

Sensitive Ecosystems are ecosystems that are ecologically sensitive and/or at risk in the landscape.

canids, broadleaf woodpeckers, pileated woodpeckers, sharp-shinned hawks, and all forest ecosystem types were well-represented in the Olanegan Valley. The study found that the majority of the species in the Olanegan Valley shows losses of greater than 50% of core ecosystem types in the Olanegan Valley.

Healthy, functioning natural ecosystems play an important role in adapting to and buffering the impacts of climate change. Climate change adaptations such as reducing stressors, improving ecosystem condition, and landscape management can help maintain and enhance ecosystem resilience for the future. The ecosystem research in this project are ecologically significant

Many of the sites identified by the SEI are at high risk of conversion to other uses or further degradation. There is a study area, 47% was mapped as Sensitive Ecosystems (SE) and 29% into the Olanegan Ecosystems (OE) (see legend). The inventories listed that wetlands, shrublands, and forest types were the most common ecosystem types in the Olanegan Valley. Forest types were extremely rare - covering less than 5% of the study area. Although areas of grasslands, coniferous woodlands, and mature forest types were present, they were not as common as the other ecosystem types. The study found many SEs that have been degraded by fragmentation, human use, livestock grazing, and alien species.

services they provide, such as climate regulation, water filtration, productive soil, carbon sequestration, nutrient cycling, pollination, wildlife habitat and more. Sensitive ecosystems must be considered in the context of the overall landscape, which includes other ecosystems that also contribute to ecosystem services.

Study Area

The Okanagan Valley SEI project is comprised of a number of individual SEI projects: Bella Vista – Goose Lake Range; Central Okanagan; City of Kelowna; Vernon Commone; District of Lake Country; Joe Rich; TFL 15; Narameta; Colstream – Vernon; and the South Okanagan. For more information about these projects and the methods used, please refer to the References section on this map.

Various SEI projects that have been completed in the Olanoguan Valley from Vernon to Oyojoc, and to consider and present them as a whole in mapped form to aid land use planning and to encourage landscape-level conservation planning at multiple scales, including regional and basin-wide. The project deliverables include 150 SEI maps at a 1:10,000 scale on a Terrain Resource Information Management (TRIM) base, and a series of reports. The individual project reports detail the methods used, study results, descriptions of the ecosystems, and conservation tools for management (see References section).

Species at Risk

The large variety of ecosystems in the Okanagan Valley provide for diverse habitat needs of many wildlife and plant species, including a remarkable number of at-risk plant and animal species. Many of these species have very restricted ranges, and some occur nowhere else in B.C. or Canada. A high

most Olanigan SEI projects were developed by first delineating Terrestrial Ecosystem Mapping (TEM), except in the Naramata project area where the SEI polygons were mapped from air photos using a bioterrain approach. TEM

analyzed for at-risk status and ecological sensitivity. Sensitive ecosystems were grouped using the Ecosystem-based Resource Mapping (ERM) table tool. This tool allows SEI classes and subcategories to be assigned to each TEM unit. If the mapped TEM unit is included within an at-risk ecological community as defined and listed by the CDC, or if it is ecologically sensitive, the unit was assigned to one of the applicable ecosystem classes and subcategories. In cases where a given ecosystem falls into more than one class, it is always assigned to the more sensitive class.

Lake Country: Iverson, K. and P. Uunila. 2006. *Sensitive Ecosystems Inventory: Lake Country, 2005*. 1:20,000 maps.

TFL 15: Bruhjiell, D. and S. Robertson. 1999. *Ecosystem Mapping of Weyerhaeuser Canada Ltd., Tree Farm License 15*. Prepared for Weyerhaeuser Canada Ltd., Okanagan Falls, in partnership with FRBC and

Bella Vista – Goose Lake Range: Iverson, K. and J. Shypitka. 2002. *Terrestrial Ecosystem Mapping Of the Bella Vista – Goose Lake Range*. 1:20,000 map.

