 1920); disappearing from the other Canadian location on Pelee Island	Loss of wetland to development; susceptibility to agricultural runoff of pesticides and fertilizers	To establish self-sustaining pops at several locations within former range in ON	A conservation meeting to discuss priority conservation projects was held at Toronto Zoo; successful captive breeding of frogs obtained from Ohio; genetic research is underway
825-2431animals (1999); the effective pop. size has remained stable but critically low for the past 3 years	Small pop. and restricted distribution; loss and degradation of habitat; disease; alteration of hydrological regime; introduction of fish; pesticides	To secure habitat, reduce mortality and establish five additional populations within 10 years	496 metamorphs were released into suitable historic habitat in the Creston Valley Wildlife Management Area. **Stewardship:** identification of land acquisition and stewardship options adjacent to breeding sites
2002: 546 frogs 2001: 350 frogs 2000: 298 frogs 1997: 288 frogs	Very small pop.; fragmented habitat; loss of ephemeral wetlands; habitat degradation by invasive grass species; predation by introduced bullfrog; contamination from agricultural run-off; habitat losses related to succession	To monitor, protect, maintain the status of existing pops; to monitor, protect and manage habitat; to survey for new sites, establish self-sustaining pops; to conduct research (e.g., husbandry techniques); communications and outreach	At Aldergrove, rehabilitation of egg laying and active season habitats (1300 m^2), and telemetry and survivorship studies were initiated; a husbandry technical manual has been completed. **Stewardship:** management of habitats constructed in 2000; a study of embryonic survivorship
Canadian pop. trends are unknown; the species has a very limited range (found in 5-7 separate sources representing only a few hundred metres in length), distributed across 12 km^2	Habitat requirements (intermittent and/or permanent streams mainly in forest and mountain environments) and actual or potential threats such as groundwater pumping, tourist development projects, vacation activities, forestry and the introduction of harvestable species	To protect habitats used by the species as well as potential habitats by 2007; to minimize the impacts of human limiting factors threatening salamander pops in QC streams	The team released a notice indicating the feasibility of the recovery of targeted stream salamander communities; surveys for salamander and habitat inventories are planned for 2002-03

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
REPTILES (also see No. 97, 98, 100 and 101)			
53 **Racer, Blue** *Coluber constrictor foxii* Endangered (1991)	**ON**	**Contact**: Robert Willson, rwillson@wildsofpelee.ca	Recovery plan is in development
54 **Rattlesnake, Eastern Massasauga** *Sistrurus catenatus catenatus* Threatened (1991)	**ON**, Parks	Darlene Upton, *Parks*, darlene_upton@pch.gc.ca	Recovery plan is being revised See: **www.terra-plex.com/sin/**
55 **Snake, Black Rat** *Elaphe obsoleta obsoleta* Threatened (1998, 2000)	**ON**, Parks	Shaun Thompson, *ON–MNR*, shaun.thompson@mnr.gov.on.ca	Recovery plan is in development
56 **Snake, Lake Erie Water** *Nerodia sipedon insularum* Endangered (1991)	**ON**	Don Hector, *ON–MNR*, don.hector@mnr.gov.on.ca	Recovery plan is in development
57 **Snake, Sharp-tailed** *Contia tenuis* Endangered (1999)	**BC**, Parks	Kari Nelson, *BC–MWLAP*, Kari.Nelson@gems2.gov.bc.ca	Recovery team is in place; recovery planning has been initiated
58 **Turtle, Blanding's** [NS pop.] *Emydoidea blandingii* Threatened (1993)	**NS**, Parks	Tom Herman, *Acadia University*, tom.herman@acadiau.ca, Cliff Drysdale, *Parks*, clifford_drysdale@pch.gc.ca and Sherman Boates, *NS–DNR*, boatesjs@gov.ns.ca	Recovery plan was published in 1999; an update is in development
59 **Turtle, Leatherback** *Dermochelys coriacea* Endangered (1981)	**DFO**, NF, NS, NB	**Pacific**: Don Lawseth, *DFO*, lawsethd@pac.dfo-mpo.gc.ca **Atlantic**: Jerry Conway, *DFO*, ConwayJ@mar.dfo-mpo.gc.ca	**Pacific**: Recovery strategy planning underway **Atlantic**: Development of a plan is scheduled to begin in 2002-03

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
205 adults (1995); 159 adult/juvenile snakes estimated from 4 study sites (2001)	Habitat loss due to increased commercial residential and cottage development; continued road kill and loss of breeding sites; low numbers	To protect and maintain the snake on Pelee Island and achieve a minimum of 1 other demonstrably secure pop. on the ON mainland	Continued efforts to determine pop. size, identify and locate critical habitat, restore/ improve habitat, and document the snake's absence from the west side of Pelee Island
250 in Killbear Provincial Park, and probably fewer than 100 in each of the Ojibway and the Wainfleet pops (1998)	Loss of habitat to development (most pressing for Ojibway pop. but an issue for all pops); natural succession (Wainfleet); pop. isolation and reduction due to habitat fragmentation; road kills; persecution by humans	To achieve viable pops at Ojibway and Wainfleet sites; to consider establishing additional pops in S ON by 2010; to retain broadest distribution and highest degree of connectivity among local pops, in collaboration with U.S.	Radio telemetry for habitat utilization; effects of highway construction and mitigation; thermal ecology; habitat suitability mapping; and disease. **Stewardship:** habitat improvement and creation; educational programs; posters; initiated talks by local Elder on Rattlesnake; and a "Reptile Awareness Program"
Pop. size and trends are unknown	Habitat loss and degradation; road mortality; persecution by humans	**Frontenac Axis pop.:** to retain the current distribution and connectivity among extant pops in this region **Carolinian pop.:** to achieve self-sustaining level, with no further local extinctions; restore connectivity between pops	Movement patterns, habitat use and pop. ecology are better understood; new hibernacula discovered on private land. **Stewardship:** public awareness improved with brochure and T-shirt campaigns; landowner contact; formed a volunteer community group
Pop. size unknown; *insularum* has declined over the last few decades	Destruction of habitat is the main limiting factor for this snake; persecution by humans and pollution are also contributing to the decline	To identify all suitable habitat types; to protect, enhance, monitor and increase the pop; to increase public awareness; and to develop liaison with Ohio and U.S. federal agencies	Radio-tracking (2001) will improve understanding of biology and habitat requirements, and will direct future monitoring and recovery efforts
Pop. size is unknown; number of pops has probably declined	Low numbers of small, isolated pops; small area of occupancy; modification and fragmentation of habitat due to development	To maintain known pops at current levels by engaging landowners in effective stewardship activities; to locate any additional pops that may exist; and to increase our understanding of the ecology and life history of the species	Inventory work is being conducted at one known site. **Stewardship:** Funding has been obtained to initiate stewardship activities
Recent pop. estimate is unavailable; ~ 130 adults in Kejimkujik National Park; an additional ~ 65 individuals have been marked outside the park since 1995; pop. may be increasing, or new sightings might reflect the greater search effort	Low reproductive success due to short incubation season, cool incubation conditions and nest flooding; late sexual maturation; predation of eggs and young by raccoons and other predators	To determine habitat availability/ requirements; to protect and manage habitat; to better understand the pop.'s life history and distribution; to stabilize age structure through increased recruitment	Protected under NS' *Endangered Species Act* [Endangered 2000]. Located nesting sites outside the park; delineation of habitats; improved understanding of fecundity, behaviour and ecology; pop. genetics research continues. **Stewardship:** volunteer nest monitoring program
Globally considered critically endangered; less than 30 000 nesting females world-wide. Does not breed in Canadian waters. **Atlantic:** ~ 15 000 females	**In Canadian waters:** ingestion of plastic and other debris mistaken for prey; entanglement in fisheries gear; **outside Canadian waters:** loss of eggs to humans and predators; development and illumination of nesting beaches; incidental capture in fisheries gear	**Pacific:** To prepare a database and report of all sightings by working with commercial fishers, recreational anglers, whale watch operators, and researchers; identify critical habitat and areas of possible conflict; examine dead animals	Satellite telemetry research (Atlantic); working with U.S. **Stewardship: Pacific:** initiating an outreach program through the Vancouver Aquarium and Marine Science Center **Atlantic:** Community-based turtle sighting network

