

Anmore Hillside Developments
Anmore, BC

Overview Environmental Assessment



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solve and simplify

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List of Acronyms

CDC	-	BC Conservation Data Centre
CWD	-	coarse woody debris
CWHdm	-	Dry Maritime Subzone of the Coastal Western Hemlock
EIA	-	Environmental Impact Assessment
MFVT	-	Mature Forest Vegetation Type
OEA	-	Overview Environmental Assessment
PGL	-	PGL Environmental Consultants
RAPR	-	Riparian Areas Protection Regulation
RFVT	-	Regenerative Forest Vegetation Type
SARA	-	<i>Species at Risk Act</i>
SPEA	-	Streamside Protection Enhancement Area
WSA	-	<i>BC Water Sustainability Act</i>

1.0 INTRODUCTION AND OBJECTIVES

Pinnacle Ridge Hillside Landowners (c/o Urbanex Strategies) plans on rezoning the Pinnacle Ridge Hillside Properties (the Project) in Anmore, BC (the Site). The Site is currently comprised of four lots with the following PIDs: 028-861-256; 027-687-309, 002-811-626; and 028-856-589 (Figure 1).

PGL Environmental Consultants (PGL) has prepared the following Overview Environmental Assessment (OEA) to meet the Village of Anmore's (the Village) environmental requirements associated with the rezoning process.

A key part of early planning for this property involves identifying and understanding environmental values onsite to establish a strong foundation to guide future development planning and design. In support of this approach, PGL conducted a biophysical inventory analysis of the Northern Property (PID 028-861-256) in 2016 (Figure 1). Satori Environmental Services (Satori) completed a subsequent environmental assessment of the whole property in 2017. In 2023, PGL was retained to complete a background review and field reconnaissance to confirm if significant changes to Site conditions had occurred, confirm the relevancy of previously collected data, and update existing information where possible. The 2023 field reconnaissance focused on watercourse features previously identified in the Northern Property, and vegetation/habitat types within the Southern Property (PIDs 027-687-309, 002-811-626; and 028-856-589) (Figure 1).

The current OEA uses previous inventory and assessment data from PGL and Satori conducted in 2016 and 2017, and findings from the recent reconnaissance field and desktop review. The OEA includes the following:

- High-level evaluation of environmental values within the Site including watercourses, fish and wildlife habitat, species at risk, and vegetation;
- Delineation of sensitive areas onsite to inform development planning to mitigate potential adverse impacts through design. Data is also presented visually on figures to identify development opportunities and environmentally sensitive areas; and
- Identification of environmental constraints, or regulatory requirements associated with the key environmental values onsite.

At this stage of the Project planning an impact assessment has not been conducted. Recommendations to avoid sensitive habitats are provided so that the development can be designed to minimize impacts to sensitive habitat features. An updated report including an impact assessment is expected to be needed during future development permit application processes. Additional data collection may be required to address data gaps to meet regulatory requirements, as indicated in this report.

2.0 REGULATORY FRAMEWORK

This section summarizes the municipal, provincial, and federal environmental regulatory requirements that apply to the Site. Compliance with the various Acts and regulations referenced below should be addressed by obtaining the required permits, licences, and/or approvals for future project design phases and by applying appropriate mitigation and best management practices.

2.1 Municipal

The Site is in the Village of Anmore. Several municipal bylaws and regulations – related to site contamination, pollution prevention, and protection of ecological integrity – will apply to redevelopment of the Site.

Under the Village of Anmore **Tree Management Bylaw No. 579-2018**, the removal of a tree that is ≥ 20 cm diameter at breast height must be done under a valid permit issued under the bylaw.

The **Sediment and Discharge-Control-Bylaw No. 309** sets erosion and sediment control requirements to prevent erosion of soils and deposition of sediment into the Village's watercourses and storm systems from developments.

2.2 Provincial

The following four provincial instruments apply to redevelopment at the Site.

The **Riparian Areas Protection Regulation** (RAPR) of the BC *Riparian Areas Protection Act* sets requirements for providing development setbacks to protect watercourses. The responsibility for RAPR implementation is delegated to municipalities. The Village defers to RAPR to determine development setbacks and does not have any watercourse protection bylaw that supersedes the RAPR requirements.

The BC **Wildlife Act** protects most vertebrate animals from direct harm or harassment except as allowed by the regulation (e.g., hunting or trapping) (Government of BC, 1996a). It is a contravention of the *BC Wildlife Act* to possess, take, injure, molest, or destroy a bird, its nest, or eggs, except as provided by the regulation. Nests of some species including eagles and herons are protected year-round, regardless of whether they are occupied.