Kelowna: Iverson, K. and P. Uunila. 2008. *Sensitive Ecosystems Inventory: City of Kelowna*. 1:20,000 maps.

South Okanagan: Herson, K. and A. Haney. 2009. Refined and updated ecosystem mapping for the South Okanagan and lower Similkameen Valley. Unpub. report prepared for the Regional District of the Okanagan - Similkameen.

Joe Rich: Iverson, K. and P. Unila. 2006. Sensitive Ecosystems Inventory: Coastal Okanagan. Joe Rich. 1:20,000 maps.

British Columbia Conservation Data Centre (CDC). Ecosystems Branch.
BC Ministry of Environment. www.env.gov.bc.ca/cdc/

[Related Publications and Links](#)

Green Bylaws Toolkit for Conserving Sensitive Ecosystems and Green




Infrastructure: www.greenbylaws.ca
The Toolkit contains practical examples of bylaw provisions currently in use in B.C., including model provisions for Regional Growth Strategies, Official

Climate Change: Wilson, S.J and R.H. Hebda. *Mitigating and Adapting to*

Develop with Care: *Environmental Guidelines for Urban and Rural Land*

Development in British Columbia. BC Ministry of Environment
www.env.gov.bc.ca/wild/documents/bmp/devwithcare2006/develop_with_care_intro.html

Taking Nature's Pulse: The Status of Biodiversity in British Columbia
Austin, M.A., D.A. Buffett, D.J. Nicolson, G.G.E. Scudder and V. Stevens
(eds.). 2008. *Taking Nature's Pulse: The Status of Biodiversity in British
Columbia*. Biodiversity BC, Victoria, BC. 268 pp. Available at:
www.biodiversitybc.org

Alpine Ecosystems provide the following services:		Some species associated with Alpine Ecosystems are:		 American Badger <i>Taxidea canadensis</i> (Monotreme, Endangered) Photo by Parks Canada W. Lynch
<ul style="list-style-type: none"> Erosion control Fresh water Climate regulation Nutrient cycling and maintenance of productive soils 	<ul style="list-style-type: none"> Pollination Food production Soil formation 	<ul style="list-style-type: none"> American Badger Peregrine Falcon Wolverine 	 	

Other Important Ecosystems

Seasonally Flooded Agricultural Fields Ecosystems provide the following services:

- Flooding control
- Carbon storage
- Drought recovery
- Maintenance of productive soils
- Birds & Insects

Some species associated with Seasonally Flooded Agricultural Fields are:

- Great Basin Spadefoot
- Long-billed Curlew

SAN JOSE
SANTA BARBARA
Humboldt - "Piedmont"
Photo by Gary Nails
[CaliforniaWetlands.com](#)

Photo by Fred Leung


Mature Forest Ecosystems provide the following services:

- Climate regulation
- Carbon storage
- Natural beauty
- Flood control
- Pest regulation
- Public recreation

Some species associated with Mature Forest Ecosystems are:

- Lyall's Mariposa Lily
- Wolverine
- Western Screech Owl
- Flammulated Owl

Ous flammatus
(Hut, Spotted Creeper)
Photo by Pieta Canada W. Lynch



discapaces (NS): (Areas not mapped as sensitive or other important ecosystems are depicted in white)

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Non-sensitive Landscapes are modified areas not occupied by sensitive ecosystems, and include urban areas, disturbed rural landscapes, and young forests. Urban areas have human-influenced features or disturbances that are dominant across the landscape. Disturbed rural areas can be interspersed with range, farmland and natural vegetation, or cultivated crops. Young forests are conifer-dominated stands with an age range between 0 and 30 years. Non-sensitive landscapes are shown in white in the areas that are not designated by a sensitive ecosystem. In addition, many sensitive ecosystem polygons close to urban or disturbed areas may have a modified landscape interspersed with the sensitive ecosystem(s), in which the sensitive ecosystems are too small to map individually. These modified areas are depicted as NS (non-sensitive) on the map.