

# Biodiversity Factsheet

## Vernon Commonage — City of Vernon

Conservation of ecologically significant areas in the Okanagan Basin protects rare and fragile ecosystems, preserves native biodiversity, maintains wildlife corridors and ecosystem connectivity, and safeguards critical water resources.

The Vernon Commonage spans over 6,500 hectares of largely intact natural landscape, located between the urban centres of Kelowna and Vernon and stretching between Okanagan and Kalamalka Lakes. This ecologically significant area features a diverse mosaic of hill slopes, grassland meadows, dry uplands, and open and closed coniferous forests, interwoven with wetlands, riparian corridors, and broadleaf woodlands—habitats that are increasingly rare in the arid Okanagan Valley.

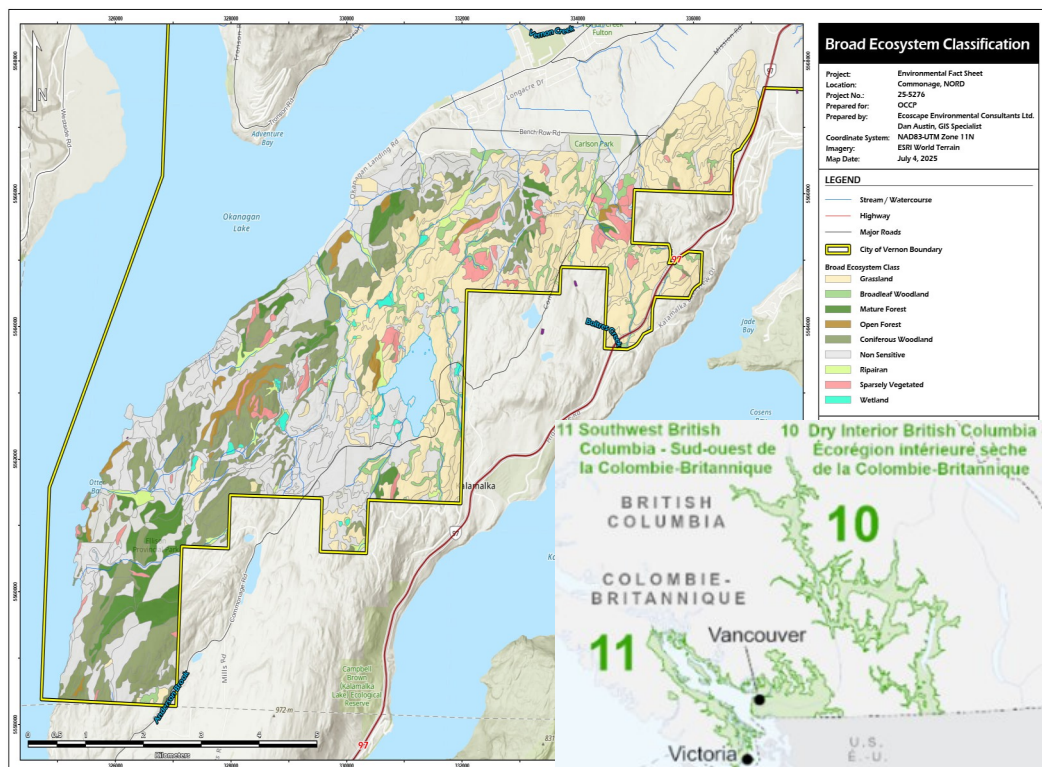
Embedded within these ecosystems are numerous irreplaceable critical habitat features, such as natural grassland, rocky outcrops, talus slopes, cliff faces, wildlife trees, mature forest stands, vernal pools, sandy soils, and coarse woody debris, that support a variety of species, many at-risk. The area's varied terrain and ecosystems support a high level of biodiversity and essential ecological functions, with conservation values recognized at local, provincial, national, and international levels.

