

#### Executive Summary

The South Okanagan-Similkameen area of British Columbia is a unique habitat of international importance. It is home to 23 species of plants and animals currently listed as nationally Threatened, Endangered, or Vulnerable as well as one-third of all provincially Red-listed species. The South Okanagan-Similkameen watersheds also act as a corridor for species migrations between the dry grasslands of the interior of the province and the desert areas of the western United States. Since the last ice age, the Okanagan-Similkameen corridor has been the principal portal of entry for dryadapted plants and animals colonizing interior British Columbia.

However, the South Okanagan-Similkameen area is rapidly being urbanized. The resulting further reduction and fragmentation of natural habitats amounts to an emerging crisis in this environmentally pivotal area.

To meet this emerging environmental crisis, nineteen conservation organizations and government agencies have joined to form the South Okanagan-Similkameen (SOS) Conservation Program. The Program aims to maintain the rich biodiversity of the area, including species at risk, and a viable ecological corridor between the deserts to the south and the grasslands to the north. With this prospectus, the Program partners invite the participation of all organizations and individuals interested in the realization of these aims.

The Program will expand community involvement, promote ecologically sustainable land use, enhance stewardship on private and Crown land, and negotiate acquisition of key habitats. The Program will also seek strong community support and involvement to help find a balance between wildlife requirements and human needs and aspirations.

Four key habitats have been proposed for Program activities: wetland and riparian, grassland/shrub-steppe, coniferous forest, and rugged terrain. As progress indicators, area criteria have also been proposed for Crown land conservation, private land acquisition, and stewardship.

To help potential participants get involved, organization contacts are listed on back cover.

# SOUTH OKANAGAN-SIMILKAMEEN CONSERVATION PROGRAM: A PROSPECTUS

#### Introduction

This prospectus is an invitation to participate in a program to expand efforts to conserve *Canada's Desert Country*, the South Okanagan-Similkameen area of southern British Columbia. The low elevations of the Okanagan and Similkameen river valleys, whose dry climate and desert-like habitats are a northern extension of the western American deserts, exhibit one of Canada's greatest concentrations of species diversity.

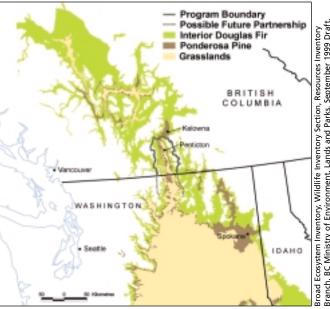
This national treasure of biodiversity is of international importance and is increasingly being threatened by human-created pressures. This area, with some of the greatest concentrations of species at risk in Canada, is recognized as one of the country's three most endangered natural systems.

The South Okanagan-Similkameen Conservation Program has been developed to focus conservation efforts to maintain this natural system and the great variety of plant and animal species that exist within it. The Conservation Program seeks strong community support and involvement to help find a balance between wildlife requirements and human needs and aspirations.



Rock bluffs & desert-like habitats N.E. of Osoyoos Lake

R. McKelvey



The Conservation Program area is valuable as both the northern extension of the western American deserts and as the link to the interior grasslands of British Columbia.



## Canada's Desert Country

Geology, geography, and climate have combined to provide a basis for the unique ecology of the South Okanagan-Similkameen. This area emerged from the last ice age as a wide valley lined with fertile bench-land terraces.

When the residual lobes of the ice sheet finally melted, they left depressions now filled by the Okanagan lakes. The rain shadow of the Coastal Mountains gives the South Okanagan-Similkameen a dry climate, but the open waters of these lakes moderate local temperatures, cooling the air in summer and warming it in winter.

The result is diverse habitat elements in close proximity: wetlands, grasslands, rocky outcrops such as cliffs and talus, and other landscapes supporting a unique assemblage of plants and animals. Many of these species are found only in this area, including eight species of invertebrates found nowhere else in the world, and eight species of vertebrates and 28 invertebrates found nowhere else in Canada. In addition, some species persist locally in the favourable South Okanagan-Similkameen habitat in increasing isolation from the rest of their range.