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
REPTILES			
60 **Turtle, Spiny Softshell** *Apalone spinifera* Threatened (1991)	ON, QC	**ON**: Scott Gillingwater, *Upper Thames River Conservation Authority*, gillingwaters@thamesriver.on.ca **QC**: Martin Léveillé, *QC–FAPAQ*, martin.leveille@fapaq.gouv.qc.ca	Intend to merge the QC (completed) and ON (in prep.) portions of the recovery plan
FISH (also see No. 96, 97 and 98)			
61 **Dace, Nooksack** *Rhinichthys sp.* Endangered (1996, 2000)	BC, **DFO**, CWS (for federal lands)	**Contacts**: Jordan Rosenfeld, *BC–MSRM*, Jordan.Rosenfeld@gems4.gov.bc.ca and Mike Pearson, *UBC* mpearson@portal.ca	No recovery team in place, but restoration and protection plans are being developed
62 **Darter, Channel** *Percina copelandi* Threatened (1993)	QC, ON, DFO	**Contact**: Francis Bouchard, *QC–FAPAQ*, Francis.Bouchard@fapaq.gouv.qc.ca	National team to be established
63 **Redhorse, Copper** *Moxostoma hubbsi* Threatened (1987)	QC, DFO, Parks	Francis Bouchard, *QC–FAPAQ*, francis.bouchard@fapaq.gouv.qc.ca	Recovery plan is in development
64 **Salmon, Atlantic** [Inner Bay of Fundy populations] *Salmo salar* Endangered (2001)	**DFO**, NB, NS, Parks	Larry Marshall, *DFO*, MarshallL@dfo-mpo.gc.ca	Multi-stakeholder team was formed in 1999; recovery plan is in development
65 **Sucker, Salish** *Catostomus sp.* Endangered (1986)	BC, DFO	**Contacts**: Jordan Rosenfeld, *BC–MSRM*, Jordan.Rosenfeld@gems4.gov.bc.ca and Mike Pearson, *UBC*, mpearson@portal.ca	No recovery team in place, but restoration and protection plans are being developed
66 **Trout, Aurora** *Salvelinus fontinalis timagamiensis* Endangered (1987, 2000)	ON, DFO	Kevin Pinkerton, *ON–MNR*, kevin.pinkerton@mnr.gov.on.ca	Recovery plan is in development; a provincial management plan is in place

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
Between 1500-2500 adults in Canada (2001 estimate); fewer than 100 in QC	Loss and fragmentation of nesting, basking and hibernation sites due to shoreline modification; chemical pollution and sewage; human disturbance during nesting and basking; fluctuating water levels; predation of eggs and hatchlings	To continue landowner contact and education activities; maintain viable, sustainable pops within the species' current range; to enhance pops in Hamilton Harbour and other peripheral areas; to protect habitat on Lake Champlain; to establish a pop. outside the Lake Champlain area	**ON**: Research continues Stewardship: produced educational materials **QC**: telemetry used to identify habitat; surveyed for turtles; initiated habitat protection **Stewardship**: continued public awareness and stewardship activities
Evidence of range reduction in BC, several known pops. have been extirpated	Habitat loss and degradation due to human disturbance of streams occupied by the species (e.g., impacts of urbanization, agriculture and gravel extraction; water quality issues)	To be determined	Assessment of distribution; creation and enhancement of habitat at key sites **Stewardship**: stewardship groups formed; projects in the Lower Fraser are addressing the decline in suitable habitat due to urbanization and promoting community involvement
In QC the number of populations seems to be declining	Urban sprawl and decline of water quality (chemical toxins); reduced water flow and/or increased water temperature due to stream regulation; competition from introduced species (in ON)	**QC**: to improve understanding of the species and its habitat; to protect and improve known sites; to restore known habitats that have been disturbed	Since 1995, several fish have been found in downstream sections of six Ottawa River tributaries; created a database of all captures of channel darter in QC
Pop. size is declining and range is contracting; the only known spawning areas are both in the Richelieu River	Eutrophication and sedimentation due to intensive farming; dam construction; declining mollusc prey abundance; toxic chemicals in water	To increase recruitment of the Richelieu River pop.; to establish a pop. outside the areas currently occupied; to improve habitat conditions (e.g., reduce contaminants and sediments)	Characterization of the copper redhorse in the St. Lawrence; development of an identification key for juveniles; development of a methodology for evaluating recruitment
< 500 adults in 32 rivers from levels of 40 000 several decades ago; ~ 90% decline since 1990	Extremely poor marine survival for reasons unknown as well as large number of physical barriers on many inner Bay rivers	To be determined	Fisheries have been closed to this pop. since 1990; gene banking program; breeding pedigree program and stocking strategy developed; research into causes of decline; education and enforcement to increase compliance with fishing restrictions and prohibitions. **Stewardship**: developing a framework for a dam decommissioning demonstration project to promote recovery efforts
Declining; has been extirpated from some areas of BC	Habitat loss and degradation due to human disturbance of streams occupied by the species (e.g., impacts of urbanization, agriculture and gravel extraction; water quality issues)	To be determined	Assessment of distribution; creation and enhancement of habitat at key sites **Stewardship**: projects in the Lower Fraser are addressing the decline in suitable habitat due to urbanization and promoting community involvement
Fish biomass is estimated at 16-17 kg/ha; pop. trend is stable or increasing	Acidification of lakes prevents reproduction	To introduce the fish into a limited number of non-native lakes to maintain a brood stock for artificial breeding; to establish "backup" pops; and to provide limited angling opportunities	Monitored water quality and continued the stocking program to re-introduce fish into lakes; efforts underway to determine pop. size and sustainability

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
FISH			
67 **Whitefish, Atlantic** *Coregonus huntsmani* Endangered (1984, 2000)	**DFO**, NS	John Gilhen, *NS Museum of Natural History*, gilhenja@gov.ns.ca; Larry Marshall, *DFO*, MarshallL@mar.dfo-mpo.gc.ca	Recovery plan is in development
68 **Wolffish, Spotted** *Anarhichas minor* Threatened (2001) 69 **Wolffish, Northern** *Anarhichas denticulatus* Threatened (2001)	68 **DFO** 69 **DFO**	Catherine Hood, *DFO*, hoodc@dfo-mpo.gc.ca David Kulka, *DFO*, KulkaD@dfo-mpo.gc.ca	Recovery team is in place; recovery strategy is in development
MOLLUSCS (also see No. 97 and 98)			
70 **Abalone, Northern** *Haliotis kamtschatkana* Threatened (1999, 2000)	**DFO**, BC, NJFMC[2], Parks, NWC[2]	Laurie Convey, *DFO*, conveyl@pac.dfo-mpo.gc.ca	Recovery team was formed in 2001; recovery strategy has been drafted; action plan is in development
71 **Physa, Hotwater** *Physella wrighti* Endangered (1998, 2000)	BC	**Contact**: Bryan Webster, *BC–MWLAP*, Bryan.Webster@gems2.gov.bc.ca	Team being initiated; recovery plan has been drafted independently by an environmental consulting firm
72 **Snail, Banff Springs** *Physella johnsoni* Threatened (1997) Endangered (2000)	Parks, AB	Charlie Pacas, *Parks*, charlie_pacas@pch.gc.ca	A resource management plan has been completed
LEPIDOPTERANS (also see No. 95 and 100)			
73 **Blue, Karner** *Lycaeides melissa samuelis* Extirpated (1991, 2000)	ON	Peter Carson, *Norfolk Field Naturalists*, gartcar@kwic.com Dawn Burke, *ON–MNR*, dawn.burke@mnr.gov.on.ca	Recovery plan is in development; the team is investigating the possibility of working more closely with the U.S. recovery team
74 **Ringlet, Maritime** *Coenonympha tullia nipisiquit* Endangered (1997, 2000)	NB, QC	Gilles Godin and Dwayne Sabine, *NB–DNRE*, Gilles.Godin@gnb.ca and Dwayne.Sabine@gnb.ca	Recovery team is in place; recovery plan is in development

