

Environmental Indicator: Species at Risk in British Columbia

Primary Indicator: *Percentage of known species on the British Columbia Red list of threatened or endangered species.*

Selection of the Indicator: The percentage of known species that are listed as threatened or endangered is a *state* or *condition* indicator. It provides a direct measure of the current status of biological diversity. In British Columbia, the provincial “Red list” (see box) includes species that are extirpated, threatened, endangered or candidates for legal designation as such. The status of species is widely used as an environmental indicator by international organizations such as the Organization for Economic Cooperation and Development, World Conservation Union (IUCN), Environment Canada, and the United States Environmental Protection Agency.

Species Status List Criteria

Red List: Includes any indigenous species or subspecies considered to be extirpated, endangered, or threatened in British Columbia. Extirpated taxa no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered taxa are facing imminent extirpation or extinction. Threatened taxa are likely to become endangered if limiting factors are not reversed. Red-listed taxa include those that have been, or are being, evaluated for these designations.

Blue List: Includes any indigenous species or subspecies considered to be vulnerable in British Columbia. Vulnerable taxa are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed taxa are at risk, but are not extirpated, endangered or threatened.

Yellow List: Any indigenous species or subspecies that is not at risk in British Columbia. The Conservation Data Centre tracks some Yellow listed taxa that are vulnerable during times of seasonal concentration (e.g., breeding colonies).

British Columbia has signed the National Accord for the Protection of Species at Risk. Established in 1996, the Accord combines the responsibilities of federal, provincial, and territorial governments in a coordinated national approach to conserve species at risk and prevent species from becoming extinct as a consequence of human activities. It emphasizes preventative measures, stewardship initiatives, and the need for partnerships on both public and private lands. The national framework is implemented by the Canadian Endangered Species Conservation Council (CESCC), a federal government Secretariat, and the Canadian Wildlife Director’s Committee. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is responsible for national assessment and designation of species at risk.

Jurisdictions responsible for the management of a species develop a National Recovery Plan within one year for endangered species, and within two years for threatened species. These plans identify key biological and land use issues, and the research, management, technical, and

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economic feasibility of the approach to recovery of the species. The success of the accord depends on federal, provincial/territorial legislation, regulations, policies, and programs. In 1999, British Columbia committed to a process of consultation to fill gaps that presently exist in meeting the National Accord. The content of the Accord formed the basis for the federal Species At Risk Act, which enacted in 2002.

Data and Sources: The analysis presented includes species on the provincial Red and Blue lists. The following data include vertebrates, vascular plants, butterflies and dragonflies that are native to BC. It includes those that breed in the province as well as those that are regular visitors. Before 2000, this analysis was restricted to native, breeding species of vertebrates and vascular plants. In 2000, non-breeding species were added by the BC Conservation Data Centre (CDC) to their species tracking lists. Butterflies and dragonflies were also added in 2000.

The counts of species were determined by applying the following criteria to the CDC tracking lists:

- A subspecies was included in the count of Red or Blue species when there were no other subspecies of that species in BC. If there were other subspecies in British Columbia not on the Red or Blue list, then the species was not included in the count.
- Where two or more subspecies were listed and no others occur in British Columbia, then the species was included in the count for the list with the lower status (e.g., Blue list status is lower than Red).

Note that by excluding populations and most subspecies, this methodology underestimates the true extent to which biodiversity in BC is threatened or endangered. Most of the annual changes in the numbers of species at risk in recent years are the result of taxonomic changes or improvements in the tracking system, and do not necessarily represent changes in the overall status of species at risk in the province.

The occurrence of subspecies in BC was determined using Anon (2000) and Guppy and Shepard (2001):

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Table 1. Number and Percentage of Red- and Blue-listed Native Species in BC

	Red-listed Species Number of breeding spp. in () Number of breeding+non-breeding spp. in []			Blue-listed Species Number of breeding spp. in () Number of breeding+non-breeding spp. in []			Total Number of Native, Breeding Species in BC Total Breeding + non-breeding spp. in []		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Freshwater Fish	31% (26)	31% (26)	30% (24)	8% (7)	8% (7)	16% (13)	84	84	80 ¹
Amphibians	22% (4)	26% (5)	26% (5)	11% (2)	11% (2)	21% (4)	18	19 ²	19
Reptiles	23% (3)	29% (4)	43% (6)[38%]	38% (5)	36% (5)	29% (4)[25%]	13	14 ³	14 [16] ⁴
Birds	8% (24)	10% (29)	11% (32) [7% (34)]	15% (44)	11% (34)	12% (34) [8% (38)]	287	290	291 [465] ⁵
Terrestrial Mammals	11% (11)	11% (11)	11% (11)	16% (17)	17% (18)	17% (18)	104	104	104
Marine Mammals	-	-	29% (2) [10% (3)]	-	-	29% (2) [38% (11)]	-	-	7 [29] ⁶
Vascular Plants	11% (234)	12% (241)	11% (257)	18% (376)	17% (354)	14% (339)	2042	2042	2333
Total Vertebrates	13% (68)	15% (75)	16% (80) [12% (83)]	14% (73)	13% (66)	15% (75)[12% (88)]	506	511	515 (713)
Butterflies	-	-	7% (12) [6% (12)]	-	-	26% (47) [16% 30)]	-	-	178 (187) ⁷
Dragonflies	-	-	10% (9) [10% (9)]	-	-	20% (17) [20% (17)]	-	-	86 (87) ⁸

Source: With the exception noted below, data are from the Ministry of Sustainable Resource Management Conservation Data Centre. 2002.

Notes: Numbers for vascular plants are current to July 2001, all other groups are current to February 2002. Marine mammals were first included on the list in 1999. The 2002 lists include non-breeding native species, which adds species to both bird and the mammal lists.

¹ Since 1999, 6 stickleback species have been rolled into 2 species, resulting in a decrease in the total number of species.

² Spotted Frog has been divided into 2 distinct species; one is Red-listed (Oregon Spotted Frog). The Tailed Frog is now recognized as 2 distinct species; one is Red-listed, one is Blue-listed.

³ The Western Pond Turtle has been added; previously not thought to be native to BC., it is now recognized as a native species.

⁴ 2 species of marine turtles, Green Turtle and the Leatherback turtle, have been added.

⁵ Includes 58 regular migrants and winter residents and 116 accidental visitors.

⁶ Species are: Killer Whales, Harbour Porpoise, Dall's Porpoise, Pacific White-sided Dolphins, Northern Sea Lion, Harbour Seal, Sea Otter. Of the 3 ecotypes of Killer whales, 2 are Red-listed and 1 is Blue-listed.

⁷ Includes 9 migrant, non-breeding species. From: Guppy and Shepard 2001. Butterflies of British Columbia Including Western Alberta, Southern Yukon, the Alaska Panhandle, Washington, Northern Oregon, Northern Idaho, Northwestern Montana.

⁸ One species is an accidental visitor.

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Table 2. Additions (+) And Deletions (-) to BC Red and Blue Lists of Vertebrates Between 1999 and 2002 (Species Level Only); Current as of February 2002

	RED LIST (Threatened or Endangered)	BLUE-LIST (Special Concern)
Freshwater Fish	+ Green Sturgeon + Vanada Creek Limnetic Stickleback + Vanada Creek Benthic Stickleback + Lake Lamprey + Western Brook Lamprey	+ Dolly Varden + Eulachon + Goldeye + Inconnu + Least Cisco + Arctic Cisco - Balkwill Lake Benthic Stickleback* - Balkwill Lake Limnetic Stickleback* - Emily Lake Benthic Stickleback* - Emily Lake Limnetic Stickleback* - Giant Pygmy Whitefish - Northern Redbelly Dace X Finescale Dace - Priest Lake Benthic Stickleback* - Priest Lake Limnetic Stickleback*
Amphibians	- Coeur D'Alene Salamander	+ Coeur D'Alene Salamander
Reptiles	+ Leatherback	+ Red-legged Frog - Leatherback - Rubber Boa
Birds	- Black-throated Green Warbler + American Avocet + Baird's Sandpiper + Double-crested Cormorant + Pink-footed Shearwater + Short-tailed Albatross - Broad-winged Hawk	+ Band-tailed Pigeon + Black-throated Green Warbler + Buller's Shearwater + Flesh-footed Shearwater + Laysan Albatross + Le Conte's Sparrow - American Avocet - Double-crested Cormorant - Hutton's Vireo + Broad-winged Hawk
Mammals	+ Merriam's shrew + Northern Right Whale + Preble's shrew	+ Arch-beaked whale + Bering Sea Beaked whale + Blue whale + Fin whale + Gray whale + Humpback whale + Northern fur seal + Sei whale + Sperm whale

*These sticklebacks were down listed to Blue after they were determined to be a single species.

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Table 3. Additions (+) And Deletions (-) to BC Red and Blue Lists of Vascular Plant Species Between 1999 and 2001 (Species Level Only)

RED LIST (Threatened or Endangered)	BLUE-LIST (Special Concern)
- <i>Allium geyeri</i> var. <i>geyeri</i>	- <i>Elymus x yukonensis</i>
- <i>Cryptantha intermedia</i> var. <i>grandiflora</i>	- <i>Phlox hoodii</i>
- <i>Castilleja fulva</i>	- <i>Elymus x saundersii</i>
- <i>Chenopodium desiccatum</i>	- <i>Erigeron lanatus</i>
- <i>Woodwardia fimbriata</i>	- <i>Apocynum sibiricum</i> var. <i>salignum</i>
- <i>Castilleja pallescens</i>	- <i>Astragalus filipes</i>
- <i>Cryptantha fendleri</i>	- <i>Carex saximontana</i>
- <i>Delphinium depauperatum</i>	- <i>Salix setchelliana</i>
- <i>Carex swanii</i>	- <i>Senecio macounii</i>
- <i>Mirabilis hirsuta</i>	- <i>Sidalcea hendersonii</i>
- <i>Catabrosa aquatica</i>	- <i>Cardamine parviflora</i> var. <i>arenicola</i>
+ <i>Carex adusta</i>	- <i>Plantago eriopoda</i>
+ <i>Carex lenticularis</i> var. <i>lenticularis</i>	- <i>Euphrasia disjuncta</i>
+ <i>Cirsium drummondii</i>	- <i>Hydrophyllum fendleri</i> var. <i>albifrons</i>
+ <i>Muhlenbergia filiformis</i>	- <i>Impatiens capensis</i>
+ <i>Navarretia divaricata</i>	- <i>Nemophila breviflora</i>
+ <i>Piperia candida</i>	- <i>Ranunculus suksdorfii</i>
+ <i>Potamogeton nodosus</i>	- <i>Douglasia montana</i>
+ <i>Schoenoplectus americanus</i>	+ <i>Carex backii</i>
+ <i>Solidago gigantea</i> ssp. <i>Serotina</i>	+ <i>Elymus calderi</i>
+ <i>Cardamine parviflora</i> var. <i>arenicola</i>	+ <i>Elymus sibiricus</i>
+ <i>Plantago eriopoda</i>	+ <i>Luzula kjellmaniana</i>
+ <i>Yabea microcarpa</i>	+ <i>Stuckenia vaginata</i>
+ <i>Oxalis oregana</i>	- <i>Yabea microcarpa</i>
+ <i>Rubus nivalis</i>	- <i>Oxalis oregana</i>
+ <i>Scolochloa festucacea</i>	- <i>Rubus nivalis</i>
+ <i>Arabis hirsuta</i> var. <i>hirsuta</i>	- <i>Scolochloa festucacea</i>
+ <i>Botrychium montanum</i>	- <i>Arabis hirsuta</i> var. <i>hirsuta</i>
+ <i>Scirpus pallidus</i>	- <i>Botrychium montanum</i>
+ <i>Eriogonum pauciflorum</i> var. <i>pauciflorum</i>	- <i>Scirpus pallidus</i>
- <i>Linanthus septentrionalis</i>	- <i>Eriogonum pauciflorum</i> var. <i>pauciflorum</i>
- <i>Ophioglossum pusillum</i>	+ <i>Linanthus septentrionalis</i>
- <i>Epipactis gigantea</i>	+ <i>Ophioglossum pusillum</i>
	+ <i>Epipactis gigantea</i>

Some species previously found in British Columbia have been extirpated, or have become extinct. Species making up this specific sub-set of the Red-listed species list are identified below.

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Table 4. Species Extinct in British Columbia

Species	Date Last Seen	Location Previously Found	Taxonomic Group	Presumed Reason for Extinction
Passenger Pigeon	1914	several areas in British Columbia	bird	over-hunting
Dragon Lake Whitefish	1956	one lake near junction of Quesnel and Fraser rivers	fish	lake poisoned for the introduction of trout
Hadley Lake Limnetic Stickleback	early 1990s	one lake on Lasqueti Island in the Georgia Strait	fish	eliminated as a result of an unauthorized introduction of catfish
Hadley Lake Benthic Stickleback	early 1990s	one lake on Lasqueti Island in the Georgia Strait	fish	eliminated as a result of an unauthorized introduction of catfish

Table 5. Species Extirpated in British Columbia.