### Priority Place

The dry interior valleys of British Columbia are recognized as a Priority Place under the Canadian Federal approach to biodiversity conservation. Priority Places are regional hotspots for flora and fauna, with unique ecological character and a concentration of rare or at-risk species. The Vernon Commonage lies within the Okanagan-Similkameen Priority Place—home to some of the most endangered biogeoclimatic zones in the province. This region supports habitat for 83 species-at-risk, as well as ecologically and culturally significant megafauna. Much of the land in this area is privately owned or managed under mixed agreements, creating valuable opportunities for stewardship, conservation partnerships, and habitat restoration.

### FAST FACTS

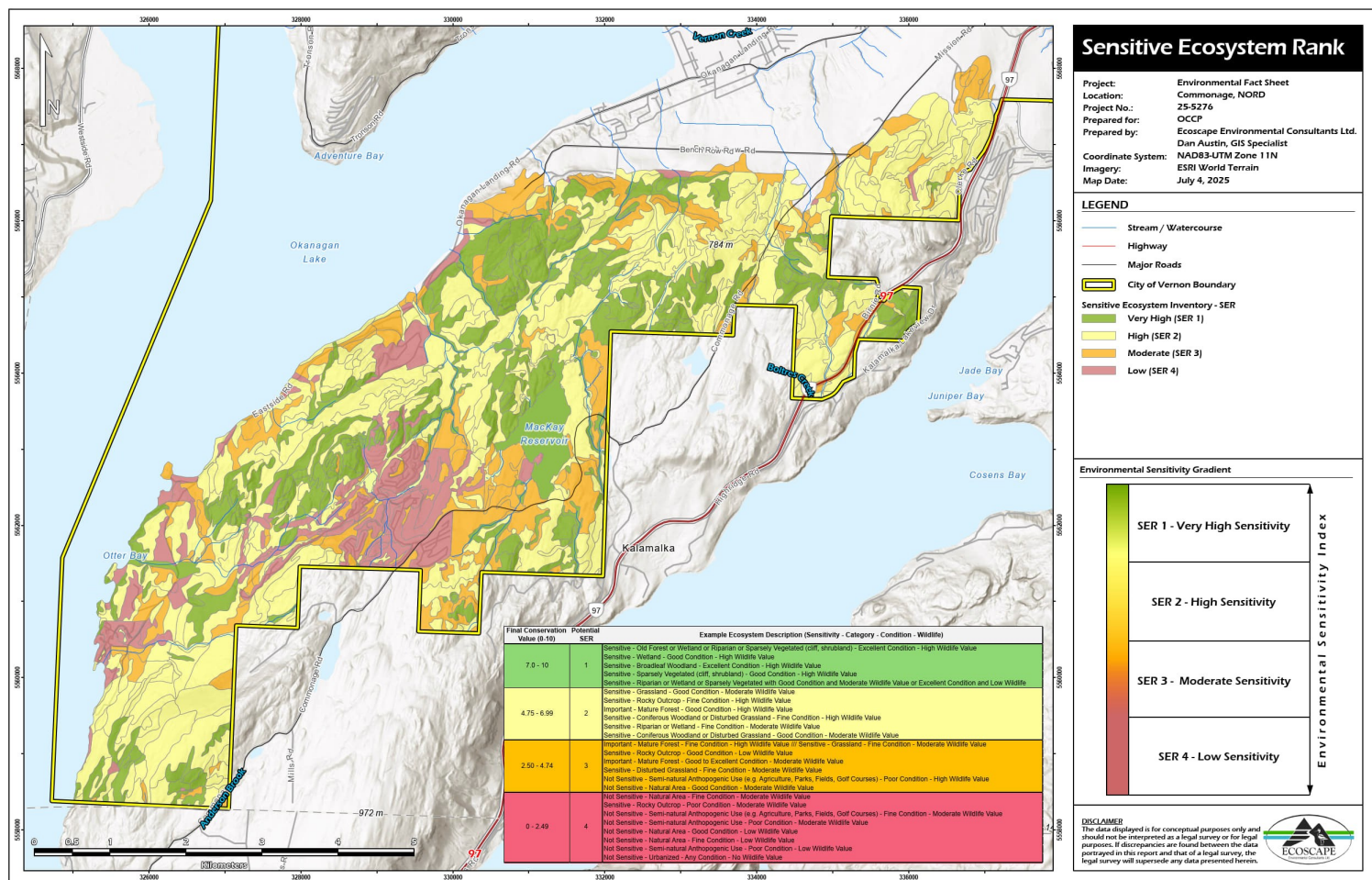
- Canadian Biodiversity Priority Place #10
- 70% land area with High or Very High sensitivity
- 8 endangered/threatened ecosystems
- 4 ecosystems of special concern
- 4 globally at-risk ecosystems
- 30 wetlands and 12 streams
- National Ecological Corridor #3
- Supports multiple species-at-risk