The Okanagan River watershed forms a north-south corridor that connects the dry landscapes of British Columbia's interior with similar natural systems to the south, including the Great Basin, Sonoran, Mojave, and Chihuahuan deserts. The South Okanagan-Similkameen is important ecologically as a corridor, a channel of movement for wildlife. This corridor is crucial for many species of birds in their annual migrations between summer and winter ranges. Migrant birds often rely on strips of contiguous habitats, such as shrubby riparian margins, where they find cover from predators and food to fuel their flight.

Over long periods of time, the gradual shifts in the ranges of plant and animal species through the Okanagan-Similkameen corridor have been an integral part of ecological change and adaptation in British Columbia. As the climate warmed after the last ice age, many of the plant and animal species from the southerly desert ecosystems expanded their range from Oregon and Washington, and northward through the narrow Okanagan-Similkameen corridor. Ultimately some of these species populated the expansive central interior of British Columbia along the Fraser, Chilcotin, and Thompson rivers. The Okanagan-Similkameen valleys have been the principal portal for entry of southern plants and animals.

Shrub-Steppe habitat



#### **Human Settlement**

One important human impact on the South Okanagan-Similkameen has been the effect of urbanization. Like other valleys in British Columbia, it has been an attractive and fertile place for human settlements. Now, however, human-caused changes are having a serious impact on habitats, placing species at risk. Some species have been extirpated (become locally extinct) through loss of habitat, and many others have become endangered.

There is also the possibility of severing the north-south link between northern grasslands and southern deserts. For the human residents of the South Okanagan and Similkameen valleys,

this loss of habitat and biodiversity threatens vital natural values and quality of life.

Another important threat is posed by global warming. In the South Okanagan-Similkameen, climate change may result in increased temperatures and reduced precipitation. If so, populations of many plants and animals will lose their homes. Species that cannot find suitable conditions quickly by moving to higher elevations or moving northward through the corridor, will disappear.



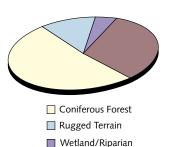
Humans are having a serious impact on habitats placing many species at risk.





South Okanagan urbanization.

# Distribution of priority habitats 134,600 ha



■ Grassland/

Shrub-steppe

#### Wetland/Riparian

The wetland and riparian (waterside) habitats are the most naturally productive of the four habitat types. They have suffered the greatest loss and have reached a critical point. Most of the wetlands that remain are located in the valley bottom. These provide important habitat for a great number of species at risk, with many species depending on such areas for part or all of the year. A portion of the Okanagan River is home to one of only two viable sockeye salmon runs in the entire Columbia River watershed. Wetland/riparian habitats also play a crucial role in the water cycle, including filtering out sediments and pollutants.

#### Grasslands/Shrub-steppe

Grasslands/shrub steppe in the South Okanagan-Similkameen have been dramatically altered by human settlement. More than half of the species at risk in the area depend on this desert-like habitat. In addition, all of the vertebrate species that have disappeared from the area in the last century were grassland/shrub-steppe species. This habitat should be maintained in large tracts to support the many dependent species and to maintain the north-south ecological corridor through the South Okanagan-Similkameen.

# Species at Risk and their Priority Habitats

The unique situation and habitats of the South Okanagan-Similkameen support many species of plants and animals. A number of Canada's identified species at risk have been found in the area. Five vertebrate species have disappeared, and 23 species are known to be nationally at risk. On a provincial scale, 31 per cent of wildlife species and 35 per cent of plant species that are Red-listed (see page 14) depend on habitat found in this area. Additional species new to science continue to be discovered in this special natural system.

Key habitats in the South Okanagan-Similkameen have been identified as wetland/riparian, grassland/shrub-steppe, coniferous forest, and rugged terrain.



**Coniferous Forest** 

Wetland/Riparian



The Sagebrush Brewer's Sparrow nests primarily in sagebrush.

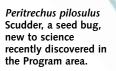
# Rugged Terrain Grasslands/ Shrub-Steppe

#### **Coniferous Forest**

Only a few patches of old-growth Ponderosa pine, Douglas-fir, and western larch forest remain. These forests support diverse communities of plants and animals. Ponderosa pine and Douglas-fir woodlands support a number of species found in no other habitat type, especially if they are in an old-growth and fire-maintained state, with large trees widely interspersed with grasses.