Species	Date Last Seen	Location Previously Found	Taxonomic Group	Presumed Reason for Extirpation
White-tailed Jackrabbit	1981	Southern Okanagan and Similkameen Valleys	mammal	habitat loss and illegal hunting
Sage Grouse	1918	Southern Okanagan Valley	bird	over-hunting
Yellow-billed Cuckoo	1920s	Fraser River lowlands and southeastern Vancouver Island	bird	loss of riparian forests
Short-horned Lizard	1898	Southern Okanagan Valley	reptile	unknown
Pink Sand-verbena	1927*	West coast of southern Vancouver Island	vascular plant	unknown
Common Downingia	1950	Lake mudflats near Creston	vascular plant	unknown
Silver-spotted Skipper	?	?	butterflies and Skippers	?
Large Marble	?	?	butterflies and Skippers	Habitat loss
Viceroy	?	?	butterflies and Skippers	Pesticides; habitat loss

*Pink Sand-verbena was "re-discovered" in 2001.

Methodology and Reliability: Species at risk in British Columbia are tracked by the Conservation Data Centre (CDC), <http://srmwww.gov.bc.ca/cdc/> of the Ministry of Sustainable Resource Management. They use a species tracking system developed by The Nature Conservancy (United States). This system is widely used in North America and enables comparisons among jurisdictions that use the same system. Vertebrate animals, vascular plants, dragonflies and butterflies in British Columbia have been classified using two designations for 'at risk', which are Red-list species and Blue-list species.

A fact sheet giving an overview of how species are ranked in British Columbia is available at: <http://wlapwww.gov.bc.ca/wld/documents/ranking.pdf>. For a description of how the provincial Red- and Blue-list rankings relate to the CDC ranks, see: <http://srmwww.gov.bc.ca/atrisk/red-blue.htm> .

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Species are also ranked nationally and globally according to several systems. For designations used by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) see:

<http://www.cosewic.gc.ca/>

A current, complete and searchable database of species in British Columbia is available from the BC Species Explorer website at: <http://srmwww.gov.bc.ca/atrisk/toolintro.html> . The web site provides provincial species lists, forest district lists of Red and Blue species and conservation status of species, including distribution, life histories and conservation needs.

Appendix A provides a list of status assessments and recovery plans that have been completed or are in progress for Red- and Blue-listed species in British Columbia.

References:

Anon. 2000. The Vertebrates of British Columbia: Scientific and English Names. Standard Components of British Columbia's Biodiversity No. 2. (Ver.2.1). Ministry of Environment, Lands and Parks, Resource Inventory Branch. 209 pp.

Guppy C., and J.H. Shepard. 2001. Butterflies of British Columbia Including Western Alberta, Southern Yukon, the Alaska Panhandle, Washington, Northern Oregon, Northern Idaho and Northwestern Montana. UBC Press, Vancouver, BC. 414 pp.

Harcombe, A., B. Harper, S. Cannings, D. Fraser and W.T. Munro, 1994. "Terms of endangerment" in Harding, L.E. and E. McCullum, eds. Biodiversity in British Columbia: Our Changing Environment. Vancouver BC: Environment. Canada, Canadian Wildlife Service, Pacific and Yukon Region. pp. 11-28.

Secondary Measure: *Location of British Columbia's threatened and endangered species.*

Selection of the Indicator: Geographic distributions are important to consider when identifying species at risk. This indicator considers the location and distribution of Red- and Blue-listed species in relation to the ten terrestrial ecoprovinces in British Columbia (as defined by the ecological classification system). The ecoprovinces with the highest rate of human population growth coincide with regions of high biodiversity. The result is habitat loss for many species.

Data and Sources:

Note: Unlike the primary indicator, this analysis includes subspecies and populations.

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Table 4. Total Number of Red-listed (Threatened and Endangered) and Blue-listed (Vulnerable) Taxa¹ Occurring in Each Ecoprovince in BC.

ECOPROVINCE	Dragon flies		Butterflies		Fresh-water Fish		Reptiles		Amphibians		Mammals		Birds		Vascular Plants		Ecoprov Total	
	Red	Blue	Red	Blue	Red	Blue	Red	Blue	Red	Blue	Red	Blue	Red	Blue	Red	Blue	Red	Blue
Coast & Mountains	2	5	1	5	5	4	---	2	1	2	15	23	10	19	30	132	64	192
Georgia Depression	1	6	5	9	12	5	3	---	2	1	11	8	17	10	82	81	133	120
Southern Interior	4	8	6	10	3	5	2	4	1	2	6	14	14	16	117	107	153	166
Southern Interior Mountains	3	5	2	8	5	6	---	1	2	1	5	9	5	11	77	137	99	178
Central Interior	1	4	---	1	2	5	---	---	---	2	2	10	5	12	16	59	26	93
Sub-boreal Interior	---	4	---	3	3	4	---	---	---	1	---	4	---	6	8	44	11	66
Boreal Plains	---	1	---	13	---	3	---	---	---	---	1	5	5	8	15	28	21	57
Taiga Plains	1	2	1	4	5	2	---	---	---	---	1	6	3	7	2	23	13	44
Northern Boreal Mountains	1	2	---	14	3	4	---	---	---	1	2	8	2	8	14	124	22	161
Northeast Pacific	---	---	---	---	---	---	---	1	---	---	3	11	2	3	---	---	5	15
Total Number of Taxa ²	9	17	16	50	28	15	6	4	5	4	30	38	45	48	257	339		

Source: Ministry of Sustainable Resource Management, Conservation Data Centre, 2002 except vascular plants 2001.

¹ Taxa include sub-species.

² The total number of taxa for each column cannot be derived by adding the numbers in each column because one taxa may be at risk in several ecoprovinces.

Note: This analysis includes marine mammals and pelagic birds.

Appendix B provides the detailed distribution of Red- and Blue-listed vertebrates and invertebrates by ecoprovince.

Methodology and Reliability: Data for the indicator are collected by the Conservation Data Centre (CDC) using the processes outlined in the primary indicator. The ecoregional classification system (Demarchi, 1993) is used to delineate ecological boundaries. In this case, one of the highest levels of this hierarchical system, ecoprovinces, is used for aggregation.

The increase in the total number of threatened, endangered or vulnerable species for each ecoprovince since the release of, “Environmental Trends in British Columbia 1998”, is mostly the result of changes and improvements in tracking methods and taxonomy.

References:

Demarchi, D. 1993. *Ecoregions of British Columbia*. Victoria BC: British Columbia Ministry of Environment, Lands and Parks.

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Secondary Measure: *Threats to Red-listed vertebrates.*

Selection of the Indicator: This indicator shows the main reason(s) why these taxa are Red-listed. The percentage of taxa affected was calculated using the total number of Red-listed vertebrate taxa (139, includes both species and subspecies) as in the previous secondary measurement.

Data and Sources:

Source of Threat	Red-listed taxa affected	Red-listed taxa affected as % of total Red-listed taxa
Urban Development	62	45%
Environmental Contamination	55	40%
Agriculture	49	35%
Timber Management	45	32%
Intentional & Accidental Mortality	43	31%
Alien Species	42	30%
Human Disturbance	28	20%
Livestock Grazing	25	18%
Water Development	22	16%
Disruption of Fire Regime	16	12%
Mining, Oil and Gas Exploration and Development	15	11%
Tourism/Recreational Development	11	8%

Source: Ministry of Water, Land and Air Protection, Biodiversity Branch, 2002.

Notes: This analysis includes terrestrial and marine mammals, birds, amphibians, reptiles, fresh water fish, butterflies and dragonflies. Environmental contamination includes any chemical introduced to the environment that affects species at risk; intentional & accidental mortality includes illegal or intentional killing, road kill, pest control, mortality of prey species, and incidental take in fish nets; human disturbance includes intentional or deliberate disturbance to animals; and water development includes the diversion of water for agriculture, livestock residential use, industry use, dams, reservoirs and barriers to flow. Red-listed taxa include species and sub-species.

Appendix C provides a breakdown of types of threats affecting each Red -listed species or subspecies.

Appendix D shows types and numbers of threats for the three ecoprovinces with the greatest number of species at risk: Georgia Depression, Southern Interior and Southern Interior Mountains.

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Methodology and Reliability: Threats to species were defined according to the following criteria:

Habitat Degradation/Loss

a. Agricultural Development

This includes any alteration of natural habitats associated with food production. Examples include farms, orchards, and alfalfa fields. Species flagged as Xw are particularly affected by the draining of wetlands.

b. Disruption of Fire Regime

This includes forest encroachment and other changes resulting from fire suppression.

c. Livestock Grazing

This includes alteration of natural habitats associated with grazing by any domestic livestock species. Examples include cattle, sheep and horses. Dairy cattle are not included.

d. Mining, oil and gas exploration and development

This includes the construction of roads and pipelines for these activities,

e. Timber Management

This includes alteration of natural habitats associated with any aspect of forestry. Examples include timber harvesting, silvicultural treatment, site preparation, and vegetation management.

f. Urban and Commercial Development

Examples include subdivisions, shopping malls, town sites, and recreational facilities (including ski resorts). Species flagged as Xw are particularly affected by the draining of wetlands.

g. Water Development

This includes the diversion of water for agriculture, livestock, residential use and industry; and dams, reservoirs and other barriers to water flow.

2. Alien Species Introductions

This includes deliberate or inadvertent introductions by humans and natural range extensions from introductions elsewhere. Alien species are those that enter an ecosystem beyond their historic range. Examples include European starling, Norway rat, raccoons on the Queen Charlotte Islands, and game fish stocking of lakes.

3. Environmental Contamination

This includes any chemical introduced to the environment that affects species at risk. Examples include pesticides such as DDT, lead shot, and oil spills from tanker accidents, illegal dumping of bilges, and pipeline ruptures. Amphibians, raptorial birds, and colonial nesting seabirds are particularly sensitive to environmental contaminants.

4. Human Disturbance

This includes both deliberate and accidental disturbance of animals. Examples include the presence of humans that results in abandonment of bird nests and bat maternity roosts; and recreational activities such as off-road vehicles, snowmobiles, heli-skiing.

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5. Intentional and Accidental Mortality

This includes illegal or intentional killing, pest control, mortality of prey species and incidental take in fish nets. Examples include road kill, pest control of moles and pocket gophers considered at risk, accidental trapping of furbearers at risk, poaching of species such as caribou, bison, and bighorn sheep, and the deliberate killing of some species of snakes. Species flagged with Xf are those seabirds accidentally killed in fishnets. Legal harvest has the potential to affect some species at risk, but is tightly controlled, and is not the reason species are considered at risk.

Secondary Measure: *Comparison of species ‘at risk’ and those that’ may be at risk’ in British Columbia to other jurisdictions.*

Selection of the Indicator: One method to gauge the current state of species at risk in British Columbia is to consider a broader context by comparing the state of species at risk in other jurisdictions, especially adjacent jurisdictions. For this indicator, the number of species that are ‘At risk’ or ‘May be at risk’ in British Columbia is compared to those in other Canadian provinces and to Canada as a whole.

Data and Sources:

Jurisdiction	Number of species At risk and may be at risk*	Total number of species	% of total species that are at risk and may be at risk
Yukon	94	466	25%
Quebec	113	722	19%
Ontario	114	801	17%
BC	95	765	14%
Alberta	65	589	12%
Manitoba	63	593	12%
CANADA	108	1024	12%
New Brunswick	47	514	10%
Newfoundland	29	329	10%
Saskatchewan	46	552	9%
Nunavut	11	172	7%
Nova Scotia	18	402	5%
Labrador	13	287	5%
NWT	20	439	5%
PEI	9	302	3%

Source: Canadian Endangered Species Council (CESCC), 2001. Wild Species 2000: The General Status of Species in Canada. Ottawa minister of Public Works and Government Services Canada. Eight groups of species were analysed for this report – 7 were used in the analysis above. * Butterflies were excluded from the comparative analysis because 5 provinces and territories were unable to assess their butterflies. The Canadian total is not the sum of provincial totals because species can be at risk in a provincial but not nationally.

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Methodology and Reliability: The status of a species shown in this indicator was determined as a component of the National Accord for the Protection of Species. The Accord for the Protection of Species at Risk is an agreement in principle established in 1996 by provincial, territorial and federal ministers. The goal of the Accord is to prevent species in Canada from becoming extinct or extirpated because of human impact. The Accord commits the parties to "monitor, assess and report regularly on the status of all wild species". The provinces, territories and the federal government have agreed to report on the status of wild species in Canada every 5 years.

The process for ranking species is outlined below. The designations of 'At risk' and "May be at risk" were used for the indicator.

- Each species received a numerical rank from 1 to 8 that summarizes its status. A brief description of the rankings is provided in the table below:

RANK	CATEGORY	EXPLANATION
0	Extirpated/ extinct	No longer present in the province or territory or in Canada (for case of a national status rank) - not part of species richness
1	At risk	Form risk assessment determined that the species is at risk of extirpation or extinction (i.e. endangered or threatened)
2	May be at risk	Candidate for a detailed risk assessment
3	Sensitive	Not at risk of immediate extirpation or May extinction but may require special attention or protection to prevent them from becoming at risk
4	Secure	Not believed to be in rankings 1-3. Some of these species may have declining populations but remain relatively widespread or abundant
5	Undetermined	Insufficient knowledge to evaluate
6	Not assessed	Known to be present but not yet assessed
7	Exotic	Moved beyond their natural range as a result of human activity - excluded from other categories
8	Accidental	Occur infrequently and unpredictably, outside their usual range - not part of the species richness of Canada

Appendices

- A. Status Reports and Recovery Teams for Red- and Blue-Listed Species in British Columbia
- B. Distribution of Red-list Vertebrate and Invertebrate Taxa by Ecoprovince
- C. Type and Number of Threats to Red-Listed Taxa in British Columbia
- D. Type and Number of Threats to Red-Listed Taxa in the Three Ecoprovinces with the Most Species at Risk: Georgia Depression, Southern Interior, and Southern Interior Mountains

Species at Risk: Appendix A.
Environmental Trends in British Columbia 2002

Appendix A – Status Reports and Recovery Teams for Red- and Blue-Listed Species in British Columbia

Table A.1: Red-listed species that have COSEWIC status reports, as of November 2001.