## Ecosystem Sensitivity

Over 70% of the Vernon Commonage is classified as High or Very High Sensitivity, indicating ecologically fragile and locally rare habitats with limited human disturbance. These ecosystems support vital processes like nutrient cycling and hydrological regulation and provide specialized habitats for diverse species. Due to their unique environmental conditions, they are highly vulnerable to threats such as development, pollution, invasive species, and climate change, making their conservation critical for maintaining regional ecological resilience.



## At-Risk Ecosystems

The rarity of ecosystems within Vernon Commonage is recognized not only at the local level, but at the provincial, national and international levels as well. Provincially, eight ecosystem types are Red-listed and four are Blue-listed, while internationally, the Commonage includes one critically imperiled, two imperiled, and one vulnerable ecosystem type.

### Global Conservation Status

Indicates risk of global extinction based on range, prevalence, occurrence trends, and threats

### BC Red List

Ecological communities or native species that are extirpated, endangered, or threatened

### BC Blue List

Ecological communities or native species that are of special concern due to loss or degradation

### BC Yellow List

Ecological communities or native species that are apparently secure and not at risk of extinction

## At-Risk Ecosystems of the Vernon Commonage

Ecosystem Name	BC List	Global Conservation Status
Baltic Rush Marsh-Meadow	Blue	Vulnerable
Black cottonwood / Douglas-fir – Common Snowberry – Red-osier Dogwood	Red	Critically Imperiled
Bluebunch wheatgrass – Balsamroot	Red	Imperiled
Douglas-fir / Ponderosa pine – Bluebunch wheatgrass - Balsamroot	Red	Imperiled
Douglas-fir / Ponderosa pine – Bluebunch wheatgrass - Pinegrass	Blue	-
Douglas-fir / Ponderosa pine – Pinegrass	Blue	-
Douglas-fir / Ponderosa pine – Snowberry - Spirea	Red	-
Douglas-fir / Ponderosa pine – Snowbrush - Pinegrass	Blue	-
Hybrid white spruce / Douglas-fir – Douglas maple - Dogwood	Red	-
Idaho fescue – Bluebunch wheatgrass	Red	-
Prairie Rose – Idaho fescue	Red	-
Trembling aspen – Snowberry – Kentucky Bluegrass	Red	-

## Aquatic Ecosystems

### Wetlands and Streams

The Vernon Commonage encompasses an interconnected hydrological network composed of 30 mapped wetlands, 12 streams, and various ephemeral drainage corridors and moist areas. In a semi-arid landscape, these moisture-retaining systems serve as ecological refugia, supporting the many species that occur in the area. They also form integral components of wildlife corridors.

Located between Okanagan and Kalamalka Lakes, riparian corridors provide ecological linkages between foreshore habitats, lowlands, and upland grasslands and woodlands. These corridors support wildlife movement and the flow of water, nutrients, and energy across habitats, helping to maintain landscape connectivity. In addition to offering critical breeding, foraging, and sheltering sites for diverse species, these habitats also deliver vital ecosystem services such as freshwater storage, water purification, flood regulation, and erosion control.