#### **Rugged Terrain**

Rugged terrain, mainly magnificent cliffs and rocky talus, is a crucial habitat element for many species of birds, mammals, and reptiles. Although less damaged than other habitat types, it is being threatened by urbanization and recreation activities.





All four priority habitats can occur in close proximity.



Old growth Ponderosa pines.

### The South Okanagan-Similkameen Conservation Program

The South Okanagan-Similkameen (SOS) Conservation Program was begun by a group of six partners: Environment Canada, BC Ministry of Environment, Lands and Parks, the Habitat Conservation Trust

Fund, The Nature Trust of British Columbia, The Nature Conservancy of Canada, and

The Land Conservancy of British Columbia. With this prospectus, these partners invite the participation of all organizations and individuals with an interest in the aims of the Program. Partnership with local residents will be vital to the Program's success.

The overall aims of conservation in the South Okanagan-Similkameen are to maintain the rich biodiversity of the area, including species at risk, and a viable ecological corridor between the deserts to the south and the grasslands to the north.

The Program will build on previous efforts in the South Okanagan-Similkameen, where there is a long history of conservation activities. These initiatives have resulted in protection of significant portions of the landscape, successful stewardship projects, informative research, and an array of excellent publications, such as the *Habitat Atlas for Wildlife at Risk in the South Okanagan & Lower Similkameen* and *The South Okanagan Ecosystem Recovery Team Scientific Assessment*, as well as planning documents, such as the East Skaha-Vaseux Official Community Plan and the South Okanagan Conservation Strategy.

The Program will draw on this information to identify priorities, set goals and targets, and monitor progress. The challenge will be to achieve the aims against the backdrop of an ever-expanding human population.

The Conservation Program's strategies will expand community involvement, promote ecologically sustainable land-use, enhance stewardship on private and public land, and negotiate acquisition of key habitats, focusing on the species at risk found in the area.

While chiefly promoting conservation of the area's rich biodiversity and the landscape corridor, the Program will also support economic and social values. Effective stewardship of the landscape will conserve important habitats and the key ecological values that have always attracted people to this desert-like area. So that agriculture and other industry can continue to prosper, landscape conservation must be conducted as part of effective community planning.



## **Principles**

rvertebrates of the South

Development and implementation of the Conservation Program should be guided by the following principles:

- Support and involvement of the community, and the development of partnerships, are vital to the success of the Program.
- Coordination of the existing conservation initiatives of various organizations and individuals will form the basis for new projects.
- Decision-making will be guided and adjusted by ongoing scientific research, monitoring, and evaluation.
- Lack of scientific certainty will not unduly restrict conservation activities.
- Land secured for conservation may be used for compatible commercial purposes, including ecologically sensitive forestry and ranching.

 Priorities for action will be based on the experience of land and resource managers, information generated by researchers, the interests and concerns of the community, and traditional knowledge of First Nations and other long-established residents.





# **Proposed Strategies**

Four strategies are proposed for achieving the Program's aims:

- Expand community involvement;
- Promote ecologically sustainable land-use;
- Enhance stewardship on private and public land;
- Negotiate acquisition of key habitats, focusing on the species at risk found in the area.

#### **Expand Community Involvement**

The Program recognizes the conservation achievements of local residents. The founding partners of the Program look forward to working with community members to realize common goals and explore opportunities to learn about and encourage conservation.

The Program will work with the tourism industry to ensure that the many visitors to this area will become more knowledgeable and appreciative of their surroundings.

The Program will support local educational authorities in developing conservation activities for students in the South Okanagan-Similkameen area.

#### Promotion of Ecologically Sustainable Land Use

The South Okanagan-Similkameen has the potential to experience significant growth in the next few years. Another Program strategy is therefore to ensure that future land-use decisions, policies, and practices recognize conservation values, and promote ecologically sustainable land-use. For this to happen, decision-makers, planners, and developers require new tools, more support, different techniques, and additional knowledge.



#### Enhance Stewardship on Public and Private Land

The Program will promote stewardship activities to encourage landowners and land managers to protect the diversity of native plants and wildlife while allowing for economic opportunity. This includes identifying the information and tools necessary for habitat maintenance and

enhancement. It also includes the development of integrative approaches to land management through conservation incentives, demonstration projects, and cooperative education programs.