Taxonomic Group	Common Name	Scientific name	2001 BC List	COSEWIC ID
Mosses		<i>Bartramia stricta</i>	Red	157
Plants	Seaside bird's-foot trefoil	<i>Lotus formosissimus</i>	Red	176
Plants	Austin's phantom orchid	<i>Cephalanthera austiniiae</i>	Red	170
Plants	Bearded owl-clover	<i>Triphysaria versicolor ssp. versicolor</i>	Red	158
Plants	Deltoid balsamroot	<i>Balsamorhiza deltoidea</i>	Red	161
Plants	Golden indian paintbrush	<i>Castilleja levisecta</i>	Red	164
Plants	Large-flowered brickellia	<i>Brickellia grandiflora</i>	Red	165
Plants	Lyall's mariposa lily	<i>Calochortus lyallii</i>	Red	166
Plants	Mosquito fern	<i>Azolla mexicana</i>	Red	168
Plants	Prairie lupine	<i>Lupinus lepidus</i>	Red	171
Plants	Purple sanicle	<i>Sanicula bipinnatifida</i>	Red	172
Plants	Rabbitbrush goldenweed	<i>Ericameria bloomeri</i>	Red	173
Plants	Scouler's corydalis	<i>Corydalis scouleri</i>	Red	175
Plants	Slender woolly-heads	<i>Psilocarphus tenellus var. tenellus</i>	Red	177
Plants	Small-flowered lipocarpha	<i>Lipocarpha micrantha</i>	Red	178
Plants	Snake-root	<i>Sanicula arctopoides</i>	Red	159
Plants	Southern maidenhair fern	<i>Adiantum capillus-veneris</i>	Red	179
Plants	Tall bugbane	<i>Cimicifuga elata</i>	Red	180
Plants	Tall woolly-heads	<i>Psilocarphus elatior</i>	Red	181
Plants	Toothcup meadow-foam	<i>Rotala ramosior</i>	Red	182
Plants	Water-plantain buttercup	<i>Ranunculus alismifolius var. alismifolius</i>	Red	183
Plants	White-top aster	<i>Aster curtus</i>	Red	184
Plants	Yellow montane violet	<i>Viola praemorsa ssp. praemorsa</i>	Red	185
Plants	Scarlet ammannia	<i>Ammannia robusta</i>	Red	174
Lepidopterans	Edith's Checkerspot, taylori subspecies	<i>Euphydryas editha taylori</i>	Red	93
Lepidopterans	Large Marble, undescr. island subspecies	<i>Euchloe ausonides subspecies 1</i>	Red	91
Lepidopterans	Greenish Blue, insulanus subspecies	<i>Plebeius saepiolus insulanus</i>	Red	90

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Taxonomic Group	Common Name	Scientific name	2001 BC List	COSEWIC ID
Lepidopterans	Dun Skipper	<i>Euphyes vestris</i>	Red	89
Lepidopterans	Behr's Hairstreak	<i>Satyrrium behrii</i>	Red	88
Freshwater Molluscs	Hotwater Physa	<i>Physella wrighti</i>	Red	87
Freshwater Fishes	Paxton Lake Benthic Stickleback	<i>Gasterosteus species 5</i>	Red	62
Freshwater Fishes	White Sturgeon (Fraser River population)	<i>Acipenser transmontanus population 4</i>	Red	85
Freshwater Fishes	White Sturgeon (Columbia River population)	<i>Acipenser transmontanus population 2</i>	Red	85
Freshwater Fishes	Western Brook Lamprey, var. Marifuga	<i>Lampetra richardsoni population 1</i>	Red	76
Freshwater Fishes	Vananda Creek Limnetic Stickleback	<i>Gasterosteus species 16</i>	Red	75
Freshwater Fishes	Vananda Creek Benthic Stickleback	<i>Gasterosteus species 17</i>	Red	63
Freshwater Fishes	Umatilla Dace	<i>Rhinichthys umatilla</i>	Red	84
Freshwater Fishes	White Sturgeon (Kootenay River population)	<i>Acipenser transmontanus population 1</i>	Red	85
Freshwater Fishes	Salish Sucker	<i>Catostomus species 4</i>	Red	80
Freshwater Fishes	Paxton Lake Limnetic Stickleback	<i>Gasterosteus species 4</i>	Red	74
Freshwater Fishes	Lake Lamprey	<i>Lampetra macrostoma</i>	Red	67
Freshwater Fishes	Green Sturgeon	<i>Acipenser medirostris</i>	Red	71
Freshwater Fishes	Giant Black Stickleback	<i>Gasterosteus species 1</i>	Red	70
Freshwater Fishes	Enos Lake Limnetic Stickleback	<i>Gasterosteus species 2</i>	Red	69
Freshwater Fishes	Enos Lake Benthic Stickleback	<i>Gasterosteus species 3</i>	Red	69
Freshwater Fishes	Cultus Lake Sculpin	<i>Cottus species 2</i>	Red	68
Freshwater Fishes	Speckled Dace	<i>Rhinichthys osculus</i>	Red	82
Freshwater Fishes	Nooksack River Dace	<i>Rhinichthys species 4</i>	Red	78
Freshwater Fishes	White Sturgeon (Nechako River population)	<i>Acipenser transmontanus population 3</i>	Red	85
Amphibians	Northern Leopard Frog	<i>Rana pipiens</i>	Red	6
Amphibians	Oregon Spotted Frog	<i>Rana pretiosa</i>	Red	9
Amphibians	Pacific Giant Salamander	<i>Dicamptodon tenebrosus</i>	Red	10
Amphibians	Tailed Frog, Kootenay population	<i>Ascaphus truei population 1</i>	Red	11
Amphibians	Tiger Salamander	<i>Ambystoma tigrinum</i>	Red	192
Reptiles	Pigmy Short-horned Lizard	<i>Phrynosoma douglasi</i>	Red	187
Reptiles	Sharptail Snake	<i>Contia tenuis</i>	Red	188
Reptiles	Night Snake	<i>Hypsiglena torquata</i>	Red	186
Birds	Burrowing Owl	<i>Athene cunicularia</i>	Red	20

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Taxonomic Group	Common Name	Scientific name	2001 BC List	COSEWIC ID
Birds	Peregrine Falcon, anatum subspecies	<i>Falco peregrinus anatum</i>	Red	14
Birds	Northern Goshawk, laingi subspecies	<i>Accipiter gentilis laingi</i>	Red	48
Birds	Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsoni</i>	Red	40
Birds	Marbled Murrelet	<i>Brachyramphus marmoratus</i>	Red	38
Birds	Lewis's Woodpecker, Georgia Depression Population	<i>Melanerpes lewis population 1</i>	Red	36
Birds	Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	Red	52
Birds	Prairie Falcon	<i>Falco mexicanus</i>	Red	47
Birds	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	Red	26
Birds	Yellow-breasted Chat	<i>Icteria virens</i>	Red	58
Birds	American White Pelican	<i>Pelecanus erythrorhynchos</i>	Red	13
Birds	Forster's Tern	<i>Sterna forsteri</i>	Red	29
Birds	Spotted Owl	<i>Strix occidentalis</i>	Red	44
Birds	White-headed Woodpecker	<i>Picoides albolarvatus</i>	Red	59
Birds	Sage Thrasher	<i>Oreoscoptes montanus</i>	Red	53
Birds	Western Screech-Owl, macfarlanei subspecies	<i>Otus kennicottii macfarlanei</i>	Red	57
Mammals	Pallid Bat	<i>Antrozous pallidus</i>	Red	110
Mammals	Badger	<i>Taxidea taxus</i>	Red	98
Mammals	Caribou, Southern population	<i>Rangifer tarandus population 1</i>	Red	121
Mammals	Ermine, haidarum subspecies	<i>Mustela erminea haidarum</i>	Red	102
Mammals	Wood Bison	<i>Bison bison athabascaae</i>	Red	118
Mammals	Keen's Long-eared Myotis	<i>Myotis keenii</i>	Red	105
Mammals	Pacific Water Shrew	<i>Sorex bendirii</i>	Red	109
Mammals	Sea Otter	<i>Enhydra lutris</i>	Red	111
Mammals	Townsend's Mole	<i>Scapanus townsendii</i>	Red	114
Mammals	Vancouver Island Marmot	<i>Marmota vancouverensis</i>	Red	115
Mammals	Wolverine, vancouverensis subspecies	<i>Gulo gulo vancouverensis</i>	Red	117
Mammals	Mountain Beaver, rufa subspecies	<i>Aplodontia rufa rufa</i>	Red	106
Marine Mammals	Northern Right Whale	<i>Eubalaena glacialis</i>	Red	147

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Table A.2: Blue-listed species that have COSEWIC status reports, as of November 2001.

Taxonomic Group	Common Name	Scientific name	2001 BC List	COSEWIC ID
Plants	Vancouver island beggarticks	<i>Bidens amplissima</i>	Blue	195
Plants	Okanogan fameflower	<i>Talinum sediforme</i>	Blue	162
Plants	Macoun's meadow-foam	<i>Limnanthes macounii</i>	Blue	167
Plants	Giant helleborine	<i>Epipactis gigantea</i>	Blue	163
Plants	Coastal wood fern	<i>Dryopteris arguta</i>	Blue	160
Lepidopterans	Monarch	<i>Danaus plexippus</i>	Blue	92
Freshwater Molluscs	Rocky Mountain Capshell	<i>Acroloxus coloradensis</i>	Blue	194
Freshwater Fishes	Shorthead Sculpin	<i>Cottus confusus</i>	Blue	81
Freshwater Fishes	Mountain Sucker	<i>Catostomus platyrhynchus</i>	Blue	77
Freshwater Fishes	Chiselmouth	<i>Acrocheilus alutaceus</i>	Blue	65
Freshwater Fishes	Mottled Sculpin, hubbsi subspecies	<i>Cottus bairdi hubbsi</i>	Blue	66
Amphibians	Coeur d'alene Salamander	<i>Plethodon idahoensis</i>	Blue	2
Amphibians	Red-legged Frog	<i>Rana aurora</i>	Blue	7
Amphibians	Great Basin Spadefoot	<i>Spea intermontana</i>	Blue	5
Amphibians	Tailed Frog, Coastal population	<i>Ascaphus truei population 2</i>	Blue	1
Reptiles	Racer	<i>Coluber constrictor</i>	Blue	189
Marine Reptiles	Leatherback	<i>Dermochelys coriacea</i>	Blue	156
Birds	Short-eared Owl	<i>Asio flammeus</i>	Blue	55
Birds	Flammulated Owl	<i>Otus flammeolus</i>	Blue	28
Birds	Western Screech-Owl, saturatus subspecies	<i>Otus kennicottii saturatus</i>	Blue	57
Birds	Trumpeter Swan	<i>Cygnus buccinator</i>	Blue	56
Birds	Peregrine Falcon, pealei subspecies	<i>Falco peregrinus pealei</i>	Blue	46
Birds	Long-billed Curlew	<i>Numenius americanus</i>	Blue	37
Birds	Lewis's Woodpecker	<i>Melanerpes lewis</i>	Blue	36
Birds	Gyrfalcon	<i>Falco rusticolus</i>	Blue	34
Birds	Gray Flycatcher	<i>Empidonax wrightii</i>	Blue	33
Birds	Caspian Tern	<i>Sterna caspia</i>	Blue	22

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Taxonomic Group	Common Name	Scientific name	2001 BC List	COSEWIC ID
Birds	Canyon Wren	<i>Catherpes mexicanus</i>	Blue	21
Birds	Barn Owl	<i>Tyto alba</i>	Blue	17
Birds	Ancient Murrelet	<i>Synthliboramphus antiquus</i>	Blue	15
Birds	Great Blue Heron, fannini subspecies	<i>Ardea herodias fannini</i>	Blue	45
Mammals	Cascade Mantled Ground Squirrel	<i>Spermophilus saturatus</i>	Blue	101
Mammals	Fringed Myotis	<i>Myotis thysanodes</i>	Blue	103
Mammals	Grizzly Bear	<i>Ursus arctos</i>	Blue	104
Mammals	Mountain Beaver, rainieri subspecies	<i>Aplodontia rufa rainieri</i>	Blue	106
Mammals	Nuttall's Cottontail	<i>Sylvilagus nuttallii</i>	Blue	108
Mammals	Spotted Bat	<i>Euderma maculatum</i>	Blue	113
Mammals	Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	Blue	116
Mammals	Wolverine, luscus subspecies	<i>Gulo gulo luscus</i>	Blue	117
Mammals	Caribou, Northern population	<i>Rangifer tarandus</i> population 15	Blue	120
Mammals	Caribou, Boreal population	<i>Rangifer tarandus</i> population 14	Blue	119
Marine Mammals	Arch-beaked Whale	<i>Mesoplodon carlhubbsi</i>	Blue	138
Marine Mammals	Sperm Whale	<i>Physeter catodon</i>	Blue	150
Marine Mammals	Killer Whale (West Coast Transient population)	<i>Orcinus orca</i> population 3	Blue	140
Marine Mammals	Killer Whale (Northeast Pacific Resident population)	<i>Orcinus orca</i> population 1	Blue	141
Marine Mammals	Killer Whale (Northeast Pacific Offshore population)	<i>Orcinus orca</i> population 2	Blue	191
Marine Mammals	Humpback Whale	<i>Megaptera novaeangliae</i>	Blue	139
Marine Mammals	Harbour Porpoise	<i>Phocoena phocoena</i>	Blue	136
Marine Mammals	Grey Whale	<i>Eschrichtius robustus</i>	Blue	135
Marine Mammals	Blue Whale	<i>Balaenoptera musculus</i>	Blue	127
Marine Mammals	Killer Whale (Northeast Pacific Resident) population)	<i>Orcinus orca</i> southern resident population	Blue	190
Marine Mammals	Fin Whale	<i>Balaenoptera physalus</i>	Blue	134

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Table A.3: Status of Recovery Teams or Plans in British Columbia for Species at Risk, as of November 2001.

Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Mosses		<i>Bartramia stricta</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Mosses		<i>Tortula laevipila</i> var. <i>meridionalis</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Golden indian paintbrush	<i>Castilleja levisecta</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Howell's triteleia	<i>Triteleia howellii</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Howell's montia	<i>Montia howellii</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Holm's rocky mountain sedge	<i>Carex scopulorum</i> var. <i>bracteosa</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Holboell's rockcress	<i>Arabis holboellii</i> var. <i>pinetorum</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Hairy water-clover	<i>Marsilea vestita</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Hairgrass dropseed	<i>Sporobolus airoides</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Hutchinsia	<i>Hutchinsia procumbens</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Grand coulee owl-clover	<i>Orthocarpus barbatus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Lindley's microseris	<i>Microseris lindleyi</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Globe gilia	<i>Gilia capitata</i> var. <i>capitata</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Giant helleborine	<i>Epipactis gigantea</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Freckled milk-vetch	<i>Astragalus lentiginosus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Fragrant popcorn-flower	<i>Plagiobothrys figuratus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Fox sedge	<i>Carex vulpinoidea</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Gray's desert-parsley	<i>Lomatium grayi</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Macoun's meadow-foam	<i>Limnanthes macounii</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Munroe's globe-mallow	<i>Sphaeralcea munroana</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Muhlenberg's centaury	<i>Centaurium muehlenbergii</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Mousetail	<i>Myosurus apetalus</i> var. <i>borealis</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Mosquito fern	<i>Azolla mexicana</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Montana larkspur	<i>Delphinium bicolor</i> ssp. <i>bicolor</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Marsh muhly	<i>Muhlenbergia glomerata</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Kellogg's rush	<i>Juncus kelloggii</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Macrae's clover	<i>Trifolium dichotomum</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Narrow-leaved brickellia	<i>Brickellia oblongifolia</i> ssp. <i>oblongifolia</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Lyall's mariposa lily	<i>Calochortus lyallii</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Long-leaved mugwort	<i>Artemisia longifolia</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Lobb's water-buttercup	<i>Ranunculus lobbii</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Little fescue	<i>Festuca minutiflora</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Five-angled dodder	<i>Cuscuta pentagona</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Lemmon's sword fern	<i>Polystichum lemmonii</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Manroot	<i>Marah oreganus</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Bearded sedge	<i>Carex comosa</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	California buttercup	<i>Ranunculus californicus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Bushy cinquefoil	<i>Potentilla paradoxa</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Brook spike-primrose	<i>Epilobium torreyi</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Branched phacelia	<i>Phacelia ramosissima</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Booth's willow	<i>Salix boothii</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Foothill sedge	<i>Carex tumulicola</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Blackened sedge	<i>Carex epapillosa</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Coastal wood fern	<i>Dryopteris arguta</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Bearded owl-clover	<i>Triphysaria versicolor</i> ssp. <i>versicolor</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Beaked spike-rush	<i>Eleocharis rostellata</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Awned cyperus	<i>Cyperus squarrosus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Atkinson's coreopsis	<i>Coreopsis tinctoria</i> var. <i>atkinsoniana</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Annual paintbrush	<i>Castilleja minor</i> ssp. <i>minor</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Andean evening primrose	<i>Camissonia andina</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Blue vervain	<i>Verbena hastata</i> var. <i>scabra</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Blue vervain	<i>Verbena hastata</i> var. <i>scabra</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Dalles milk-vetch	<i>Astragalus sclerocarpus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

**Species at Risk: Appendix A.
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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Dotted smartweed	<i>Polygonum punctatum</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	False-pimpernel	<i>Lindernia dubia</i> var. <i>anagallidea</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Erect pigmyweed	<i>Crassula connata</i> var. <i>connata</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Dwarf sandwort	<i>Minuartia pusilla</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Dwarf groundsmoke	<i>Gayophytum humile</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Dry-land sedge	<i>Carex xerantica</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Carolina meadow foxtail	<i>Alopecurus carolinianus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Deltoid balsamroot	<i>Balsamorhiza deltoidea</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Cut-leaved water-parsnip	<i>Berula erecta</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

**Species at Risk: Appendix A.
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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Cushion fleabane	<i>Erigeron poliospermus</i> var. <i>poliospermus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Common twinpod	<i>Physaria didymocarpa</i> var. <i>didymocarpa</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Columbia goldenweed	<i>Pyrrocoma carthamoides</i> var. <i>carthamoides</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Cockscomb cryptantha	<i>Cryptantha celosioides</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Flat-topped broomrape	<i>Orobanche corymbosa</i> ssp. <i>mutabilis</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Dense-flowered lupine	<i>Lupinus densiflorus</i> var. <i>densiflorus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Two-spiked moonwort	<i>Botrychium paradoxum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Small-flowered ipomopsis	<i>Ipomopsis minutiflora</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Small-flowered lipocarpha	<i>Lipocarpha micrantha</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Small-flowered tonella	<i>Tonella tenella</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW

Species at Risk: Appendix A.
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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Snake-root	<i>Sanicula arctopoides</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Southern maidenhair fern	<i>Adiantum capillus-veneris</i>	Red	Southern Maidenhair Fern	Team initiated Nov. 2000
Plants	Spalding's milk-vetch	<i>Astragalus spaldingii</i> ssp. <i>spaldingii</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Spanish-clover	<i>Lotus unifoliolatus</i> var. <i>unifoliolatus</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Strict buckwheat	<i>Eriogonum strictum</i> ssp. <i>proliferum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Sulphur lupine	<i>Lupinus oreganus</i> var. <i>kincaidii</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Swamp onion	<i>Allium validum</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Tall beggarticks	<i>Bidens vulgata</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Tall woolly-heads	<i>Psilocarphus elatior</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Thyme-leaved spurge	<i>Chamaesyce serpyllifolia</i> ssp. <i>serpyllifolia</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Slender woolly-heads	<i>Psilocarphus tenellus</i> var. <i>tenellus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Whited's halimolobos	<i>Halimolobos whitedii</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Dense spike-primrose	<i>Epilobium densiflorum</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Nettle-leaved giant-hyssop	<i>Agastache urticifolia</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Yellow-flowered knotweed	<i>Polygonum ramosissimum</i> var. <i>ramosissimum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Yellow montane violet	<i>Viola praemorsa</i> ssp. <i>praemorsa</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Winged water-starwort	<i>Callitriche marginata</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Tufted lovegrass	<i>Eragrostis pectinacea</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

Species at Risk: Appendix A.
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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	White-top aster	<i>Aster curtus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Tweedy's willow	<i>Salix tweedyi</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Western stickseed	<i>Lappula occidentalis</i> var. <i>cupulata</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Western pearlwort	<i>Sagina decumbens</i> ssp. <i>occidentalis</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Western dogbane	<i>Apocynum x floribundum</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Western centaury	<i>Centaureum exaltatum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Water-plantain buttercup	<i>Ranunculus alismifolius</i> var. <i>alismifolius</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Thick-leaved thelypody	<i>Thelypodium laciniatum</i> var. <i>laciniatum</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Winged combseed	<i>Pectocarya penicillata</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Poison oak	<i>Toxicodendron diversilobum</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Red-rooted cyperus	<i>Cyperus erythrorhizos</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Purple spike-rush	<i>Eleocharis atropurpurea</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Purple sanicle	<i>Sanicula bipinnatifida</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Purple godetia	<i>Clarkia purpurea ssp. viminea</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Prairie pepper-grass	<i>Lepidium densiflorum</i> var. <i>pubicarpum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Prairie lupine	<i>Lupinus lepidus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Regel's rush	<i>Juncus regelii</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Porcupine sedge	<i>Carex hystricina</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Oniongrass	<i>Melica bulbosa</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Peach-leaf willow	<i>Salix amygdaloides</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Nuttall's waterweed	<i>Elodea nuttallii</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Obscure cryptantha	<i>Cryptantha ambigua</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Toothcup meadow-foam	<i>Rotala ramosior</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Northern linanthus	<i>Linanthus septentrionalis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Northern gooseberry	<i>Ribes oxycanthoides</i> ssp. <i>cognatum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Prairie gentian	<i>Gentiana affinis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Scouler's campion	<i>Silene scouleri</i> ssp. <i>grandis</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Slender popcorn-flower	<i>Plagiobothrys tenellus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	Showy phlox	<i>Phlox speciosa</i> <i>ssp. occidentalis</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Short-rayed aster	<i>Aster frondosus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Seaside bird's-foot trefoil	<i>Lotus formosissimus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Shy gilia	<i>Gilia sinuata</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Sickle-pod rockcress	<i>Arabis sparsiflora</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Scarlet globe-mallow	<i>Sphaeralcea coccinea</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Scarlet gaura	<i>Gaura coccinea</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Scarlet ammannia	<i>Ammannia robusta</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Rosy owl-clover	<i>Orthocarpus bracteosus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Plants	Silvery orache	<i>Atriplex argentea</i> <i>ssp. argentea</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Plants	River bulrush	<i>Bolboschoenus fluviatilis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Plants	Short-flowered evening-primrose	<i>Camissonia breviflora</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Lepidopterans	Boisduval's Blue, blackmorei subspecies	<i>Icaricia icarioides blackmorei</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Lepidopterans	Mormon Metalmark	<i>Apodemia mormo</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Lepidopterans	Bremner's Fritillary, bremnerii subspecies	<i>Speyeria zerene bremnerii</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Lepidopterans	California Hairstreak	<i>Satyrium californicum</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Lepidopterans	Common Ringlet, insulana subspecies	<i>Coenonympha californica insulana</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Lepidopterans	Edith's Checkerspot, taylori subspecies	<i>Euphydryas editha taylori</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Lepidopterans	Greenish Blue, insulanus subspecies	<i>Plebeius saepiolus insulanus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Lepidopterans	Immaculate Green Hairstreak	<i>Callophrys affinis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Lepidopterans	Large Marble, undescr. island subspecies	<i>Euchloe ausonides</i> subspecies 1	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Lepidopterans	Behr's Hairstreak	<i>Satyrium behrii</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Lepidopterans	Monarch	<i>Danaus plexippus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Lepidopterans	Moss' Elfin, mossii subspecies	<i>Incisalia mossii mossii</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Lepidopterans	Propertius Duskywing	<i>Erynnis propertius</i>	Blue	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Lepidopterans	Sooty Hairstreak	<i>Satyrium fuliginosum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Odonats	Vivid Dancer	<i>Argia vivida</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Other Terrestrial Invertebrates		<i>Scleropogon bradleyi</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Other Terrestrial Invertebrates		<i>Camirus porosus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Other Terrestrial Invertebrates		<i>Ceratocapsus downesi</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Other Terrestrial Invertebrates		<i>Clivenema fusca</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Other Terrestrial Invertebrates		<i>Nicocles rufus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Other Terrestrial Invertebrates		<i>Scolopostethus tropicus</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Other Terrestrial Invertebrates		<i>Harmostes dorsalis</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW

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Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Freshwater Molluscs	Hotwater Physa	<i>Physella wrighti</i>	Red	Hotwater Physa	Team being initiated
Freshwater Fishes	White Sturgeon (Columbia River population)	<i>Acipenser transmontanus</i> population 2	Red	White Sturgeon - Columbia River Populations	Team formed
Freshwater Fishes	White Sturgeon (Nechako River population)	<i>Acipenser transmontanus</i> population 3	Red	White Sturgeon - Nechako River Populations	Interim team in place
Freshwater Fishes	Umatilla Dace	<i>Rhinichthys umatilla</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Freshwater Fishes	Mountain Sucker	<i>Catostomus platyrhynchus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Freshwater Fishes	Mottled Sculpin, punctulatus subspecies	<i>Cottus bairdi punctulatus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Freshwater Fishes	Chiselmouth	<i>Acrocheilus alutaceus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Amphibians	Oregon Spotted Frog	<i>Rana pretiosa</i>	Red	Oregon Spotted Frog	Draft plan under review
Amphibians	Great Basin Spadefoot	<i>Spea intermontana</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Amphibians	Northern Leopard Frog	<i>Rana pipiens</i>	Red	Northern Leopard Frog	Team initiated Feb. 2001
Amphibians	Tiger Salamander	<i>Ambystoma tigrinum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Reptiles	Racer	<i>Coluber constrictor</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Reptiles	Painted Turtle	<i>Chrysemys picta</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Reptiles	Sharptail Snake	<i>Contia tenuis</i>	Red	Sharp-tailed Snake	Team initiated April 2001