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
Confirmed resident pops in Petite Rivière watershed but no estimate of numbers available; appears extirpated from the remainder of its global range	Competition from introduced smallmouth bass; acid rain; physical barriers; poaching; incidental fishing; restricted distribution	To clarify the species' life-history and habitat requirements, and impact of interactions with introduced fish species; to continue collecting data on distribution through public consultations and directed sampling	Progress in delimiting the species' distribution, developing assessment protocols, understanding basic biology, and assessing the feasibility of culturing the fish. **Stewardship**: project to identify status in the Tusket River and to assess habitat quality
Numbers and distribution appear to have decreased throughout their range; 96% decline from 1978 to 1999	Incidental capture; habitat loss and degradation due to human disturbance of ocean bottom habitat; low reproductive rates; yet undefined ecological parameters that may negatively affect the population	To prevent declines and maintain stable/increasing pops; to define pop. status and structure; to better understand life history, distribution and habitat requirements; to quantify threats; to formulate mitigation measures leading to recovery; to identify critical habitat	Research underway on population size, genetics, demographics, movements and distribution, and habitat use and requirements; spatial/temporal fisheries data to quantify fishing mortality
Total density declined 43.75% between 1993 and 1997	Illegal harvest, low recruitment, habitat disturbances, and predation from recovering sea otter population	To increase numbers and densities to self-sustainable levels	Population assessment surveys, and genetics studies to identify the species in the illegal marketplace are underway **Stewardship:** pop. rebuilding experiments are underway
1735 snails (1997), all in Liard River Hotsprings Provincial Park, in far northern BC; pop. trend is stable	Vulnerable to changes to habitat (e.g., the addition of polluting substances such as soap or oil to the water, or changes in water flow)	To be determined	Produced an inventory and management recommendations paper; public outreach
Numbers decreased since 2001 (currently 12 207). Pops in 2 thermal springs have increased substantially; no change in 1 spring; significant decrease in 2 springs	Magnitude and extent of seasonal lows in population levels	To re-establish self-sustaining pops of the snail at the Upper Middle and Kidney springs in 2002 while maintaining and enhancing present pops	Re-introduced snails into Middle and Kidney springs; identified critical and residence habitats; mapped range; research into water physio-chemistry and flow, population fluctuations, microdistribution, flora and fauna continued. **Stewardship:** public outreach; education kit is in development
Declined by up to 90% since early to mid-1980s; only 2 of ON's 6 sites remained by early 1980s (Port Franks, St. Williams); there have been no confirmed reports at either site	Decreasing availability of wild lupine, the larva's only source of food, due to fire suppression and extensive planting of pine trees (which hasten shading out of early successional habitat of wild lupine and other flowering plants used by the butterflies)	To be determined	Habitat work is ongoing; studies of microhabitat conditions have been initiated in several locations
Lives exclusively in salt marshes; found at only 6 sites globally	Flooding; development; possibly additional but unknown limiting factors	To be determined	Better understanding of the life history, microhabitat and ecological requirements, movements of the adults, population demographics. **Stewardship:** promoting awareness of the ecology of salt marshes and ringlets; encouraging landowner involvement in recovery

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
PLANTS (also see 94, 95, 99, 100, 101)			
75 Ammannia, Scarlet *Ammannia robusta* Endangered (1999, 2001)	BC, CWS, ON	**BC contact:** Pam Krannitz, *CWS*, Pam.Krannitz@ec.gc.ca	**BC:** preliminary draft of recovery strategy
76 Blue-flag, Western *Iris missouriensis* Threatened (1990, 2000)	AB	Richard Quinlan, *AB–FW*, Richard.Quinlan@gov.ab.ca	A provincial recovery plan was completed in Feb. 2002 and was approved by AB in April 2002
77 Braya, Fernald's *Braya fernaldii* Threatened (1997, 2000) **78 Braya, Long's** *Braya longii* Endangered (1997, 2000)	77 NF, Parks, DFO (for federal lands) 78 NF	Luise Hermanutz, *MUN*, lhermanu@mun.ca, and Nathalie Djan-Chékar, *NF–TCR*, NathalieDjanChekar@mail.gov.nf.ca	Recovery plan covering both species will be published in 2002
79 Bulrush, Bashful *Trichophorum planifolium* Special Concern (1986) Endangered (2000)	ON	Carl Rothfels, *Royal Botanical Gardens*, crothfels@rbg.ca	Recovery plan is in development; first draft has been produced
80 Chestnut, American *Castanea dentata* Threatened (1987)	ON	John Ambrose, cercis@sentex.ca, and Greg Boland, *University of Guelph* gboland@uoguelph.ca	Draft plan is available on line at: **www.uoguelph.ca/~chestnut/recovery_plan.htm**
81 Deerberry *Vaccinium stamineum* Threatened (1994, 2000)	ON, Parks	Chris Burns, *ON–MNR*, chris.burns@mnr.gov.on.ca	Recovery plan has been drafted
82 Fern, Southern Maidenhair *Adiantum capillus-veneris* Endangered (1984, 1998, 2000)	BC	Ted Antifeau, *BC–MWLAP*, Ted.Antifeau@gems5.gov.bc.ca	Recovery team formed in Nov. 2000; preliminary recovery planning underway

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
Occurs at very few sites in Canada. **BC**: 3 pops of 30, 100 and 150 000 plants; **ON**: only 1 of 5 known historical sites had plants (~ 50) in 1997	**BC**: the greatest threats are habitat destruction and rising lake levels. **ON**: threats include high water levels, quarrying, encroaching woody species, development, and habitat destruction by dirt bikes	To be determined	This is one of several species that is benefiting from the SOSCP
14 757 stems (2001 estimate); 11 sites confirmed (does not include domestic or introduced pops); pop. trend is stable to increasing	Habitat loss and degradation; alteration of hydrology; competition with invasive species; herbicides	To develop, communicate and encourage management to ensure long-term maintenance of natural pops in Canada	Implementing specified actions in the plan. Stewardship: initiation of public outreach and range management plans; soliciting public input and consultations; updating pamphlet on species
77 ~ 3500 plants in 14 sites (2000) **78** ~ 6000 plants in 4 sites (2001); loss of ~ 20% due to grading of one pop.; enhancement of *ex situ* pops at MUN Botanical Gardens	Mortality due to non-native insect; resources extraction (quarrying); uncontrolled development	**77** to maintain at viable pop. sizes and densities within current distribution **78** to maintain at viable pop. sizes, all extant pops occurring under natural disturbance regimes; to establish ≥ 3 viable pops in natural areas within the historical range; to prevent the destruction of an important seed reservoir	All recovery objectives have been initiated; have requested regulation of 2 *B. longii* pops. **Stewardship**: interviews and land use survey in 4 communities; school presentations integrated into curriculum; local council partnership development; interpretative tour; program coordinator and interpreters; brochure and Web site development
Total pop. ~ 2000; one plant was located in the Rouge Valley and 1400 plants were found in Cootes Paradise (2001)	Sensitive to disturbance; competition from exotic and native species may be detrimental; limited understanding of threats	To ensure the persistence of all existing pops; to collect seed from all existing pops for creation of *ex situ* pops; to conduct research to support recovery	Recently regulated under ON's *Endangered Species Act*. Habitat description and demographic study in its second year; no new pops found in searches in Halton Region in 2001; maintaining individuals *ex situ*
~ 400 trees and root sprouts (1997)	Chestnut blight fungus which appears as cankers on branches and trunk, causing crown of trees to die; habitat loss through forest clearing	To identify and protect pops in the species' native range and to promote self-sustainability; to develop and assess management strategies for chestnut blight; to have resistant line(s) ready for planting in 2010-15	Site surveys; research on chestnut blight fungus
15 clumps in Thousand Islands Region and 2 clumps in Niagara Region (2001)	Excessive disturbance; habitat change and fragmentation; potential lack of genetic variation; low seedling recruitment; climatic stress; fire suppression	**Thousand Islands**: self-sustaining pops at known sites; to prevent extirpation; to provide suitable habitat in known range. **Niagara**: to have self-sustaining pops; to have more plants or sites; to provide suitable habitat	From landscape level genetic research, now beginning to understand the species' mode of reproduction and genetic diversity throughout its range
Found at 4 nearby sites in SE BC; in first site, 16 sterile fronds remained on ~ 4 plants (1996); cumulative total of hundreds of fronds at 3 other sites found in 2000-01	Limited availability of suitable habitat; and potential habitat loss and diversion of hot spring water due to resort and housing developments	Interim objectives: to protect and manage existing pops and habitats; establish stewardship agreements with landowners; survey for new sites; investigate options for restoration and re-introductions	New populations located in 2001; although some fronds were fertile, reproductive status has to be studied further; initiated landowner cooperation; conducted additional surveys