#### Negotiate Acquisition of Key Habitats

In some cases, it will be necessary to acquire key pieces of habitat. For private land, this will involve purchase, covenants, or donations. For Crown land, conservation will be achieved primarily through existing administrative tools.

These conservation lands will require ongoing care and management and in some cases active restoration. Provided they are compatible with the conservation values of the properties, other uses may be accommodated.







Saw-whet Owl







California Bighorn Sheep



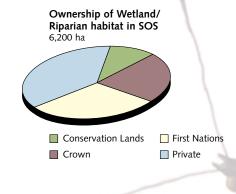
Prickly-pear cactus

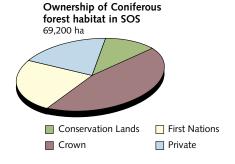
# **Proposed Criteria for Program Success**

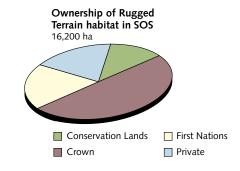
For accountability, the Program must incorporate measures of effectiveness. An important and measurable indicator of Program success will be the land area affected. The Program partners propose the following criteria as levels that, if achieved, will indicate that the Program has done a good job in achieving its aims.

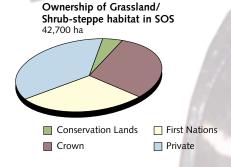
# Habitat criteria in hectares for land conservation, acquisition, and stewardship through the South Okanagan-Similkameen Conservation Program

	-	-		_	
	Habitat	Crown Land Conservation	Private Land Acquisition	Stewardship	Total
1 (5	Wetland/ Riparian	1,500	700	3,000	5,200
	Grassland/ Shrub-steppe	13,000	9,500	9,000	31,500
	Coniferous Forest	13,000	500	10,000	23,500
	Rugged terrain	5,800	800	3,200	9,800
	Total	33,300	11,500	25,200	70,000









## The Next Steps for the Program

This prospectus has been prepared to encourage potential partners to participate in the South Okanagan-Similkameen Conservation Program. The Program concepts must be further developed with those who wish to become partners. With sufficient organizational support, a steering committee can be established and a strategic plan can follow.

The challenge outlined in this prospectus offers opportunities to create a healthy and prosperous future for the South Okanagan-Similkameen area. To realize these opportunities will require the hard work of many people and organizations. But the longer we wait, the more difficult it will be. If we take on the challenges now, we have a great deal to gain; if we wait, we have so much to lose.





Restoration and promotion of native plant communities.



Robin's Nest.