**Species at Risk: Appendix A.
Environmental Trends in British Columbia 2002**

Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Reptiles	Pigmy Short-horned Lizard	<i>Phrynosoma douglasi</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Reptiles	Gopher Snake, deserticola subspecies	<i>Pituophis catenifer deserticola</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Reptiles	Western Rattlesnake	<i>Crotalus viridis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Reptiles	Night Snake	<i>Hypsiglena torquata</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Flammulated Owl	<i>Otus flammeolus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Prairie Falcon	<i>Falco mexicanus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Peregrine Falcon, anatum subspecies	<i>Falco peregrinus anatum</i>	Red	Anatum Peregrin Falcon	Erickson, G., et al., 1988. Anatum Peregrine Falcon Recovery Plan. Report No. 2. Ottawa: Recovery of Nationally Endangered Wildlife Committee, 52 pp.
Birds	Northern Goshawk, laingi subspecies	<i>Accipiter gentilis laingi</i>	Red	Queen Charlotte Goshawk	Team has not been formed yet
Birds	Marbled Murrelet	<i>Brachyramphus marmoratus</i>	Red	Marbled Murrelet	Conservation Assessment being prepared; Kaiser, G.W., et al., 1994. National Recovery Plan for the Marbled Murrelet. Report No. 8. Ottawa: Recovery of Nationally Endangered Wildlife Committee, 36 pp.
Birds	Long-billed Curlew	<i>Numenius americanus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

**Species at Risk: Appendix A.
Environmental Trends in British Columbia 2002**

Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Birds	Lewis's Woodpecker, Georgia Depression Population	<i>Melanerpes lewis</i> population 1	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Birds	Lewis's Woodpecker	<i>Melanerpes lewis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Lark Sparrow	<i>Chondestes grammacus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Gray Flycatcher	<i>Empidonax wrightii</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Bobolink	<i>Dolichonyx oryzivorus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	American Bittern	<i>Botaurus lentiginosus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	American Avocet	<i>Recurvirostra americana</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Barn Owl	<i>Tyto alba</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Spotted Owl	<i>Strix occidentalis</i>	Red	Northern Spotted Owl	Spotted Owl Management Plan Options Report (Spotted Owl Recovery Team, 1994); Spotted Owl Management Plan: Strategic Component (Spotted Owl Management Inter-agency Team, 1997). Not suitable replacements for a recovery plan.

**Species at Risk: Appendix A.
Environmental Trends in British Columbia 2002**

Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Birds	Ferruginous Hawk	<i>Buteo regalis</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Canyon Wren	<i>Catherpes mexicanus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	California Gull	<i>Larus californicus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Burrowing Owl	<i>Athene cunicularia</i>	Red	Burrowing Owl	Hjertass, D., S.Brechtel, K. De Smet, O. Dyer, E. Haug, G. Holroyd, P. James and J. Schmutz. 1995. National Recovery Plan for the Burrowing Owl. Report No. 13. Ottawa: Recovery of Nationally Endangered Wildlife Committee, 33 pp.
Birds	Brewer's Sparrow, breweri subspecies	<i>Spizella breweri breweri</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Great Blue Heron, herodias subspecies	<i>Ardea herodias herodias</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	White-headed Woodpecker	<i>Picoides albolarvatus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Sandhill Crane	<i>Grus canadensis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Sage Thrasher	<i>Oreoscoptes montanus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Yellow-breasted Chat	<i>Icteria virens</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

**Species at Risk: Appendix A.
Environmental Trends in British Columbia 2002**

Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Birds	White-throated Swift	<i>Aeronautes saxatalis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	White-throated Swift	<i>Aeronautes saxatalis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Western Screech-Owl, macfarlanei subspecies	<i>Otus kennicottii macfarlanei</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Western Meadowlark, Georgia Depression population	<i>Sturnella neglecta</i> population 1	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Birds	Western Bluebird, Georgia Depression population	<i>Sialia mexicana</i> population 1	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Birds	Vesper Sparrow, affinis subspecies	<i>Pooecetes gramineus affinis</i>	Red	Garry Oak Ecosystems	Fuchs, M., et al., 2001. Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada 2001-2006. Not yet submitted to RENEW
Birds	Swainson's Hawk	<i>Buteo swainsoni</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Short-eared Owl	<i>Asio flammeus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Birds	Williamson's Sapsucker, thyroideus subspecies	<i>Sphyrapicus thyroideus thyroideus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

Species at Risk: Appendix A.
Environmental Trends in British Columbia 2002

Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Mammals	Wood Bison	<i>Bison bison athabasca</i>	Red	Wood Bison	Final draft of plan being revised.
Mammals	Pallid Bat	<i>Antrozous pallidus</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Mammals	Bighorn Sheep	<i>Ovis canadensis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Mammals	Caribou, Southern population	<i>Rangifer tarandus</i> population 1	Red	Woodland Caribou - Southern Mountain Population	National team being initiated, plan being drafted
Mammals	Fringed Myotis	<i>Myotis thysanodes</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Mammals	Great Basin Pocket Mouse	<i>Perognathus parvus</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Mammals	Nuttall's Cottontail	<i>Sylvilagus nuttallii</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Mammals	Spotted Bat	<i>Euderma maculatum</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Mammals	Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Mammals	Vancouver Island Marmot	<i>Marmota vancouverensis</i>	Red	Vancouver Island Marmot	Janz, D.W., et al., 2000. National Recovery Plan for the Vancouver Island Marmot (<i>Marmota vancouverensis</i>) (2000 update). Report No. 19. Ottawa: Recovery of Nationally Endangered Wildlife Committee, 38 pp.
Mammals	Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

**Species at Risk: Appendix A.
Environmental Trends in British Columbia 2002**

Taxonomic Group	Common Name	Scientific name	2001 BC List	TeamName	Status of Team/Plan
Mammals	Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	Blue	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet
Mammals	Badger	<i>Taxidea taxus</i>	Red	American Badger - jeffersonii	Team initiated April 2001
Mammals	Western Red Bat	<i>Lasiurus blossevillii</i>	Red	South Okanagan - Similkameen Conservation Program	Some Recovery Action Plans have been prepared; have a prospectus, but no overall strategy yet

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Appendix B - Distribution of Red-Listed Vertebrate and Invertebrate Taxa by Ecoprovince.

Ecoprovince Distribution Of Threatened Or Endangered (Red-Listed) Vertebrate Taxa

Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
Freshwater Fish											
<i>Acipenser medirostris</i>	Green Sturgeon	X			X					X	
<i>Acipenser transmontanus</i> pop 1	White Sturgeon (Kootenay River Population)							X			
<i>Acipenser transmontanus</i> pop 2	White Sturgeon (Columbia River Population)							X			
<i>Acipenser transmontanus</i> pop 3	White Sturgeon (Nechako River Population)					X	X				
<i>Acipenser transmontanus</i> pop 4	White Sturgeon (Lower Fraser River Population)				X	X	X		X	X	
<i>Acipenser transmontanus</i> pop 5	White Sturgeon (Upper Fraser River Population)						X	X			
<i>Catostomus</i> sp 4	Salish Sucker									X	
<i>Coregonus artedi</i>	Cisco		X								
<i>Coregonus autumnalis</i>	Arctic Cisco		X								
<i>Coregonus nasus</i>	Broad Whitefish	X									
<i>Cottus</i> sp 2	Cultus Lake Sculpin				X						
<i>Gasterosteus</i> sp 1	Giant Black Stickleback				X						
<i>Gasterosteus</i> sp 16	Vananda Creek Limnetic Stickleback									X	
<i>Gasterosteus</i> sp 17	Vananda Creek Benthic Stickleback									X	
<i>Gasterosteus</i> sp 2	Enos Lake Limnetic Stickleback									X	
<i>Gasterosteus</i> sp 3	Enos Lake Benthic Stickleback									X	
<i>Gasterosteus</i> sp 4	Paxton Lake Limnetic Stickleback									X	

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Threatened Or Endangered (Red-Listed) Vertebrate Taxa

Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
Gasterosteus sp 5	Paxton Lake Benthic Stickleback									X	
Lampetra macrostoma	Lake Lamprey									X	
Lampetra richardsoni pop 1	Western Brook Lamprey, Var. Marifuga									X	
Notropis atherinoides	Emerald Shiner		X								
Notropis hudsonius	Spottail Shiner		X								
Pungitius pungitius	Ninespine Stickleback		X								
Rhinichthys osculus	Speckled Dace							X	X		
Rhinichthys sp 4	Nooksack River Dace									X	
Rhinichthys umatilla	Umatilla Dace							X	X		
Spirinchus sp 1	Pygmy Longfin Smelt				X						
Thymallus arcticus pop 1	Arctic Grayling, Williston Watershed Population	X						X			
Total Red-listed Freshwater Fish		3	5	0	5	2	4	4	3	12	0
Dragonflies											
Argia vivida	Vivid Dancer				X			X	X		
Calopteryx aequabilis	River Jewelwing								X		
Enallagma civile	Familiar Bluet					X					
Ischnura damula	Plains Forktail	X									
Octogomphus specularis	Grappletail				X					X	
Somatochlora brevicincta	Quebec Emerald							X			
Somatochlora forcipata	Forcipate Emerald							X			
Somatochlora kennedyi	Kennedy's Emerald		X								
Stylurus olivaceus	Olive Clubtail								X		
Stylurus olivaceus	Olive Clubtail								X		
Total Red-list Dragonflies		1	1	0	2	1	0	3	4	1	0
Butterflies											
Apodemia mormo	Mormon Metalmark								X		
Erynnis afranius	Afranius Duskywing				X						

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Threatened Or Endangered (Red-Listed) Vertebrate Taxa

Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Euchloe ausonides</i> ssp 1	Large Marble, Undescribed Island Ssp.									X	
<i>Euphydryas editha taylori</i>	Edith's Checkerspot, Taylori Subspecies									X	
<i>Euphydryas gillettii</i>	Gillette's Checkerspot							X			
<i>Euphyes vestris</i>	Dun Skipper									X	
<i>Incisalia niphon</i>	Eastern Pine Elfin		X								
<i>Limenitis archippus</i>	Viceroy							extirpated	extirpated		
<i>Loranthomitoura johnsoni</i>	Johnson's Hairstreak									X	
<i>Lycaena dione</i>	Dione Copper							X			
<i>Papilio indra</i>	Indra Swallowtail								X		
<i>Plebeius saepiolus insulanus</i>	Greenish Blue, Insulanus Subspecies									X	
<i>Polites sonora</i>	Sonora Skipper								X		
<i>Satyrium behrii</i>	Behr's Hairstreak								X		
<i>Satyrium fuliginosum</i>	Sooty Hairstreak								X		
<i>Speyeria mormonia erinna</i>	Mormon Fritillary, Erinna Subspecies								X		
Total Red-listed Butterflies		0	1	0	1	0	0	2	6	5	0
<i>Ambystomatigrinum</i>	Tiger Salamander								X		
<i>Dicamptodon tenebrosus</i>	Pacific Giant Salamander				X					X	
<i>Ascaphus montanus</i>	Rocky Mountain Tailed Frog							X			
<i>Rana pipiens</i>	Northern Leopard Frog							X			
<i>Rana pretiosa</i>	Oregon Spotted Frog									X	
Total Red-listed Amphibians		0	0	0	1	0	0	2	1	2	0
<i>Calidris bairdii</i>	Baird's Sandpiper	X									
<i>Branta canadensis occidentalis</i>	Canada Goose, Occidentalis										

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Threatened Or Endangered (Red-Listed) Vertebrate Taxa

Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
Melanerpes lewis georgia depression population	Lewis's Woodpecker Georgia Depression Population									X	
Puffinus creatopus	Pink-Footed Shearwater				X						X
Grus canadensis, georgia depression population	Sandhill Crane Georgia Depression Population									X	
Phoebastria alabtras	Short-Tailed Albatross				X						X
Recurvirostra americana	American Avocet							X	X	X	
Phalacrocorax auritus	Double-Crested Cormorant									X	
Sialia mexicana	Western Bluebird Georgia Depression Population									X	
Sturnella neglecta georgia depression population	Western Meadowlark Georgia Depression Population									X	
Aechmophorus occidentalis	Western Grebe							X	X	X	
Pelecanus erythrorhynchos	American White Pelican					X					
Phalacrocorax penicillatus	Brandt's Cormorant				X					X	
Phalacrocorax pelagicus pelagicus	Pelagic Cormorant, Pelagicus Subspecies				X					X	
Accipiter gentilis laingi	Northern Goshawk, Laingi Subspecies				X					X	
Buteo swainsoni	Swainson's Hawk					X			X		
Buteo regalis	Ferruginous Hawk								X		
Falco peregrinus anatum	American Peregrine Falcon				X	X			X	X	
Falco mexicanus	Prairie Falcon					X		X	X		
Centrocercus urophasianus	Sage Grouse								X		
Bartramia longicauda	Upland Sandpiper			X		X					
Limosa haemastica	Hudsonian Godwit	X									
Sterna forsteri	Forster's Tern							X			
Uria aalge	Common Murre				X						
Uria lomvia	Thick-Billed Murre				X						