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
PLANTS			
83 **Ginseng, American** *Panax quinquefolium* Threatened (1988) Endangered (1999, 2000)	**QC**, **ON**, CWS	Line Couillard, *QC–MENV*, line.couillard@menv.gouv.qc.ca, Shaun Thompson, *ON–MNR*, Shaun.Thompson@mnr.gov.on.ca	Recovery plan has been drafted
84 **Lipocarpha, Small-flowered** *Lipocarpha micrantha* Threatened (1992)	BC, ON, QC, CWS	**BC contact**: Pam Krannitz, *CWS*, Pam.Krannitz@ec.gc.ca	**BC**: a recovery strategy for this species is being developed in cooperation with the SOSCP
85 **Lousewort, Furbish's** *Pedicularis furbishiae* Endangered (1980, 1998, 2000)	**NB**	Maureen Toner, *NB–DNRE*, Maureen.Toner@gnb.ca	Recovery team was established recently; recovery plan is being drafted
86 **Mountain-mint, Hoary** *Pycnanthemum incanum* Endangered (1986, 1998, 2000)	**ON**	Melinda Thompson, *ON–MNR*, melinda.thompson@mnr.gov.on.ca	Recovery plan has been drafted
87 **Mulberry, Red** *Morus rubra* Threatened (1987) Endangered (1999, 2000)	**ON**, Parks	John Ambrose, cercis@sentex.ca	Recovery plan has been drafted
88 **Orchid, Western Prairie Fringed** *Platanthera praeclara* Endangered (1993, 2000)	**MB**	**Contact**: Jason Greenall, *MB Conservation*, Jgreenall@gov.mb.ca	A plan prepared by the Canadian Nature Federation (1995) did not have input from a recovery team
89 **Thistle, Pitcher's** *Cirsium pitcheri* Threatened (1988) Endangered (1999, 2000)	**Parks**, **ON**	Brian Hutchinson, *Parks*, brian.hutchinson@pch.gc.ca; Will Kershaw, *ON–MNR*, will.kershaw@mnr.gov.on.ca	A Pitcher's Thistle Coastal Dune Habitat team has been formed; a recovery strategy is in development and the draft is expected in 2002
90 **Tree, Cucumber** *Magnolia acuminata* Endangered (1984, 1999, 2000)	**ON**, CWS	Donald Kirk, *ON–MNR*, donald.kirk@mnr.gov.on.ca	Recovery plan has been drafted

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
QC: 15 pops with a total of 10 956 plants; **ON**: 7 viable pops with a total of 8619 plants	Small number of pops; habitat loss and degradation from clearing and logging; over-harvesting/poaching	To stop further losses of plant pops and habitat; to preserve genetic variability; to determine no. of pops and distribution required to achieve recovery; to begin rehabilitation/re-introduction of pops	Restoration of small pops, landowner contacts, and management activities in ON provincial parks are all underway
Highly disjunct in Canada with few historic sites; pop. decline through loss of sites; and very low pop. size at the two extant sites	The greatest threats to this species are habitat loss and degradation; other threats include: cottage and road developments, wharves and dam construction, trampling and packing down of soil by all-terrain vehicles	To be determined	**BC**: This species is benefiting from work underway through the SOSCP
< 1000 currently known from 3 sites in NB; has declined since the 1970s	Habitat loss; garbage dumps, litter, gravel pit operations and forestry practices along river banks likely affect habitat quality	To be determined	
~ 600 individuals (2000)	Competition from invasive species; habitat loss	To protect and manage existing habitat; to ensure existing pops become self-sustaining; to investigate possibility of restoring potential habitat and re-introducing species to historic sites	Protection and monitoring of known pops, in cooperation with landowners
16 populations consisting of 224 trees plus numerous red X white mulberry hybrids	Hybridization with white mulberry; vulnerability of small pops; some mortality due to twig blight; habitat loss or degradation	To conserve and, if necessary, restore metapop. stability in 2 regions of S ON; to foster habitat protection and reduce threats; to increase pop. size to 50+ in at least 1 pop. in each region	Site surveys; white mulberry culling to reduce hybridization; genetic studies to identify hybrids; searches for new individuals; continuation of pop. viability analyses; experimental transplanting
Numbers fluctuate between years: 2095 flowering plants (2001); 21 003 flowering plants (1996); 1818 flowering plants (1995)	Habitat loss and/or degradation; low seed production; sensitivity to various periodic climatic effects, particularly precipitation and temperature; illegal removal of plants; altered hydrology	To be determined	Research to understand and possibly improve seed production; addressing methods to enhance numbers of pollinator moths; determining whether habitat availability for moths is a concern; use of periodic fires and moderate to light grazing or mowing to reduce woody growth and litter crowding the orchids. **Stewardship**: MB established Tall Grass Prairie Reserve
Occurs at only a few sites with a very limited area; at individual sites pops range from about 50 to > 2000 plants; several pops have disappeared recently	Dune habitat under threat of development, disturbance throughout range	To retain high quality coastal dunes and their sustaining processes; to sustain sites with large numbers of thistle; to sustain and enhance sites with low to moderate numbers; to expand pops to suitable dune sites	All known sites visited and records updated; products developed for public outreach and communication; monitoring of some sites in progress
204 trees in 13 natural sites	Habitat loss due to agricultural development, logging and clearing; low reproductive potential; requirement for forest openings for seedling establishment	To protect existing pops and habitats; to increase pop. size to 50 in ≥ 2 sites in each of 2 regions; to conduct research; to develop and implement a landscape restoration plan	Pollination studies being undertaken in 2002. **Stewardship**: Have initiated contacting landowners; exploring opportunities for landowner stewardship and community participation

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
PLANTS			
91 **Wintergreen, Spotted** *Chimaphila maculata* Endangered (1987, 1998, 2000)	**ON**	**Contact**: Ron Gould, *ON–MNR*, ron.gould@mnr.gov.on.ca	Recovery plan has been drafted
92 **Wood-poppy** *Stylophorum diphyllum* Endangered (1993, 2000)	**ON**	Dan Schaefer, *ON–MNR*, dan.schaefer@mnr.gov.on.ca	Recovery plan has been drafted; will be revised in 2002
93 **Woodsia, Blunt-lobed** *Woodsia obtusa* Threatened (1994) Endangered (2000)	**ON**, **QC**	Leslie Hunt, *ON–MNR*, leslie.hunt@mnr.gov.on.ca	Recovery plan has been drafted
ECOSYSTEM RECOVERY PLANS			
94 **Atlantic Coastal Plain Flora** 2 Endangered and 4 Threatened plants (see below)	**NS**, Parks	Sherman Boates and Mark Elderkin, *NS–DNR*, boatesjs@gov.ns.ca, elderkmf@gov.ns.ca	Recovery plan is in development by the recovery/conservation team See: **http://conservation.acadiau.ca/coastalplainflora/about.htm**
95 **Garry Oak Ecosystems** 12 Endangered, 4 Threatened and 1 Extirpated species (see below)	**BC**, **CWS**, Parks	Marilyn Fuchs, marilyn.fuchs@goert.ca and Brian Reader, *Parks*, Brian_Reader@pch.gc.ca	Recovery strategy has been drafted; 4 recovery action plans are in development. Publications are available at: **www.goert.ca/reference/main.html**
96 **Grand River** 2 Threatened fish (see below)	**ON**, DFO	Alan Dextrase, *ON–MNR*, alan.dextrase@mnr.gov.on.ca	Recovery plan has been drafted
97 **Sydenham River** 5 Endangered molluscs, 3 Threatened fish and 1 Threatened reptile (see below)	**ON**, DFO, EC	Alan Dextrase, *ON–MNR*, alan.dextrase@mnr.gov.on.ca and Shaun Staton, *DFO*, statons@dfo-mpo.gc.ca	Recovery strategy has been drafted; four recovery action groups have been formed and the development action plans is underway See: **www.sydenhamriver.on.ca/**