Historically, over 85% of the Okanagan Valley's wetlands have been lost. Ongoing anthropogenic activities threaten what remains through hydrological alteration, fragmentation, and the spread of invasive species. Their protection is increasingly urgent given intensifying development pressures and as the growing impacts of climate change place stress on water availability and ecosystem resilience.



### Wildlife Corridors

The Okanagan Valley serves as a critical habitat corridor, linking the arid regions of the western United States—beginning in the Great Basin—with the grassland ecosystems of British Columbia's interior plateau. The Vernon Commonage is situated in a narrow section of valley bottom that functions as a key bottleneck for wildlife movement. This area funnels animals moving north-south and across elevations as they search for seasonal foraging, breeding, and nesting grounds. Protecting continuous wildlife movement through the Commonage supports biodiversity, maintains essential connections between core habitats, and enhances the ability of wildlife populations to adapt to a changing climate through genetic connectivity.

### Ecological Corridor #3

Twenty-three areas across Canada have been identified as priority locations where ecological corridors are urgently needed for biodiversity conservation and climate change adaptation. Vernon Commonage occurs in Ecological Corridor #3—extending through the Okanagan Valley and the Okanagan/Shuswap highlands. This Corridor supports the highest concentration of rare, endangered, and threatened species in BC, including a number of species found nowhere else in Canada or the world. Wildlife movement around the regions' deep, cold lakes has been recognized as critical for both climate refugia and climate corridors—areas that wildlife can migrate to and through to escape more drastic climatic shifts in other locales.

## Faunal Biodiversity

### Invertebrates

Alkaline lakes, wetlands, riparian woodlands, and shrub-steppe ecosystems of the northern Okanagan support a remarkable diversity of invertebrate life. Thousands of species thrive here—many are common, but some are rare and uniquely adapted to the specialized habitats of the Southern Interior Plateau. The Vernon Commonage area supports several of these rare provincially Red- and Blue-listed species, including the immaculate green hairstreak, monarch butterfly, and the Okanagan Hammertail. The latter is of significant conservation concern, globally ranked as critically imperiled due to its extremely limited distribution—found only in three select locations of south-central British Columbia and nowhere else on Earth.