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Threatened Or Endangered (Red-Listed) Vertebrate Taxa

Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Brachyramphus marmoratus</i>	Marbled Murrelet				X					X	
<i>Fratercula corniculata</i>	Horned Puffin				X						
<i>Coccyzus americanus</i>	Yellow-Billed Cuckoo									X	
<i>Otus kennicottii macfarlanei</i>	Western Screech-Owl, Macfarlanei Subspecies							X	X		
<i>Athene cucularia</i>	Burrowing Owl										
<i>Strix occidentalis</i>	Spotted Owl				X					X	
<i>Sphyrapicus thyroideus nataliae</i>	Williamson's Sapsucker, Nataliae Subspecies							X			
<i>Picoides albolarvatus</i>	White-Headed Woodpecker								X		
<i>Eremophila alpestris strigata</i>	Horned Lark, Strigata Subspecies									X	
<i>Progne subis</i>	Purple Martin									X	
<i>Oreoscoptes montanus</i>	Sage Thrasher							X			
<i>Dendroica tigrina</i>	Cape May Warbler		X	X							
<i>Dendroica castanea</i>	Bay-Breasted Warbler		X	X							
<i>Oporornis agilis</i>	Connecticut Warbler		X	X							
<i>Icteria virens</i>	Yellow-Breasted Chat								X		
<i>Spizella breweri breweri</i>	Brewer's Sparrow, Breweri Subspecies								X		
<i>Poocetes gramineus affinis</i>	Vesper Sparrow, Affinis Subspecies									X	
<i>Chondestes grammacus</i>	Lark Sparrow								X		
<i>Ammodramus savannarum</i>	Grasshopper Sparrow								X		
<i>Ammodramus nelsoni</i>	Nelson's Sharp-Tailed Sparrow			X							
Total Red-listed Birds		2	3	5	11	5	0	6	14	17	2
Mammals											
<i>Sorex merriami</i>	Merriam's Shrew								X		
<i>Sorex preblei</i>	Preble's Shrew								X		
<i>Eubalaena glacialis</i>	Northern Right Whale				X						X

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Threatened Or Endangered (Red-Listed) Vertebrate Taxa

Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Eumetopias jubatus</i>	Northern Sea Lion				X					X	X
<i>Orcinus orca</i> , resident ecotype	Orca Resident				X					X	X
<i>Orcinus orca</i> , transient ecotype	Orca Transient				X					X	X
<i>Rangifer tarandus</i> pop 1	Woodland Caribou, Southern Population							X			
<i>Sorex palustris brooksi</i>	Vancouver Island Water Shrew				X					X	
<i>Sorex bendirii</i>	Pacific Water Shrew				X					X	
<i>Sorex tundrensis</i>	Tundra Shrew	X			X						
<i>Scapanus townsendii</i>	Townsend's Mole									X	
<i>Myotis keenii</i>	Keen's Long-Eared Myotis				X					X	
<i>Lasiurus blossevillii</i>	Western Red Bat				X				X		
<i>Antrozous pallidus</i>	Pallid Bat								X		
<i>Ochotona princeps septentrionalis</i>	Common Pika, Septentrionalis Ssp.					X					
<i>Lepus americanus washingtonii</i>	Snowshoe Hare, Washingtonii Subspecies				X					X	
<i>Lepus townsendii</i>	White-Tailed Jackrabbit								X		
<i>Aplodontia rufa rufa</i>	Mountain Beaver, Rufa Subspecies									X	
<i>Tamias minimus selkirki</i>	Least Chipmunk, Selkirki Subspecies							X			
<i>Tamias ruficaudus ruficaudus</i>	Red-Tailed Chipmunk, Ruficaudus Subspecies							X			
<i>Marmota vancouverensis</i>	Vancouver Island Marmot				X					X	
<i>Thomomys talpoides segregatus</i>	Northern Pocket Gopher, Segregatus Subspecies							X			
<i>Clethrionomys gapperi occidentalis</i>	Southern Red-Backed Vole, Occidentalis Subspecies									X	
<i>Microtus townsendii cowani</i>	Townsend's Vole, Cowani Subspecies				X						
<i>Eumetopias jubatus</i>	Northern Sea Lion				X						

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Threatened Or Endangered (Red-Listed) Vertebrate Taxa

Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Mustela erminea haidarum</i>	Ermine, Haidarum Subspecies				X						
<i>Mustela frenata altifrontalis</i>	Long-Tailed Weasel, Altifrontalis Subspecies									X	
<i>Gulo gulo vancouverensis</i>	Wolverine, Vancouverensis Subspecies				X						
<i>Taxidea taxus</i>	Badger					X		X	X		
<i>Enhydra lutris</i>	Sea Otter				X						
<i>Bison bison athabasca</i>	Wood Bison	X	X	X							
Total Red-listed Mammals		2	1	1	13	2	0	5	6	9	1
Reptiles											
<i>Dermochelys coriacea</i>	Leatherback				X						X
<i>Clemmys marmorata</i>	Western Pond Turtle									X	
<i>Phrynosoma douglasii</i>	Pigmy Short-Horned Lizard								X		
<i>Contia tenuis</i>	Sharptail Snake									X	
<i>Hypsiglena torquata</i>	Night Snake								X		
<i>Pituophis catenifer catenifer</i>	Gopher Snake, Catenifer Subspecies									X	
Total Red-listed Reptiles		0	0	0	1	0	0	0	2	3	1
Red-list Ecoprovince Totals		8	11	7	33	10	3	22	35	47	3

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Vulnerable (Blue-Listed) Vertebrate Taxa											
Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
Freshwater Fish											
Acrocheilus alutaceus	Chiselmouth					X		X	X		
Catostomus platyrhynchus	Mountain Sucker								X	X	
Coregonus sardinella	Least Cisco	X									
Cottus bairdi hubbsi	Mottled Sculpin, Hubbsi Subspecies							X			
Cottus bairdi punctulatus	Mottled Sculpin, Punctulatus Subspecies							X	X		
Cottus confusus	Shorthead Sculpin							X	X		
Hiodon alosoides	Goldeye		X								
Hybognathus hankinsoni	Brassy Minnow					X	X			X	
Margariscus margarita	Pearl Dace			X							
Oncorhynchus clarki clarki	Cutthroat Trout, Clarki Subspecies				X	X	X			X	
Oncorhynchus clarki lewisi	Cutthroat Trout, Lewisi Subspecies			X				X			
Salvelinus confluentus	Bull Trout	X		X	X	X	X	X	X	X	
Salvelinus malma	Dolly Varden	X			X	X	X			X	
Stenodus leucichthys	Inconnu	X	X								
Thaleichthys pacificus	Eulachon				X						
TOTAL BLUE-LISTED Freshwater Fish		4	2	3	4	5	4	6	5	5	0
Dragonflies											
Aeshna constricta	Lance-Tailed Darner							X	X		
Aeshna septentrionalis	Azure Darner	X				X	X				
Aeshna tuberculifera	Black-Tipped Darner				X					X	
Argia emma	Nez Perce Dancer				X					X	
Enallagma hageni	Hagen's Bluet		X	X		X		X	X		
Epiheca canis	Beaverpond Baskettail									X	
Erythemis collocata	Western Pondhawk				X				X	X	
Gomphus graslinellus	Pronghorn Clubtail							X	X		
Leucorrhinia patricia	Canada Whiteface						X				
Libellula pulchella	Twelve-Spotted Skimmer							X	X		

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Vulnerable (Blue-Listed) Vertebrate Taxa											
Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Macromia magnifica</i>	Western River Cruiser								X		
<i>Macromia magnifica</i>	Western River Cruiser								X		
<i>Ophiogomphus colubrinus</i>	Boreal Snaketail		X			X	X				
<i>Pachydiplax longipennis</i>	Blue Dasher									X	
<i>Somatochlora cingulata</i>	Lake Emerald							X	X		
<i>Somatochlora septentrionalis</i>	Muskeg Emerald	X				X	X				
<i>Sympetrum vicinum</i>	Yellow-Legged Meadowhawk				X					X	
<i>Tanypteryx hageni</i>	Black Petaltail				X						
Total blue-listed dragonflies		2	2	1	5	4	4	5	8	6	0
Butterflies											
<i>Agriades glandon lacustris</i>	Arctic Blue, Lacustris Subspecies			X							
<i>Callophrys affinis</i>	Immaculate Green Hairstreak								X		
<i>Cercyonis pegala incana</i>	Common Woodnymph, Incana Subspecies				X					X	
<i>Cercyonis pegala ino</i>	Common Woodnymph, Ino Subspecies			X							
<i>Charidryas hoffmanni</i>	Hoffman's Checkerspot								X		
<i>Clossiana alberta</i>	Albert's Fritillary							X			
<i>Clossiana astarte distincta</i>	Astarte Fritillary, Distincta Subspecies	X									
<i>Clossiana natazhati</i>	Beringian Fritillary	X									
<i>Coenonympha californi benjamini</i>	Common Ringlet, Benjamini Subspecies			X				X			
<i>Coenonympha californi insulana</i>	Common Ringlet, Insulana Subspecies									X	

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Vulnerable (Blue-Listed) Vertebrate Taxa											
Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Colias gigantea gigantea</i>	Giant Sulphur, Gigantea Subspecies	X									
<i>Colias hecla</i>	Hecla Sulphur	X									
<i>Colias meadii</i>	Mead's Sulphur						X	X			
<i>Colias occidentalis</i>	Western Sulphur				X				X	X	
<i>Danaus plexippus</i>	Monarch								X		
<i>Erebia mackinleyensis</i>	Beringian Alpine	X									
<i>Erebia magdalena</i>	Magdalena Alpine							X			
<i>Erebia pawlowskii</i>	Mountain Alpine	X									
<i>Erynnis propertius</i>	Propertius Duskywing				X					X	
<i>Euchloe naina</i>	Green Marble	X									
<i>Everes comyntas</i>	Eastern Tailed Blue							X	X		
<i>Hesperia comma assiniboia</i>	Common Branded Skipper, Assiniboia Subspecies			X							
<i>Hesperia comma oregonia</i>	Common Branded Skipper, Oregonia Subspecies									X	
<i>Icaricia icarioides blackmorei</i>	Boisduval's Blue, Blackmorei Subspecies									X	
<i>Incisalia mossii mossii</i>	Moss' Elfin, Mossii Subspecies									X	
<i>Lycaena hyllus</i>	Bronze Copper		X								
<i>Lycaena nivalis</i>	Lilac-Bordered Copper								X		
<i>Oeneis alberta</i>	Alberta Arctic			X							
<i>Oeneis bore edwardsi</i>	White-Veined Arctic, Edwardsi Subspecies						X	X			
<i>Oeneis jutta alaskensis</i>	Jutta Arctic, Alaskensis Subspecies	X									
<i>Oeneis nevadensis</i>	Great Arctic				X					X	
<i>Oeneis polixenes yukonensis</i>	Polixenes Arctic, Yukonensis Subspecies	X									
<i>Oeneis rosovi</i>	Rosov's Arctic										
<i>Oeneis uhleri</i>	Uhler's Arctic			X							
<i>Papilio bairdii pikei</i>	Baird's Swallowtail, Pikei Subspecies			X							

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Vulnerable (Blue-Listed) Vertebrate Taxa											
Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Parnassius clodius altaurus</i>	Clodius Appolo, Altaurus Subspecies							X	X		
<i>Parnassius phoebus</i>	Phoebus Appolo	X									
<i>Phyciodes batesii</i>	Tawny Crescent		X	X							
<i>Pieris angelika</i>	Arctic White	X									
<i>Pieris marginalis guppyi</i>	Margined White, Guppyi Subspecies	X				X					
<i>Polites draco</i>	Draco Skipper	X									
<i>Polites sabuleti</i>	Sandhill Skipper								X		
<i>Pyrgus communis</i>	Checkered Skipper		X	X				X	X		
<i>Satyrium californicum</i>	California Hairstreak								X		
<i>Satyrium liparops</i>	Striped Hairstreak			X							
<i>Satyrium titus titus</i>	Coral Hairstreak, Titus Subspecies			X							
<i>Speyeria aphrodite manitoba</i>	Aphrodite Fritillary, Manitoba Subspecies			X			X	?			
<i>Speyeria cybele pseudocarpenteri</i>	Great Spangled Fritillary, Pseudocarpenteri Subspecies			X							
<i>Speyeria zerene bremnerii</i>	Zerene Fritillary, Bremnerii Subspecies				X					X	
<i>Vacciniina optilete</i>	Cranberry Blue	X	X								
TOTAL BLUE-LISTED Butterflies		14	4	13	5	1	3	9	10	9	0
Amphibians											
<i>Ascaphus truei</i>	Coastal Tailed Frog	X			X	X	X		X		
<i>Spea intermontana</i>	Great Basin Spadefoot					X			X		
<i>Rana aurora</i>	Red Legged Frog				X					X	
<i>Plethodon idahoensis</i>	Couer D'alene Salamander							X			
Total Blue-listed Amphibians		1	0	0	2	2	1	1	2	0	
Birds											
<i>Columba fasciata</i>	Band-Tailed Pigeon				X		nonbreeding	nonbreeding	nonbreeding	X	
<i>Puffinus bulleri</i>	Buller's Shearwater				X						X