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
4 pops consisting of > 1100 stems. It is difficult to determine individuals due to its clonal nature	Damage from all terrain vehicles; detrimental forest management practices; collection by horticulturists; no legal protection (but see progress column)	To prevent extirpation of small pops; to initiate research projects to assess pop. biology, genetics and ecology of the species	Field surveys; species has been proposed for regulation under ON's *Endangered Species Act*
~ 400 plants in 3 known locations (2001); pop. trend is stable	Limited availability of suitable and maintained habitat	To maintain and augment existing pops; to protect existing habitat (and to investigate possibly re-introducing plants)	Voluntary protection of existing plants on private land; genetic studies have been initiated
315 plants (2001); pop. trend is stable	Habitat alteration; development	To maintain and augment pop. size and distribution	Landowner contact has been accomplished for further stewardship activities; new pops in ON discovered; research to define habitat needs; surveys and habitat mapping of ON occurrences
For pop. information see individual species accounts at: **www.speciesatrisk.gc.ca/sar/main.htm**	Extensive losses and degradation of habitat from hydropower and shoreline development and recreation	To improve knowledge for decision-making; to prioritize species and habitats for conservation; to promote stewardship and awareness; to conduct research to support recovery planning; to foster cooperation among working groups	Protection of species under NS' *Endangered Species Act*; developed Web site. **Stewardship**: study of historical impacts of human land use; contacting landowners and providing outreach services; ongoing programs for private land stewardship and volunteer monitoring for species
~ 1-5 % of historical extent remains in a near-natural condition; analysis of losses in Victoria area (2002) are consistent with the estimates	Habitat loss and fragmentation; invasions of exotic species; ecological changes as a result of fire suppression; other factors	Establish a network of Garry oak and associated ecosystem sites and linkages representative of the range of ecosystem variation across the range, that sustains all the critical processes and that supports the native biota over the long term; secure and improve the status of species at risk in these and associated ecosystems	Developing a GIS database and standardized plant community classification; identifying priority sites for securement; developing decision support tool for managing invasive species; habitat restoration; producing a guide for conservation covenants and stewardship agreements, fact sheets, educational kit, public education products, inventory, research and extension
New sites have been found extending the known range of eastern sand darter (Brantford pop.) by ~ 17 km	Siltation and drainage associated with agricultural and urban development, dams preventing migration	To facilitate the protection and recovery (within the watershed) of the at-risk fish species found in the Grand River watershed	Combining species-specific information into an ecosystem plan that will account for characteristics and traits common and distinctive to each species
Some species are in decline; for estimates see: **www.speciesatrisk.gc.ca/sar/main.htm**	Habitat degradation due to intensive agriculture; the principle threats include sediment loadings causing siltation and turbidity, nutrient loads, toxic compounds (i.e., pesticides, chloride), thermal effects, and exotic species	To sustain and enhance the native aquatic communities through an ecosystem approach that focuses on species at risk; maintain current pops; to improve water quality; to reduce risk of exotic species introductions; to establish a monitoring program; to promote improved stewardships and awareness	Initiated projects to improve water quality in the northern portion of the watershed under the St. Clair Remedial Action Plan; public meetings held to increase awareness and allow input on strategy development. Stewardship: projects included reducing sediment and nutrient delivery to watercourses; riparian plantings; a school outreach program

STATUS OF RECOVERY

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead mgmt authorities in bold)	RECOVERY TEAM CHAIR OR CONTACT	STATUS OF RECOVERY STRATEGY OR PLAN
ECOSYSTEM RECOVERY PLANS			
98 **Thames River Ecosystem** 2 Threatened reptiles, 2 Threatened fish and 4 Endangered molluscs (see below)	ON, DFO	Ingrid Taylor *Upper Thames River Conservation Authority*, TaylorI@thamesriver.on.ca	Recovery strategy is in early stages of development; the recovery team met for the first time in January 2002 and has adopted terms of reference
99 **Walpole Island Ecosystem** [ON] 5 Endangered and 3 Threatened plants (see below)	CWS (federal lands)	Mike Williams, *Walpole Island First Nation*, and Robert Wenting, *CWS*, robert.wenting@ec.gc.ca	Drafting of recovery plan is underway; recovery team is in place
CONSERVATION PROGRAMS OR LANDSCAPE SCALE INITIATIVES BENEFITTING			
100 **South Okanagan-Similkameen Conservation Program** 9 Endangered, 6 Threatened and 1 Extirpated species (see below)	BC, CWS	Trish Hayes, *CWS*, Trish.Hayes@ec.gc.ca, and Robert Hawes, SOSCP1@gems3.gov.bc.ca	Several species-specific recovery strategies and action plans are being developed in cooperation with the larger landscape-level conservation program
101 **Tallgrass Communities** [ON] 8 Endangered and 3 Threatened plants; 1 Threatened reptile (See below)	ON	**Contact**: Cathy Quinlan quinlanc@thamesriver.org	An ecological communities conservation plan was published outside the auspices of RENEW in 1997 See: **www.tallgrassontario.org/**

FOOTNOTES

1 Wildlife Management Board (see list of acronyms) which has approval authority with respect to recovery plans.

2 Wildlife Management Board (see list of acronyms) which has advisory powers with respect to recovery plans.

SPECIES (XT, E AND T) INCLUDED UNDER ECOSYSTEM PLANS, TO THE EXTENT THAT THEIR RANGE OVERLAPS WITH THE GEOGRAPHIC AREA COVERED IN THE ECOSYSTEM PLAN:

94 a) Thread-leaved Sundew (E – 1991, 2001); b) Pink Coreopsis (E – 1984, 1998, 2000); c) Water-pennywort (E – 1985; T – 1999, 2000); d) Plymouth Gentian (T – 1984, 1999, 2000); e) Golden Crest (T – 1987, 1999, 2000); f) Redroot (T – 1994, 2000)

95 a) No. 57 above; b) Rigid Apple Moss (T – 1997, E – 2000); c) Deltoid Balsamroot (E – 1996, 2000); d) Golden Paintbrush (T – 1995; E – 2000); e) Seaside Birds-foot Lotus (E – 1996, 2000); f) Prairie Lupine (E – 1996, 2000); g) Water-plantain Buttercup (E – 1996, 2000); h) Bearded Owl-clover (E – 1998, 2000); i) Tall Woolly-heads [Pacific pop.] (E – 2001); j) Bear's-foot Sanicle (E – 2001); k) White-top Aster (T – 1996, 2000); l) Yellow Montane Violet (T – 1995, 2000); m) Purple Sanicle (T – 2001); n) Island Blue (E – 2000); o) Taylor's Checkerspot (E – 2000); p) Dun Skipper [Western pop.] (T – 2000); q) Island Marble (XT – 1999, 2000)

96 a) Eastern Sand Darter (T – 1994, 2000); b) Black Redhorse (T – 1988)

97 a) No. 60 above; b) No. 96a above; c) Northern Riffleshell (E – 1999, 2000); d) Rayed Bean (E – 1999, 2000); e) Wavy-rayed Lampmussel (E – 1999); f) Snuffbox (E – 2001); g) Mudpuppy Mussel (E – 2001); h) Spotted Gar (SC – 1983; T – 2000); i) Margined Madtom (T – 1989)

98 a – g) No. 60, 96a, 96b, 97d – g above; h) Queen Snake (T – 2000)

99 a) Gattinger's Agalinis (E – 1988, 1999, 2001); b) Skinner's Agalinis (E – 1988, 1999, 2000); c) Pink Milkwort (E – 1984, 1998, 2000); d) Small White Lady's-slipper (E – 1981, 1999, 2000); e) White Prairie Gentian (E – 1991, 2001); f) Virginia Goat's-rue (E – 1996, 2000); g) Butler's Gartersnake (T – 2001); h) Colicroot (T – 1988, 2000); i) Goldenseal (T – 1991, 2000); j) Kentucky Coffee Tree (T – 1983, 2000)

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
Estimates not available for all species; also see: **www.speciesatrisk.gc.ca/sar/main.htm**	Habitat degradation due to urban, rural and resource development	To address threats; develop partnerships; improve public awareness and consultation; support compilation of background information; coordinate monitoring; regard the needs of terrestrial species	A Thames River Recovery logo has been adopted. **Stewardship:** habitat restoration and research to support stewardship and communications activities
For estimates see the individual species accounts: **www.speciesatrisk.gc.ca/sar/main.htm**			Plan will benefit numerous species at risk in ON; Walpole Island First Nation has an essential role in recovery and management activities
SPECIES AT RISK			
For estimates see the individual species accounts: **www.speciesatrisk.gc.ca/sar/main.htm**	Continued loss and degradation of habitat due to development	The program aims to maintain the rich biodiversity of the area, including species at risk, and a viable ecological corridor between the deserts to the south and the grasslands to the north	Multi-partner effort to secure natural habitats by acquisition and stewardship; expanded community involvement
The ~ 2100 ha of prairie, savannah and woodland known to be remaining in the Carolinian region of S ON in 1992 represents < 3% of the pre-settlement extent of prairie and savannah in the region	Mostly habitat destruction, also alteration of ecological processes (e.g., fire suppression, altered hydrology), habitat degradation and invasion by exotic species	Objectives include communication, coordination and information-sharing; compilation of information regarding all tallgrass community remnants; protection and restoration of habitats; improving public awareness; basic and applied research	Slender bush-clover was regulated under ON's *Endangered Species Act*. Developing "Save Ontario Savannahs" landowner contact project which includes compilation of baseline data and a threat assessment to allow for future monitoring of progress