# Nationally Threatened or Endangered Species (\*), and Provincially Red-Listed Species (all species)

STATUS	WETLAND/RIPARIAN Western Red Bat		GRASSLAND/SHRUB-STEPPE Badger		CONIFEROUS FOREST	RUG
Mammals						
Birds	Yellow-breasted Chat* Western Screech owl		Sage Thrasher* Burrowing Owl* Brewer's Sparrow Ferruginous Hawk¹	Swainson's Hawk Grasshopper Sparrow Lark Sparrow	White-headed Woodpecker*	Amer Falo Prairi
Reptiles and Amphibians	Tiger Salamander		Pigmy Short-horned Liza	ırd		Night
Insects	Vivid Dancer		Mormon Metalmark Behr's Hairstreak Sooty Gossamer Wing			Supris
Plants  S.R. Cannings  w-breasted Chat  R.J. Cannings	Scarlet Ammannia* Toothcup Meadow- foam* Small-flowered Lipocarpha* Mosquito fern* Short-rayed Aster Annual Paintbrush Cut-leaved Water- parsnip Tall Beggarticks Western Centaury Atkinson's Coreopsis Hutchinsia False-pimpernel Mousetail Yellow-flowered Knotweed Bushy Cinquefoil Peach-leaf Willow	Blue Vervain Red-rooted Cyperus Awned Cyperus Purple Spike-rush Giant Helleborine' Hairy Water-clover	Freckled milk-vetch Andean Evening- primrose Nettle-leaved Giant- hyssop Long-leaved Mugwort Sickle-pod Rockcress Dalles Milk-vetch Spalding's Milk-vetch Silvery Orache Narrow-leaved Brickellia Short-flowered Evening-primrose Obscure Cryptantha Cockscomb Cryptantha Strict Buckwheat Scarlet Gaura Shy Gilia Whited's Halimolobos	Small-flowered Ipomopsis Western Stickseed Prairie Pepper-grass Northern Linanthus Flat-topped Broomrape Grand Coulee Owl- clover Winged Combseed Branched Phacelia Showy Phlox Columbia Goldenweed Scarlet Globe-mallow Munroe's Globe- mallow Tufted Lovegrass Hairgrass Dropseed Two-spiked Moonwort Lemmon's Sword Fern	Northern Linanthus Northern Gooseberry Lyall's Mariposa Lily Oniongrass	Western Screech-owl
Plant associations	Water Birch/Red-osier Dogwood Hairy Water-clover-American Bulrush Ponderosa Pine-Black Cotton wood / Poison Ivy Black Cottonwood / Water Birch Sandbar Willow—Peach-leaf Willow Douglas-fir/Water Birch Douglas Maple		Big Sage/Bluebunch Wheatgrass Big Sage/Bluebunch Wheat grass-Balsamroot Vasey's Big Sage/Pinegrass Threetip Sagebrush/Bluebunch Wheatgrass- Balsamroot Bluebunch Wheatgrass-Junegrass Bluebunch Wheategrass-Pasqueflower Idaho Fescue- Bluebunch Wheatgrass		Ponderosa Pine/Smooth Sumad	Blue-listed  Data on Red ar Conservation D
			Trembling Aspen / Snow Bluegrass Antelope Brush / Needle Spreading Needlegrass			Consult the foll risk: Provincia







Night Snake



Sage Thrasher

COSEWIC

**RUGGED TERRAIN** 

American Peregrine Falcon1 Prairie Falcon

Night Snake

Committee on the Status of Endangered Wildlife in Canada. Nationally listed species.

**Red-listed** 

Indigenous species or subspecies considered to be Extirpated, Endangered or Threatened in British Columbia and candidates for same.

Sensitive or vulnerable indigenous species or subspecies that could become candidates for the Red list in the foreseeable future. Blue-listed

Data on Red and Blue lists provided by British Columbia Conservation Data Centre.

Consult the following websites for current listing of species at risk: Provincial: http://www.elp.gov.bc.ca/rib/wis/cdc/

tracking.htm

National: http://www.sis.ec.gc.ca/cgi-eas/

endanew.exe

# Nationally Vulnerable species (\*), and Provincially

STATUS	WETLAND/RIPARIA	AN	GRASSLAND/SHR	UB-STEPPE	CONIFEROUS FOREST	RUGGED TERRAIN	
Mammals	Fringed Myotis Bat* Spotted Bat*		Western Harvest Mouse* Great Basin Pocket Mouse	Nuttall's Cottontail* Pallid Bat* Fringed Myotis Bat*	Fringed Myotis Bat* Townsend's Big-eared Bat California Bighorn Sheep	Spotted Bat* \ Fringed Myotis Bat* Pallid Bat*	Vestern Small-footed Myotis Bat
Birds	American Bittern Great Blue Heron Sandhill Crane Lewis's Woodpecker*	California Gull American Avocet	Long-billed Curlew* Bobolink Barn Owl	Short-eared Owl* Ferruginous Hawk* <sup>1</sup>	Gray Flycatcher Flammulated Owl* Williamson's Sapsucker Lewis's Woodpecker*	Canyon Wren White-throated Swift American Peregrine Falcor	D. St. John
Reptiles and Amphibians	Painted Turtle		Great Basin Spadefoot Gopher Snake Rubber Boa Western Rattlesnake Racer	: Toad*	Gopher Snake Western Rattlesnake	Western Rattlesnake	Great Basin Sp
Insects			Monarch Butterfly* Immaculate Green Hai Nevada Skipper California Hairstreak	rstreak	S.R. Ca		S.G. Cannin
Fish	Umatilla dace* Chiselmouth Mountain Sucker Mottled Sculpin				Lewis's	Woodpecker	Short-eared O
Plants	Giant Helleborine*1 Prairie Gentian Tall Jacob's-ladder Dotted Smartweed Booth's Willow Tweedy's Willow Swamp Onion Bearded Sedge Blackened Sedge Porcupine Sedge	Fox Sedge Beaked Spike-rush Nuttall's Waterweed Little Fescue Regel's Rush Marsh Muhly River Bulrush	Western Dogbane Holboell's Rockcress Threadstalk Milk-vetch Five-angled Dodder Montana Larkspur Cushion Fleabane Thyme-leaved Spurge Dwarf Groundsmoke Common Twinpod Thick-leaved Thelypody		Western Dogbane Montana Larkspur Dry-land Sedge	Cushion Fleabane	Rubber Boa