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Vulnerable (Blue-Listed) Vertebrate Taxa											
Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Branta canadensis leucopareia</i>	Canada Goose										
<i>Puffinus carneipes</i>	Felsh-Footed Shearwater				X						X
<i>Phoebastria immutabilis</i>	Laysan Albatross				X						X
<i>Ammodramus lecontei</i>	Le Conte's Sparrow		X	X			nonbreeding	nonbreeding			
<i>Falco peregrinus tundrus</i>	Peregrine Falcon Tundrus										
<i>Botaurus lentiginosus</i>	American Bittern					X	X	X	X	X	
<i>Ardea herodias</i>	Great Blue Heron				X	X		X	X	X	
<i>Butorides virescens</i>	Green Heron				X						
<i>Cygnus buccinator</i>	Trumpeter Swan	X	X	X	X		X				
<i>Clangula hyemalis</i>	Oldsquaw	X									
<i>Melanitta perspicillata</i>	Surf Scoter		X	X							
<i>Buteo platypterus</i>	Broad-Winged Hawk			X							
<i>Falco peregrinus pealei</i>	Peregrine Falcon, Pealei Subspecies				X						
<i>Falco rusticolus</i>	Gyrfalcon	X									
<i>Lagopus leucurus saxatilis</i>	White-Tailed Ptarmigan, Saxatilis Subspecies				X					X	
<i>Tympanuchus phasianellus columbianus</i>	Sharp-Tailed Grouse, Columbianus Subspecies					X	X	X	X		
<i>Grus canadensis</i>	Sandhill Crane		X		X	X	X	X	X	X	
<i>Pluvialis dominica</i>	American Golden-Plover	X									
<i>Heteroscelus incanus</i>	Wandering Tattler	X									
<i>Numenius americanus</i>	Long-Billed Curlew					X		X	X		
<i>Limnodromus griseus</i>	Short-Billed Dowitcher	X			X						
<i>Phalaropus lobatus</i>	Red-Necked Phalarope	X									
<i>Larus californicus</i>	California Gull					X			X		
<i>Sterna caspia</i>	Caspian Tern					X			X	X	
<i>Synthliboramphus antiquus</i>	Ancient Murrelet				X						
<i>Ptychoramphus aleuticus</i>	Cassin's Auklet				X						
<i>Fratercula cirrhata</i>	Tufted Puffin				X						
<i>Tyto alba</i>	Barn Owl								X	X	
<i>Otus flammeolus</i>	Flammulated Owl					X		X	X		
<i>Glaucidium gnoma swarthi</i>	Vancouver Island Pygmy- Owl				X					X	

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Vulnerable (Blue-Listed) Vertebrate Taxa											
Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
Asio flammeus	Short-Eared Owl			X		X	X	X	X	X	
Aegolius acadicus brooksi	Northern Saw-Whet Owl, Brooksi Subspecies				X						
Aeronautes saxatalis	White-Throated Swift					X		X	X		
Melanerpes lewis	Lewis' Woodpecker					X		X	X		
Sphyrapicus thyroideus thyroideus	Williamson's Sapsucker, Thyroideus Subspecies								X		
Picoides villosus picoideus	Hairy Woodpecker, Picoideus Subspecies				X						
Empidonax wrightii	Gray Flycatcher								X		
Cyanocitta stelleri carlottae	Queen Charlotte Steller's Jay				X						
Catherpes mexicanus	Canyon Wren							X	X		
Dendroica virens	Black-Throated Green Warbler		X	X							
Vireo philadelphicus	Philadelphia Vireo		X	X							
Wilsonia canadensis	Canada Warbler		X	X							
Calcarius pictus	Smith's Longspur	X									
Dolichonyx oryzivorus	Bobolink					X	X	X	X		
Pinicola enucleator carlottae	Pine Grosbeak, Carlottae Subspecies				X						
Total Blue-listed Birds		8	7	8	19	12	6	11	16	9	3
Mammals											
Mesoplodon carlhubbsi	Arch-Beaked Whale				X						X
Mesoplodon stejnegeri	Bering Sea Beaked Whale				X						X
Balaenoptera musculus	Blue Whale				X						X

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Vulnerable (Blue-Listed) Vertebrate Taxa											
Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Rangifer tarandus boreal</i>	Caribou - Boreal Population		X	X							
<i>Rangifer tarandus northern mountains</i>	Caribou - Northern Mountains Population	X	X			X	X				
<i>Balaenoptera physalus</i>	Fin Whale				X						X
<i>Megaptera novaeangliae</i>	Humpback Whale				X					X	X
<i>Callorhinus ursinus</i>	Northern Fur Seal				X						X
<i>Balaenoptera borealis</i>	Sei Whale				X						X
<i>Physeter macrocephalus</i>	Sperm Whale				X						X
<i>Eschrichtius robustus</i>	Gray Whale				X					X	X
<i>Tamias minimus oreocetes</i>	Least Chipmunk, Oreocetes Subspecies							X			
<i>Tamias ruficaudus simulans</i>	Red-Tailed Chipmunk, Simulans Subspecies							X			
<i>Sorex trowbridgii</i>	Trowbridge's Shrew				X					X	
<i>Myotis thysanodes</i>	Fringed Myotis					X			X		
<i>Myotis ciliolabrum</i>	Western Small-Footed Myotis				X	X			X		
<i>Myotis septentrionalis</i>	Northern Long-Eared Myotis	X		X		X		X			
<i>Euderma maculatum</i>	Spotted Bat					X			X		
<i>Corynorhinus townsendii</i>	Townsend's Big-Eared Bat				X	X		X	X	X	
<i>Sylvilagus nuttallii</i>	Nuttall's Cottontail								X		
<i>Aplodontia rufa rainieri</i>	Mountain Beaver, Rainieri Subspecies				X				X		
<i>Spermophilus saturatus</i>	Cascade Golden-Mantled Ground Squirrel				X				X		
<i>Perognathus parvus</i>	Great Basin Pocket Mouse								X		
<i>Reithrodontomys megalotis</i>	Western Harvest Mouse								X		
<i>Clethrionomys gapperi galei</i>	Southern Red-Backed Vole, Galei Subspecies							X			

Species at Risk: Appendix B
Environmental Trends in British Columbia: 2002

Ecoprovince Distribution Of Vulnerable (Blue-Listed) Vertebrate Taxa											
Scientific Name	Common Name	NBM (Northern Boreal Mts)	TAP (Taiga Plains)	BOP (Boreal Plains)	COM (Coast & Mts)	CEI (Central Interior)	SBI (Sub-boreal Interior)	SIM (South ern Interior Mts)	SOI (Southern Interior)	GED (Georgia Depression)	NOP (Northeast Pacific)
<i>Synaptomys borealis artemisiae</i>	Northern Bog Lemming, Artemisiae Subspecies								X		
<i>Zapus hudsonius alascensis</i>	Meadow Jumping Mouse, Alascensis Subspecies	X			X						
<i>Ursus americanus emmonsii</i>	Glacier Bear				X						
<i>Ursus arctos</i>	Grizzly Bear	X	X	X	X	X	X	X	X		
<i>Martes pennanti</i>	Fisher	X	X	X	X	X	X	X	X	X	
<i>Mustela erminea anguinae</i>	Vancouver Island Ermine				X					X	
<i>Gulo gulo luscus</i>	Wolverine, Luscus Subspecies	X	X	X	X	X	X	X	X		
<i>Cervus elaphus roosevelti</i>	Roosevelt Elk				X					X	
<i>Bison bison bison</i>	Plains Bison	X	X								
<i>Ovis canadensis californiana</i>	California Bighorn Sheep					X			X		
<i>Ovis canadensis canadensis</i>	Rocky Mountain Bighorn Sheep							X			
<i>Ovis dalli dalli</i>	Dall's Sheep	X									
Total Blue-listed Mammals		8	6	5	21	10	4	9	14	7	9
Reptiles											
<i>Chrysemys picta</i>	Painted Turtle				X			X	X	X	
<i>Coluber constrictor</i>	Racer								X		
<i>Pituophis catenifer deserticola</i>	Gopher Snake, Deserticola Subspecies								X		
<i>Crotalus viridis</i>	Western Rattlesnake								X		
Total Blue-listed Reptiles		0	0	0	1	0	0	1	4	1	0
Blue-List Ecoprovince Totals		37	21	27	57	35	22	42	59	37	13

Species at Risk: Appendix C.
Environmental Trends in British Columbia: 2002

Appendix C - Type and Number of Threats to Red-Listed Taxa in British Columbia

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Amphibians														
Northern Leopard Frog	yw		X				yw		X	y		y		6
Oregon Spotted Frog	Xw						Xw		X	y		y		5
Pacific Giant Salamander					X									1
Rocky Mountain Tailed Frog					X									1
Tiger Salamander	yw		X				yw		X			X		5
Total Amphibians	3		2		2		3		3	2		3		
Birds														
American Avocet			X				Xw							2
American White Pelican					X						X			2
Bay-breasted Warbler				X	X					y				3
Brandt's Cormorant										X	X	y		3
Brewer's Sparrow, breweri subspecies	y		X				y							3
Burrowing Owl	X	y	X				X				X	y		6
Cape May Warbler				X	X									2
Common Murre									X	X	X	X		4
Connecticut Warbler					X					y				2
Double-crested Cormorant										X	X	y	y	4
Ferruginous Hawk	X	y							y	y	X	y		6
Forster's Tern				yw							y			2

Species at Risk: Appendix C.
Environmental Trends in British Columbia: 2002

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Grasshopper Sparrow	X	X	X				X							4
Greater Sage-Grouse	X		X				X					X		4
Horned Lark, strigata subspecies	X	X					X		X	y				5
Horned Puffin									X	X	X	y		4
Hudsonian Godwit														0
Lark Sparrow	X		X				X		X	y				5
Lewis's Woodpecker, Georgia Depression Population	X	X					X		X					4
Marbled Murrelet					X					X		X		3
Nelson's Sharp-tailed Sparrow														0
Northern Goshawk, laingi subspecies					X					y	X	y		4
Pelagic Cormorant, pelagicus subspecies										X	X	y	y	4
Peregrine Falcon, anatum subspecies	X						X			X	X	y		5
Pink-footed Shearwater														0
Prairie Falcon	X	X	X							X	y	y		6
Purple Martin									X		X			2
Sage Thrasher	X	X	X				X							4
Sandhill Crane, Georgia Depression Population	Xw						Xw							2
Short-tailed Albatross												X		1
Spotted Owl					X									1
Swainson's Hawk	X	y					X			X		X		5
Thick-billed Murre									X	X	y	y		4
Upland Sandpiper	X	y	X				X							4
Vesper Sparrow, affinis subspecies	X	X					X		X		X			5

Species at Risk: Appendix C.
Environmental Trends in British Columbia: 2002

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Western Bluebird, Georgia Depression population	X	X					X		X					4
Western Grebe							yw			X	X			3
Western Meadowlark, Georgia Depression population		X					X		X					3
Western Screech-Owl, macfarlanei subspecies	X				y		X		X					4
White-headed Woodpecker		X			X		X			y				4
Williamson's Sapsucker, nataliae subspecies		X			X									2
Yellow-billed Cuckoo	X						X							2
Yellow-breasted Chat	X						X			y				3
Total Birds	20	14	9	3	10	0	21	0	12	19	16	15	2	
Freshwater Fish														
Arctic Cisco				X	X	X		X						4
Arctic Grayling, Williston Watershed population				X	X			X	X			X		5
Broad Whitefish														0
Burbot, Lower Columbia								X						1
Burbot, Lower Kootenay								X						1
Cisco						X			y					2
Cultus Lake Sculpin	y				X	X	X		y	Y				6
Emerald Shiner				X	X			X						3
Enos Lake Benthic Stickleback					y		X	X	X					4
Enos Lake Limnetic Stickleback					y		X	X	X					4
Giant Black Stickleback						X			X					2
Green Sturgeon	X						X	X		X		X		5

**Species at Risk: Appendix C.
Environmental Trends in British Columbia: 2002**

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Lake Lamprey					y					y		y		3
Ninespine Stickleback					y	y			X					3
Nooksack River Dace	X		X		y		X		X	X				6
Paxton Lake Benthic Stickleback				X	X		y	X	X	X				6
Paxton Lake Limnetic Stickleback				X	X		y	X	X	X				6
Pygmy Longfin Smelt					X				y	y				3
Salish Sucker	X		X		y		X		X	X				6
Speckled Dace					X			X	X	X				4
Spottail Shiner						X			y					2
Umatilla Dace								X		X				2
Vananda Creek Benthic Stickleback				X	X		X	X	X	X				6
Vananda Creek Limnetic Stickleback				X	X		X	X	X	X				6
Western Brook Lamprey, var. Marifuga							X			X		y		2
White Sturgeon (Columbia River population)								X		y		X		3
White Sturgeon (Upper Fraser River population)	y						y	X		y		X		
White Sturgeon (Kootenay River population)								X		y		X		3
White Sturgeon (Nechako River population)								X		y		X		3
Total Freshwater Fish	5	0	2	7	16	6	12	18	16	17	0	8	0	
Butterflies														
Afranius Duskywing														0
Behr's Hairstreak	X		X				X			X				4
Dione Copper							X	X						2