SPECIES (XT, E and T) THAT BENEFIT FROM BROADER CONSERVATION PROGRAMS OR LANDSCAPE SCALE INITIATIVES, TO THE EXTENT THAT THEIR RANGE OVERLAPS WITH THE GEOGRAPHIC AREA COVERED IN THE ECOSYSTEM PLAN:

100 a – i) No. 1, 3, 27, 30, 35, 44, 48, 75, 84 above; j) Toothcup (E – 1999, 2000); k) Mexican Mosquito Fern (T – 1984, 1998, 2000); l) Behr's (Columbia) Hairstreak (T – 2000); m) Tiger Salamander [Southern Mountain pop.] (E – 2001); n) Great Basin Spadefoot (T – 2001); o) Night Snake (E – 2001); p) Pygmy Short-horned Lizard [BC pop.] (XT – 1992, 2000)

101 a – g) 99a – d, 99f – h; h) Purple Twayblade (E – 1989, 1999, 2001); i) Slender Bush-clover (E – 1986, 1999, 2000); j) Bird's-foot Violet (T – 1990); k) Dense Blazing Star (T – 2001)

NOTE

A "Species", as defined by COSEWIC, is "any indigenous species, subspecies, variety, or geographically defined population of wild fauna and flora."

LIST OF ACRONYMS AND ABBREVIATIONS

AB: Alberta
AB–FW: AB Fish and Wildlife
AB–SRD: AB Sustainable Resource Development
BC: British Columbia
BC–MSRM: BC Ministry of Sustainable Resource Management
BC–MWLAP: BC Ministry of Water, Land and Air Protection
COSEWIC: Committee on the Status of Endangered Wildlife in Canada
CWS: Canadian Wildlife Service of Environment Canada
DFO: Fisheries and Oceans Canada
E: Endangered
EC: Environment Canada
FJMC: Fisheries Joint Management Committee
GRRB: Gwich'in Renewable Resources Board
HTFCC: Hunting, Trapping and Fishing Coordinating Committee [JBNQA]
IGC: Inuvialuit Game Council
IWC: International Whaling Commission
JBNQA: James Bay Northern Quebec Agreement
MB: Manitoba
Mgmt: Management
MUN: Memorial University of NF
NB: New Brunswick
NB–DNRE: NB Department of Natural Resources and Energy
NF: Newfoundland and Labrador
NF–TCR: NF Tourism, Culture, Recreation,
NJFMC: Nisga'a Joint Fisheries Management Committee
NRCAN: Natural Resources Canada
NS: Nova Scotia
NS–DNR: NS Department of Natural Resources
NU: Nunavut
NWC: Nisga'a Wildlife Committee
NWMB: Nunavut Wildlife Management Board
NWT: Northwest Territories
ON: Ontario
ON–MNR: ON Ministry of Natural Resources
Parks: Parks Canada Agency of Canadian Heritage
PEI: Prince Edward Island
Pop(s): Population(s)
QC: Quebec
QC–FAPAQ: Société de la faune et des parcs du Québec
QC–MENV: Ministère de l'Environnement du Québec
SC: Special Concern
SK: Saskatchewan
SK–ERM: SK Environment and Resource Management
SOSCP: South Okanagan Similkameen Conservation Program
SRRB: Sahtu Renewable Resources Board
T: Threatened
UBC: University of British Columbia
WMAC (North Slope): Wildlife Management Advisory Council (North Slope)
WMAC (NWT): Wildlife Management Advisory Council (NWT)
WWF: World Wildlife Fund
YFWMB: Yukon Fish and Wildlife Management Board
YT: Yukon Territory
XT: Extirpated

FINANCIAL CONTRIBUTORS

Contributor	Species or Group	Person Year ($55,000 on average, including salary and overhead) PYs	excluding salary dollars, including in-kind contributions $1000s	$1000s+ (PYs x $55,000) Total
Acadia Centre for Wildlife and Conservation Biology	58	0.25	12.00	25.75
Acadia University	58		6.00	6.00
Acadian Peninsula Naturalists	38		1.00	1.00
Agriculture and Agri-Food Canada	12, 32, 37	0.21	9.50	20.92
Alberta Cattle Commission	35		3.20	3.20
Alberta Conservation Association	10, 32, 35, 37	3.70	369.00	572.50
Alberta Ecotrust Foundation	35		5.00	5.00
Alberta Government	12, 30, 32, 35, 37	2.09	98.50	213.24
Alberta Government (Sustainable Resource Development)	9, 10, 32, 37	3.90	236.00	450.50
Alberta Sport, Recreation, Parks and Wildlife Foundation	37		4.00	4.00
Allen R.Lefebvre Photography	35		7.00	7.00
Attention Frag'Îles	38	1.00		55.00
Barrington Library	38		0.05	0.05
Bird Studies Canada	38, 47	0.23	4.20	16.85
Boreal Caribou Committee	9	4.00	600.00	820.00
British Columbia Government	3, 10, 13, 27, 33, 35, 36, 44, 48, 50, 57, 70, 82, 95	18.90	847.28	1886.81
Calgary Zoo	28	1.20	47.00	113.00
Canadian Biotechnology Strategy	70		70.00	70.00
Canadian Nature Federation (Important Bird Area Community Action Fund)	38	0.10	2.50	8.00
Canadian Wildlife Federation	35		2.00	2.00
Cape Sable Important Bird Area	38	0.01	0.67	1.33
Capital Regional District Parks	57, 95	0.30	4.06	20.56
Caring for Cottonwoods	27		3.00	3.00
Centre hospitalier de Tracadie-Sheila	38		0.10	0.10
Cities of Laval, Lachenaie, and Terrebonne	63		5.00	5.00
City of London	98		12.00	12.00
City of Vancouver (Stanley Park Burrowing Owl Facility)	35	1.50	1.50	84.00
City of Victoria	95	0.09		4.95
City of Windsor	54		0.80	0.80
Clean Nova Scotia	38	0.00	0.20	0.42
Collège de l'Acadie	38		0.03	0.03
Columbia Basin Fish and Wildlife Compensation Program	10, 50	0.30	110.95	127.45
Columbia Basin Trust	10, 50	0.10	34.40	39.90
Conservation Corps of Newfoundland and Labrador	77-78	0.75	9.00	50.25
Deh Cho First Nations	8		250.00	250.00
Department of National Defence	51	0.10	38.70	44.20
DesBrisay Museum	38		0.03	0.03
District of Saanich	95	0.35	5.00	24.25
Domtar	52	0.03	0.40	1.83
Donner Canadian Foundation	101		16.20	16.20
Ducks Unlimited	37	0.02		1.10
Éco-Nature de Laval	63		10.00	10.00
Elsa Wild Animal Appeal of Canada	35, 37		2.50	2.50
Enbridge Inc.	35, 37		15.00	15.00
Environment Canada (Canadian Wildlife Service – CWS)	3, 27, 28, 30, 31, 35, 37, 38, 42, 44, 45, 46, 48, 77-78, 95	12.29	713.80	1389.91
Environment Canada (EC)	13, 37, 38, 51, 52, 97, 98	1.38	241.05	317.01
Environment Canada (EcoAction Community Funding Program)	30, 35	0.27	30.00	44.85

FINANCIAL CONTRIBUTORS (CONTINUED)