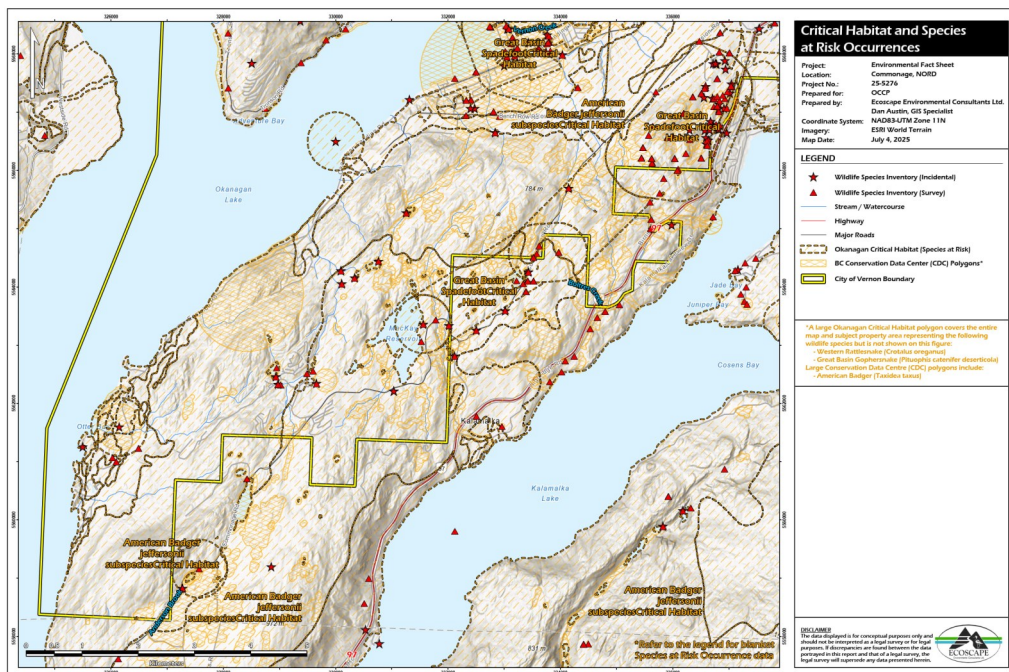
### Birds

Over 150 bird species have been recorded in the Vernon Commonage, including a variety of raptors. These wide-ranging predators rely on large, undisturbed areas for hunting and are particularly sensitive to human disturbance. As a result, intact habitats such as mature coniferous forests and open grasslands are especially important for their successful nesting and foraging. Several species found in the Commonage are provincially Red- and Blue-listed, including the Flammulated Owl (*Psiloscops flammeolus*), Common Nighthawk (*Chordeiles minor*), and Swainson's Hawk (*Buteo swainsoni*)—the latter occurring in its highest concentrations in British Columbia within the Commonage area.

Vernon Commonage is also the nesting and breeding site for many songbirds, including sparrows, warblers, finches, swallows, and thrushes. As insectivores, seed dispersers, and pollinators, these species help control pest populations, support plant regeneration, and maintain healthy forest and grassland dynamics. As of 2016, more than 1/3 of North American songbird species have been identified as at risk of extinction, the greatest threats to these species being habitat loss and degradation.







## Reptiles and Amphibians

The Vernon Commonage supports a rich diversity of reptiles and amphibians, due to its varied terrain and habitat features. Rock talus slopes, grasslands with friable soils, woodland refuges, and wetlands provide essential microhabitats that support every stage of reptile and amphibian life cycles—from breeding and nesting to foraging and overwintering.

Numerous reptile and amphibian species have been recorded in the area, many of which are provincially Red- or Blue-listed, reflecting their vulnerability and the conservation importance of this landscape. Adding to its significance, the entire Vernon Commonage lies within federally designated critical habitat polygons for three species at risk: the Great Basin Gophersnake (*Pituophis catenifer deserticola*), Western Rattlesnake (*Crotalus oreganus*), and Great Basin Spadefoot (*Spea intermontana*). These species rely on the area's intact habitat mosaic for survival, particularly its well-distributed hibernacula—stable, thermally buffered refuges essential for overwinter survival.

### Reptiles and Amphibians Occurring in the Vernon Commonage Area

Name	BC List	SARA Status
<b>Reptiles</b>		
Common garter snake	Yellow	-
Gophersnake, <i>deserticola</i> subspecies	Blue	Threatened
Northern Alligator Lizard	Yellow	-
North American racer / Western yellow-bellied racer	Blue	Threatened
Northern rubber boa	Yellow	Special Concern
Western Painted turtle – Intermountain – Rocky Mountain population	Blue	Special Concern
Western rattlesnake	Blue	Threatened
Western skink	Blue	Special Concern
Western terrestrial garter snake	Yellow	-

Name	BC List	SARA Status
<b>Amphibians</b>		
Great Basin spadefoot	Blue	Threatened
Long-toed salamander	Yellow	-
Pacific chorus frog	Yellow	-
Western Toad	Yellow	Special Concern



#### SARA Status — Threatened

Likely to become endangered unless action is taken

#### SARA Status — Special Concern

Sensitive to human activities or natural events

## Mammals

The Vernon Commonage contains large tracts of undisturbed land that are essential for supporting a wide range of wildlife. Large mammals—such as ungulates, American black bears, coyotes, and American badgers—depend on these expansive areas for foraging, mating, and raising their young. The Commonage provides critical overwintering habitat, offering important low-elevation shelter and food sources when resources are scarce at higher elevations. The area lies within federally designated critical habitat for the American badger, a species of conservation concern with an estimated population of only 250 individuals remaining in British Columbia. In addition to large mammals, the Commonage supports a wide variety of small mammals, including bats, shrews, voles, and marmots. Some of these animals are Red- or Blue-listed in BC, while others, though more common, still play a vital role in local food webs.

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