**Species at Risk: Appendix C.
Environmental Trends in British Columbia: 2002**

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Dun Skipper	X						X			X				3
Eastern Pine Elfin					X									1
Edith's Checkerspot, taylori subspecies							X		X	X				3
Gillette's Checkerspot			X		X									2
Greenish Blue, insulanus subspecies							X		X	X				3
Indra Swallowtail														
Johnson's Hairstreak					X					X				2
Large Marble, undescr. island subspecies									X					1
Mormon Fritillary, erinna subspecies														0
Mormon Metalmark	X		X				X			X				4
Sonora Skipper			X							X				2
Sooty Hairstreak			X											1
Viceroy										X				1
Total Butterflies	3	0	5	0	3	0	6	1	3	8	0	0	0	
Mammals														
Badger	X	X	X				X				X	X		6
Caribou, Southern population		X		X	X						X	X		5
Common Pika, septentrionalis subspecies														
Common Water Shrew, Brooksii Subspecies	X				X		X							3
Ermine, haidarum subspecies					X							y		2
Keen's Long-eared Myotis	y			X	X		y				X			5
Least Chipmunk, selkirki subspecies				y		y								2

**Species at Risk: Appendix C.
Environmental Trends in British Columbia: 2002**

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Long-Tailed Weasel, altifrontalis subspecies	X		y		y		X					X		5
Merriam's Shrew														
Mountain Beaver, rufa subspecies	X				X		X							3
Northern Pocket Gopher, segregatus subspecies							y				y	X		3
Northern Right Whale												X		1
Killer Whale (Northeast Pacific Resident population)										X	X	X		3
Killer Whale (West Coast Transient population)										X	X	y		3
Northern Sea Lion										X	X	X	y	4
Pacific Water Shrew	X				X		X		X	X				5
Pallid Bat	X		X				X				X			4
Preble's Shrew														0
Red-tailed Chipmunk, ruficaudus subspecies					y									1
Sea Otter										X	X	X		3
Snowshoe Hare, washingtonii subspecies	X						X		X					3
Southern Red-backed Vole, occidentalis subspecies	X						X							2
Townsend's Mole	X						X				X	X		4
Townsend's Vole, cowani subspecies									X					1
Tundra Shrew														0
Vancouver Island Marmot					X						y	y	y	4
Western Red Bat	X				X		X			y				3
White-tailed Jackrabbit	X		X				X					X		4
Wolverine, vancouverensis subspecies					X						y			2
Wood Bison	X											X	y	3

Species at Risk: Appendix C.
Environmental Trends in British Columbia: 2002

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Total Mammals	13	2	4	3	11	1	13	0	3	6	12	14	3	
Dragonflies														
Familiar Bluet														0
Forcinate Emerald					X									1
Grappletail					X									1
Kennedy's Emerald														0
Olive Clubtail	X					X	X	X	X	X				5
Plains Forktail						X								1
Quebec Emerald					X			X						2
River Jewelwing						X	X		X					3
Vivid Dancer			X			X		X		X				4
Total Dragonflies	1	0	1	0	3	4	2	3	2	2	0	0	0	
Reptiles														
Leatherback Turtle										X		X		2
Gopher Snake, catenifer subspecies	X						X		y			y		4
Night Snake	X		X	y			X					y		5
Pigmy Short-horned Lizard	X		y				X							3
Sharptail Snake	y			y			X		y					4
Western Pond Turtle	Xw						Xw		X					3
Total Reptiles	4	0	2	2	0	0	5	0	3	1	0	3	0	

Key: X major threat; y minor threat; X_w/y_w threat associated with wetlands

Species at Risk: Appendix C.
Environmental Trends in British Columbia: 2002

Source: Ministry of Sustainable Resource Management, Conservation Data Centre, 2002.

**Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002**

Appendix D - Type and Number of Threats to Red-Listed Taxa in the Three Ecoprovinces with the Most Species at Risk: Georgia Depression, Southern Interior, and Southern Interior Mountains

Key: X major threat; Y minor threat; Xw and Yw, threat associated with the draining of wetlands

Threats to Threatened and Endangered Taxa in Georgia Depression

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Amphibians														
Oregon Spotted Frog	Xw						Xw		X	y		y		5
Pacific Giant Salamander					X									1
Total Amphibians	1	0	0	0	1	0	1	0	1	1	0	1	0	
Birds														
American Avocet			X				Xw							2
Bay-breasted Warbler				X	X					y				3
Brandt's Cormorant										X	X	y		3
Double-crested Cormorant										X	X	y	y	4
Horned Lark, strigata subspecies	X	X					X		X	y				5
Lewis's Woodpecker, Georgia Depression Population	X	X					X		X					4
Marbled Murrelet					X					X		X		3
Northern Goshawk, laingi subspecies					X					y	X	y		4
Pelagic Cormorant, pelagicus subspecies										X	X	y	y	4

**Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002**

Threats to Threatened and Endangered Taxa in Georgia Depression

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Peregrine Falcon, anatum subspecies	X						X			X	X	y		5
Purple Martin									X		X			2
Sandhill Crane, Georgia Depression Population	Xw						Xw							2
Spotted Owl					X									1
Vesper Sparrow, affinis subspecies	X	X					X		X		X			5
Western Bluebird, Georgia Depression population	X	X					X		X					4
Western Grebe							yw			X	X			3
Western Meadowlark, Georgia Depression population		X					X		X					3
Yellow-billed Cuckoo	X						X							2
Total Birds	7	5	1	1	4		10		6	9	8	6	2	
Freshwater Fish														
Enos Lake Benthic Stickleback					y		X	X	X					4
Enos Lake Limnetic Stickleback					y		X	X	X					4
Green Sturgeon	X						X	X		X		X		5
Lake Lamprey					y					y		y		3
Nooksack River Dace	X		X		y		X		X	X				6
Paxton Lake Benthic Stickleback				X	X		y	X	X	X				6
Paxton Lake Limnetic Stickleback				X	X		y	X	X	X				6
Salish Sucker	X		X		y		X		X	X				6

Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002

Threats to Threatened and Endangered Taxa in Georgia Depression

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Vananda Creek Benthic Stickleback				X	X		X	X	X	X				6
Vananda Creek Limnetic Stickleback				X	X		X	X	X	X				6
Western Brook Lamprey, var. Marifuga							X			X		y		2
Total Freshwater Fish	3		2	4	9		10	7	8	9		3		
Butterflies														
Dun Skipper	X						X			X				3
Edith's Checkerspot, taylori subspecies							X		X	X				3
Greenish Blue, insulanus subspecies							X		X	X				3
Johnson's Hairstreak					X					X				2
Large Marble, undescr. island subspecies									X					1
Total Butterflies	1				1		3		3	4				
Mammals														
Common Water Shrew, Brooksii Subspecies	X				X		X							3
Keen's Long-eared Myotis	y			X	X		y				X			5
Long-Tailed Weasel, altifrontalis subspecies	X		y		y		X					X		5
Mountain Beaver, rufa subspecies	X				X		X							3
Killer Whale (Northeast Pacific Resident population)										X	X	X		3
Killer Whale (West Coast Transient population)										X	X	y		3

**Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002**

Threats to Threatened and Endangered Taxa in Georgia Depression

Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Northern Sea Lion										X	X	X	y	4
Pacific Water Shrew	X				X		X		X	X				5
Snowshoe Hare, washingtonii subspecies	X						X		X					3
Southern Red-backed Vole, occidentalis subspecies	X						X							2
Townsend's Mole	X						X				X	X		4
Vancouver Island Marmot					X						y	y	y	4
Total Mammals	8		1	1	6		8		2	4	6	6	2	
Dragonflies														
Grappletail					X									1
Total Dragonflies					1									
Reptiles														
Gopher Snake, catenifer subspecies	X						X		y			y		4
Sharptail Snake	y			y			X		y					4
Western Pond Turtle	Xw						Xw		X					3
Total Reptiles	3			1			3		3			1		

**Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002**

Key: X major threat; Y minor threat; Xw and Yw, threat associated with the draining of wetlands

Threats to Threatened and Endangered (Red-listed) Taxa in Southern Interior														
Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Amphibians														
Tiger Salamander	yw		X				yw		X			X		5
Total Amphibians	1		1				1		1			1		
Birds														
American Avocet			X				Xw							2
Brewer's Sparrow, breweri subspecies	y		X				y							3
Ferruginous Hawk	X	y							y	y	X	y		6
Grasshopper Sparrow	X	X	X				X							4
Greater Sage-Grouse	X		X				X					X		4
Lark Sparrow	X		X				X		X	y				5
Peregrine Falcon, anatum subspecies	X						X			X	X	y		5
Prairie Falcon	X	X	X							X	y	y		6
Sage Thrasher	X	X	X				X							4
Swainson's Hawk	X	y					X			X		X		5
Western Grebe							yw			X	X			3
Western Screech-Owl, macfarlanei subspecies	X				y		X		X					4
White-headed Woodpecker		X			X		X			y				4
Yellow-breasted Chat	X						X			y				3

**Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002**

Threats to Threatened and Endangered (Red-listed) Taxa in Southern Interior														
Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Total Birds	11	6	7		2		12		3	8	4	5		
Freshwater Fish														
Speckled Dace					X			X	X	X				4
Umatilla Dace								X		X				2
Total Freshwater Fish					1			2	1	2				
Butterflies														
Behr's Hairstreak	X		X				X			X				4
Indra Swallowtail														
Mormon Fritillary, erinna subspecies														0
Mormon Metalmark	X		X				X			X				4
Sonora Skipper			X							X				2
Sooty Hairstreak			X											1
Viceroy (extirpated)										X				1
Total Butterflies	2		4				2			4				
Mammals														
Badger	X	X	X				X				X	X		6
Merriam's Shrew														
Pallid Bat	X		X				X				X			4

Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002

Threats to Threatened and Endangered (Red-listed) Taxa in Southern Interior														
Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Preble's Shrew														0
Western Red Bat	X				X		X			y				3
White-tailed Jackrabbit	X		X				X					X		4
Total Mammals	4	1	3		1		4			1	2	2		
Dragonflies														
Olive Clubtail	X					X	X	X	X	X				5
River Jewelwing						X	X		X					3
Vivid Dancer			X			X		X		X				4
Total Dragonflies	1		1			3	2	2	2	2				
Reptiles														
Gopher Snake, catenifer subspecies	X						X		y			y		4
Pigmy Short-horned Lizard	X		y				X							3
Total Reptiles	2		1				2		1			1		

**Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002**

Key: X major threat; Y minor threat; Xw and Yw, threat associated with the draining of wetlands

Threats to Threatened and Endangered Taxa in Southern Interior Mountains														
Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Amphibians														
Northern Leopard Frog	yw		X				yw		X	y		y		6
Rocky Mountain Tailed Frog					X									1
Total Amphibians	1		1		1		1		1	1		1		
Birds														
American Avocet			X				Xw							2
Forster's Tern				yw							y			2
Prairie Falcon	X	X	X							X	y	y		6
Western Grebe							yw			X	X			3
Western Screech-Owl, macfarlanei subspecies	X				y		X		X					4
Williamson's Sapsucker, nataliae subspecies		X			X									2
Total Birds	2	2	2	1	2		3		1	2	3	1		
Freshwater Fish														
Speckled Dace					X			X	X	X				4
Umatilla Dace								X		X				2
White Sturgeon (Columbia River population)								X		y		X		3

**Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002**

Threats to Threatened and Endangered Taxa in Southern Interior Mountains														
Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
White Sturgeon (Kootenay River population)								X		y		X		3
Total Freshwater Fish	1				1		1	5	1	5		3		
Butterflies														
Gillette's Checkerspot			X		X									2
Johnson's Hairstreak					X					X				2
Viceroy (extirpated)										X				1
Total Lepidopterans	3		1		2					2				
Mammals														
Badger	X	X	X				X				X	X		6
Caribou, Southern population		X		X	X						X	X		5
Least Chipmunk, selkirki subspecies				y		y								2
Northern Pocket Gopher, segregatus subspecies							y				y	X		3
Red-tailed Chipmunk, ruficaudus subspecies					y									1
Total Mammals	1	2	1	2	2	1	2				3	3		
Dragonflies														
Forcipate Emerald					X									1

**Species at Risk: Appendix D.
Environmental Trends in British Columbia: 2002**

Threats to Threatened and Endangered Taxa in Southern Interior Mountains														
Common Name	Agricult'l Dev't & Mang.	Disruption of Fire Regimes	Livestock Grazing	Mining, Oil and Gas Expl. & Dev't	Timber Mang.	Tourism/Recreational Development	Urban Dev't	Water Dev't	Alien Species Introductions	Environ. Contam'n	Human Disturb.	Intentional & Accidental Mortality	Other	# of threats
Quebec Emerald					X			X						2
Vivid Dancer			X			X		X		X				4
Total Dragonflies			1		2	1		2		1				

Source: Ministry of Sustainable Resource Management, Conservation Data Centre, 2002.