Contributor	Species or Group	Person Year ($55,000 on average, including salary and overhead) PYs	excluding salary dollars, including in-kind contributions $1000s	$1000s+ (PYs x $55,000) Total
Environment Canada (Ecological Monitoring and Assessment Network – EMAN)	97		10.00	10.00
Envirotel	52	0.01	0.01	0.37
ESRF (Endangered Species Recovery Fund) (~50% federal, 50% WWF)	12, 32, 35, 37, 38, 47, 51, 54, 60, 72, 77-78, 87, 95, 97	3.35	204.20	388.45
Fisheries and Oceans Canada (DFO)	16, 20, 25, 38, 70, 70, 97, 98	8.47	736.35	1202.20
Forest Renewal BC	10	7.80	1739.00	2168.50
Friends of Ecological Reserves	95		2.00	2.00
Galiano Conservancy Association	95		0.30	0.30
Garry Oak Meadow Preservation Society	95		1.13	1.13
General Motors	98		10.00	10.00
Global Forest Society	95		1.20	1.20
Granby Zoological Society	60	0.09	3.00	7.95
Greater Vancouver Regional District	51	0.05		2.75
Greater Vancouver Zoo	51	0.20		11.00
Groupe de recherche et d'éducation sur les mammifères marin (GREMM)	17		34.00	34.00
Grouse Mountain Wildlife Refuge	51	0.10		5.50
Gwich'in Renewable Resource Board	9		23.00	23.00
Habitat Acquisition Trust	95	0.05		2.75
Habitat Conservation Trust Fund	30, 51	0.11	20.00	26.05
Habitat Stewardship Program (HSP) (federal: EC, DFO, Parks)	4, 5-7, 9, 14, 17, 19, 20, 25, 27, 30, 31, 32, 35, 37, 38, 39, 40, 45, 47, 48, 51, 54, 58, 60, 63, 64, 66, 67, 70, 74, 76, 77-78, 80, 94, 95, 97, 98, 99, 100, 101	6.97	4089.84	4473.19
Halifax Field Naturalists	38	0.10	0.20	5.70
Human Resources Development Canada (HRDC)	35, 38	2.60	12.15	155.15
Hydro-Québec	38		4.30	4.30
Imperial Esso Station	32		1.50	1.50
International Wildlife Coalition	12		1.50	1.50
Irving Eco-Centre	38	0.20	6.80	17.80
Island Nature Trust	38	0.02	2.90	4.00
Islands Trust Fund	57, 95	0.03	0.30	1.95
Kakivak Association	20		50.50	50.50
Kamloops Wildlife Park	35		26.20	26.20
Kent, Lambton, and Middlesex Stewardship Councils	97	0.80		44.00
London District Chiefs Council	98	0.02		1.10
Lower Thames Valley Conservation Authority	98	0.01		0.55
Makivik Corporation	19		35.00	35.00
Manitoba Government	9, 35	0.25	44.00	57.75
Manitoba Hydro	9		10.00	10.00
Martineau Walker Law Firm	30	0.20	5.00	16.00
McBride Foundation	47		1.00	1.00
McGill University	52	0.02	0.10	1.42
Memorial University of Newfoundland	77-78	0.40	9.20	31.20
Moose Jaw Exhibition Company	35		20.00	20.00
Mountain Equipment Co-Op	35, 47		11.50	11.50
MTT, an Aliant Company	38		0.16	0.16
Municipality of Barrington	38		0.70	0.70
Municipality of Cap-aux-Meules	38		0.20	0.20
Municipality of Étang-du-Nord	38		0.20	0.20
Municipality of Fatima	38		0.20	0.20
Municipality of Grande-Entrée	38		0.20	0.20
Municipality of Grosse-île	38		0.20	0.20

FINANCIAL CONTRIBUTORS (CONTINUED)

Contributor	Species or Group	Person Year ($55,000 on average, including salary and overhead) PYs	excluding salary dollars, including in-kind contributions $1000s	$1000s+ (PYs x $55,000) Total
Municipality of Havre-Aubert	38		0.20	0.20
Municipality of Havre-aux-Maisons	38		0.20	0.20
Municipality of Tracadie-Sheila	38		3.50	3.50
Namautaq Hunters and Trappers Organization	20	0.40		22.00
National Fish and Wildlife Foundation	35, 95		20.52	20.52
National Park Service (U.S.)	10	0.50	10.00	37.50
Natural Resources Canada (Canadian Forest Service)	9, 95	0.12	14.38	20.98
Natural Sciences and Engineering Research Council of Canada (NSERC)	32, 35, 77-78, 87, 95	2.40	129.75	261.75
Nature Conservancy of Canada	31, 35, 45, 52, 60, 95	0.68	33.37	70.66
Nature Saskatchewan	35, 37	0.04	5.50	7.70
Nature Trust of British Columbia	27	0.18	5.00	14.90
NBTel	38		0.70	0.70
New Brunswick Conservation Council	38		0.60	0.60
New Brunswick Government	30, 38, 74	2.21	13.70	135.25
Newfoundland-Labrador Government	30, 77-78	0.60	30.30	63.30
Niagara College of Applied Arts and Technology	82			
Niagara Peninsula Conservation Authority	54		1.50	1.50
North American Waterfowl Management Plan (federal)	32, 37	0.26	13.00	27.30
Northwest Territories Government	5-7, 9, 30	3.54	363.90	558.60
Nova Scotia Bird Society	38	0.05	0.20	2.95
Nova Scotia Government	38, 58	0.80	16.68	60.73
Nova Scotia Life Guard Association	38	0.03		1.65
Nova Scotia Nature Trust	38	0.02		0.83
Nunavut Government	5-7, 20, 30	1.21	298.00	364.55
Nunavut Wildlife Management Board	5-7, 16, 20		164.70	164.70
One Wild Earth	27		8.00	8.00
Ontario Government	9, 31, 37, 45, 47, 54, 60, 81, 87, 89, 93, 97, 98, 101	7.00	426.10	811.10
Operation Migration	28	5.20	408.00	694.00
Osoyoos Indian Band	27		2.00	2.00
P.E.O. Sisterhood, B.B. Chapter	95		1.00	1.00
Parks Canada Agency (Canadian Heritage; Parks)	1, 4, 5-7, 9, 10, 12, 14, 28, 30, 32, 33, 35, 38, 54, 55, 57, 58, 63, 72, 77-78, 81, 82, 87, 89, 94, 95	18.18	996.87	1996.77
Partners in Flight	44	0.01		0.55
Pembina Institute	35		1.40	1.40
Pender Islands Conservancy Association	57	0.01		0.44
Penticton Indian Band	27		10.00	10.00
Piper Project	38	0.50	22.00	49.50
Piping Plover Conservation Fund	38	0.04	0.70	2.90
Prince Edward Island Government	38	0.26	6.50	20.80
Qikiqtaaluk Wildlife Board	20	0.10	5.00	10.50
Quebec Government	8, 9, 30, 38, 52, 60, 63	6.01	323.35	653.90
Quebec Wildlife Foundation	30, 38, 60, 63	0.02	57.00	58.10
Queen's University	81	1.00	15.00	70.00
Regional District of Comox-Strathcona	95	0.01	1.60	1.88
Reptile Awareness Program	54		14.00	14.00
RESCOUSSE	63	0.20	6.50	17.50
Resolute Hunters and Trappers Association	5-7	0.67		36.85
Rockyview Wildlife Recovery Centre	35		2.10	2.10
Roy Consultants	38		4.95	4.95
Royal Ontario Museum	97	0.10		5.50
Salt Spring Island Conservancy	95	0.03		1.38
Saskatchewan Burrowing Owl Interpretive Centre	35		2.40	2.40
Saskatchewan Government	9, 28, 32, 35, 37	1.59	63.00	154.45

FINANCIAL CONTRIBUTORS (CONTINUED)