Spotted Bat

Big Sage/ Needle-and-thread Grass Bluebunch Wheatgrass Balsamroot Plant associations Prairie Rose/Idaho Fescue

Common Juniper/Bluebunch Wheatgrass Ponderosa Pine/Red Three-awn Ponderosa Pine/Bluebunch Wheatgrass-Rough Fescue Ponderosa Pine/Bluebunch Wheatgrass-Idaho Fescue

Rocky Mountain Sedge Holm's Rocky Mountain Sedge



#### South Okanagan Similkameen CONSERVATION PROGRAM

#### How to Get Involved

For further information on how to participate in the South Okanagan-Similkameen, contact any of the following Program partners:

# Conserving Canada's Desert Country is Good For Nature, People and Business



Environnement Canada

#### Environment Canada

Manager, Pacific Wildlife Research Centre Tel: (604) 940-4700 Web: www.pyr.ec.qc.ca/wildlife



#### B. C. Ministry of Environment, Lands and Parks

Penticton Office Senior Wildlife Biologist Tel: (250) 490-8200 *Alternate:* 

# Regional Manager, Fish, Wildlife and Habitat Protection

Southern Interior Regional Office Tel: (250) 371-6200 Web: www.elp.gov.bc.ca/sir



#### **Habitat Conservation Trust Fund**

Manager

Tel: 1-800-387-9855 Web: www.env.gov.bc.ca/hctf



#### The Nature Trust of British Columbia

Executive Vice-president Tel: (604) 925-1128



#### The Nature Conservancy of Canada

Tel: (250) 479-3191 Email: bcoffice@natureconservancy.ca Web: www.bc.natureconservancy.ca



#### The Land Conservancy

Executive Director Tel: (250) 479-8053 Email: penticton@conservancy.bc.ca Web: www.conservancy.bc.ca



#### Okanagan Similkameen Conservation Alliance

Chair Tel: (250) 497-8149



#### **Ducks Unlimited Canada**

Director of Regional Operations Pacific Region Tel: (250) 374-8307 Web: www.ducks.ca



#### The Nature Conservancy (U.S.)

Tel: (206) 343-4344 Web: www.tnc-washington.org



#### Okanagan Region Wildlife Heritage Fund Society

President Tel: (250) 766-2559 Fax: (250) 766-4864



#### Osoyoos Desert Society

Executive Director Tel: (250) 495-2470 Toll Free Tel: 1-877-899-0897 Email: mail@desert.org Web: www.desert.org



# **Grasslands Conservation Council of British Columbia**

Executive Director Tel/Fax: (250) 374-5721



# **British Columbia Conservation Foundation**

Head Office: (604) 576-1433 Regional Office: (250) 828-2551 Web: www.bccf.com



#### Federation of British Columbia Naturalists

Regional Representative Email: mclapson@img.net Tel: (250) 495-7102 Web: members.xoom.com/fbcn



#### **Okanagan Similkameen Parks Society**

Secretary Tel: (250) 494-8996



# Okanagan Region BC Wildlife Federation

Okanagan Region Regional Director Tel: (250) 499-2508



#### **BC Wildlife Federation**

Executive Director 1-800-533-2293 Ext. 230 Web: www.bcwf.bc.ca



#### **Canadian Parks and Wilderness Society**

Executive Director 604-685-7445 604-685-6449 Email: info@cpawsbc.org Web: www.cpaws.org



#### The Royal British Columbia Museum

Director, Curatorial Services 250-356-RBCM (7226) or 1-888-447-7977 Web: royal.okanagan.bc.ca or www.rbcm.gov.bc.ca