Contributor	Species or Group	Person Year ($55,000 on average, including salary and overhead) PYs	excluding salary dollars, including in-kind contributions $1000s	$1000s+ (PYs x $55,000) Total
Saskatchewan Minerals	37		5.00	5.00
Saskatchewan Wildlife Federation	35		2.50	2.50
SaskEnergy	35		7.00	7.00
SaskPower	37		10.00	10.00
Savary Island Land Trust	95		0.20	0.20
Seabird Island First Nations	51	0.20		11.00
Shell Canada	35, 47		9.80	9.80
Slocan Forest Products	9	0.30	109.57	126.07
South Saskatchewan Wildlife Association	35		1.00	1.00
Southern Alberta Land Trust Society	35		1.60	1.60
St. Clair Region Conservation Authority	97	0.80	5.00	49.00
St.-Laurent Vision 2000	63	0.00	14.50	14.50
St. Lawrence Valley Natural History Society	52, 60	0.06	2.10	5.62
St. Mary's Cement	98		5.00	5.00
Stratford Field Naturalists	98		0.50	0.50
Swan Lake Christmas Hill Nature Sanctuary	95	0.01	0.07	0.62
TD Friends of the Environment Foundation	37, 95		12.90	12.90
Tembec Industries	9		25.00	25.00
Terra-plex Innovations	54		3.80	3.80
The Land Conservancy of B.C. (TLC)	27, 95		40.30	40.30
TimberWest	13		150.00	150.00
Toronto Zoo	49, 54	0.60	20.00	53.00
Town of Beresford	74	0.15	2.60	10.85
Trans Canada Pipelines	35		1.00	1.00
U.S. Fish and Wildlife Service	95		300.00	300.00
Unidentified Source	9, 13, 30, 32	1.41	137.60	215.15
United States Government	10	3.80	241.00	450.00
Université du Québec à Montréal	93	1.00	5.00	60.00
Université du Québec à Rimouski	63	1.10	8.00	68.50
University of Alberta	32, 95	2.67	28.00	174.85
University of British Columbia	51, 57, 95	0.31	36.87	53.92
University of Calgary	72		6.00	6.00
University of Connecticut	30	0.03	1.50	3.15
University of Guelph	87, 89, 97	0.20	9.00	20.00
University of Maine	14		2.80	2.80
University of Regina	3	0.03	1.50	2.88
University of Victoria	57, 95	0.12	16.53	23.02
University of Waterloo	89	0.10		5.50
University of Western Ontario	89, 98	0.11	2.50	8.55
Upper Thames River Conservation Authority	60, 98	1.40	31.00	108.00
Vancouver Aquarium Marine Science Centre	51	0.05		2.75
Village Ford	35		5.30	5.30
Volunteers/Individuals	13, 14, 28, 30, 32, 35, 37, 38, 44, 47, 57, 58, 60, 77-78, 89, 95, 97, 98, 101	17.75	455.63	1431.77
Weyerhaeuser Canada	10, 13, 48, 95	2.25	201.23	324.98
Wildlife Habitat Canada	35, 54		15.00	15.00
Wildlife Preservation Trust Canada	12, 35	1.00	34.00	89.00
World Wildlife Fund (excluding contribution to ESRF)	9, 20, 25, 35	0.90	84.20	133.56
Yukon College	30	0.30	10.50	27.00
Yukon Government	4, 30	0.50	27.00	54.50
	TOTAL – 196 contributors	**176.02**	**16 539.39**	**26 220.24**

FUNDING per SPECIES OR GROUP

TOTALS > $50,000

≤ $50,000 ALL CONTRIBUTIONS TOTALED, ASSUMING 1 PY=$55,000

American Chestnut
4.95

Pallid Bat
4.0, 0.4 PY

Kirtland's Warbler
6.50, 0.01 PY

Southern Maidenhead Fern
0.15 PY

Northern Cricket Frog
5.0, 0.10 PY

Henslow's Sparrow
10.50, 0.02 PY

Aurora Trout
20.0

Sage Thrasher
0.60, 0.36 PY, 0.01 VPY

Sharp-tailed Snake
7.0, 0.26 PY, 0.05 VPY

Alleghany Mountain Dusky Salamander
4.11, 0.38 PY

Atlantic Whitefish
30.00

Atlantic Salmon
30.00

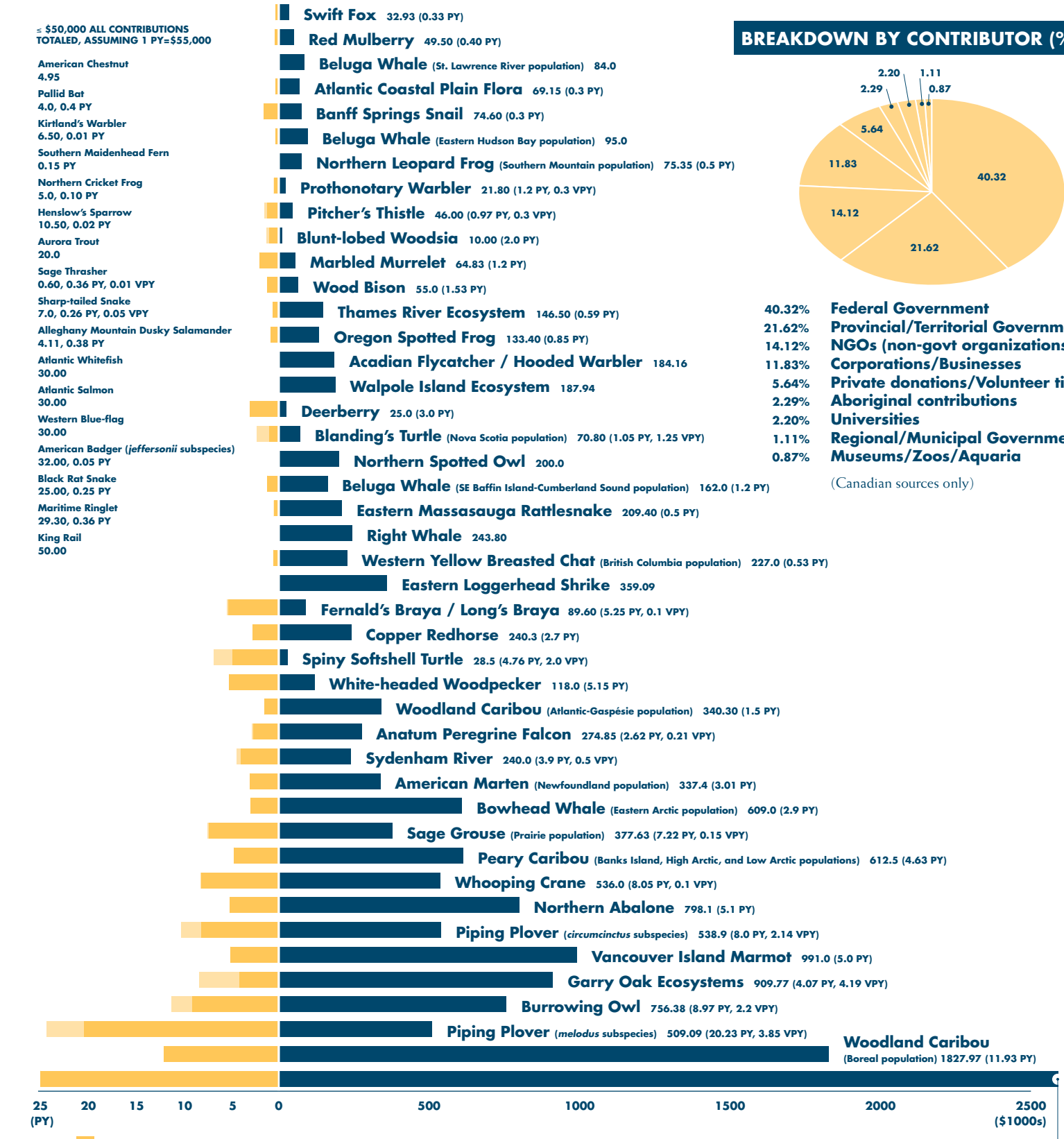
Western Blue-flag
30.00

American Badger (*jeffersonii* subspecies)
32.00, 0.05 PY

Black Rat Snake
25.00, 0.25 PY

Maritime Ringlet
29.30, 0.36 PY

King Rail
50.00



BREAKDOWN BY CONTRIBUTOR (%)

40.32%	Federal Government
21.62%	Provincial/Territorial Governments
14.12%	NGOs (non-govt organizations)
11.83%	Corporations/Businesses
5.64%	Private donations/Volunteer time
2.29%	Aboriginal contributions
2.20%	Universities
1.11%	Regional/Municipal Governments
0.87%	Museums/Zoos/Aquaria

(Canadian sources only)

CANADIAN WILDLIFE DIRECTORS COMMITTEE

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Recovery of Nationally Endangered Wildlife

Canada's national recovery program, launched in 1988 to rescue wildlife species at risk of extinction and to prevent other species from becoming at risk, is called RENEW (the acronym for REcovery of Nationally Endangered Wildlife). The program now involves federal, provincial and territorial government agencies, wildlife management boards authorized by a land claims agreement, aboriginal organizations, other organizations, and interested individuals working together for the recovery of endangered, threatened or, where possible, extirpated species that have been designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The recovery process includes formation of national recovery teams, development of recovery strategies and action plans, cooperative recovery actions, and program evaluation. The RENEW program operates under the direction of the Canadian Endangered Species Conservation Council and is supported by the RENEW Secretariat, based at the Canadian Wildlife Service in Ottawa.

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