The **Environmental Management Act** regulates activities that introduce waste into the environment, store waste, and treat/recycle special waste (Government of BC, 2003). Under this Act, regulations have been established to govern hazardous waste, spills and spill reporting, air emissions, and waste disposal and management. This Act also governs the removal of contaminants under the Contaminated Sites Regulation.

The BC **Water Sustainability Act** (WSA) manages use and division of surface and sub-surface water, as well as changes in and around watercourses. Most works that disturb watercourses require approval under the Act; Authorized changes defined under the Act only require that developers notify the BC government.

The BC **Weed Control Act** requires that landowners or occupiers control the spread of noxious weeds on their property. Specific species requiring control are defined in the Provincial and Regional District Noxious Weed List, Schedule A (Government of BC, 1996b).

2.3 Federal

The following four federal instruments apply to redevelopment at the Site.

The **Species at Risk Act** aims to conserve and protect Canada's biological diversity and fulfils a commitment under the United Nations Convention on Biological Diversity. The Act complements existing federal, provincial, and territorial legislation to protect and prevent wildlife species from

becoming extinct or extirpated and protects rare species throughout Canada (Government of Canada, 2002). On private land in BC, specific prohibitions exist to prevent harm to migratory birds and aquatic species that are listed in the *Species at Risk Act* or by the Committee on the Status of Endangered Wildlife in Canada.

The ***Migratory Birds Convention Act*** prohibits the taking or killing of migratory birds and their nests and eggs, as well as the deposition of harmful substances in areas frequented by migratory birds (Government of Canada, 1994). Canada seasonally hosts approximately 450 species of native birds, with most protected under the *Migratory Birds Convention Act* and enforced through the Migratory Birds Regulations (C.R.C.,c 1035). Effective July 30, 2022, the Migratory Bird Regulation provides year-round protection of the nests of 18 migratory birds listed under Schedule 1. These nests are protected until they can be deemed abandoned.

The ***Fisheries Act*** prohibits harmful alteration, disruption, or destruction of fish habitat and prohibits activities that cause the death of fish by means other than fishing.

The ***Canadian Environmental Protection Act*** (Government of Canada, 1999) governs practices of pollution prevention and specifies procedures, practices, or release limits relating to works, undertakings, and activities during any phase of project development and operation, including the location, design, construction, start-up, closure, dismantling, and clean-up phases, and subsequent monitoring activities. Accidental releases during construction are regulated under the *Canadian Environmental Protection Act* if liquid spills occur into the soils and atmosphere.

3.0 OVERVIEW ASSESSMENT METHODOLOGY

PGL completed a desktop review of available environmental information. A series of field reviews were completed to ground-truth desktop material and develop a better understanding of Site conditions.

3.1 Desktop Research

Historical and current Site conditions were reviewed through the following data sources:

- Orthophotographic/aerial imagery and available base maps of the Site;
- Data BC's Conservation Data Centre (CDC) mapping;
- The Species at Risk Public Registry;
- Web-based provincial and regional mapping tools; and
- Village of Anmore Official Community Plan.

3.2 Field Assessment

Information was supplemented by observations and data collected by PGL Qualified Environmental Professionals in 2016 and 2023 and Satori in 2017 to:

- Identify, qualify, and map valued environmental features; and
- Ground-truth and refine areas of ecological sensitivity or value.

4.0 ENVIRONMENTAL CONDITIONS

The environmental setting presents information on the current condition of the environmental components of the Project area.

4.1 Site Location and Land Use

The Project is in the Village of Anmore within an undeveloped area that borders a residential neighbourhood. Much of the surrounding area is forested with a BC Hydro transmission right-of-way to the north and east of the Site.

Currently, the Site is comprised of an undeveloped forested area with a network of trails throughout the property. The Site presents high-value environmental features including watercourses, mature trees, and habitat for a variety of wildlife.

4.2 Ecosystems

The Site is in the Dry Maritime Subzone of the Coastal Western Hemlock Biogeoclimatic Ecosystem Classification Zone (CWHdm) (Meidinger and Pojar 1991).). This variant is characterized by warm, relatively dry summers that experience moist, mild winters with little snowfall. Climax plant communities on zonal sites (i.e., sites influenced by moderate soil moisture and nutrient regimes) are dominated by Douglas-fir (*Pseudotsuga menziesii*) with western hemlock (*Tsuga heterophylla*) and lesser amounts of western redcedar (*Thuja plicata*). Zonal understorey composition typically contains salal (*Gaultheria shallon*) and red huckleberry (*Vaccinium parvifolium*) with step moss (*Hylocomium splendens*), Oregon beaked moss (*Kindbergia oregana*), lanky moss (*Rhytidiadelphus loreus*), and flat moss (*Plagiothecium undulatum*) (Green and Klinka, 1994).

The majority of the Site was forested. Four distinct vegetation types were present, as observed from reconnaissance field reviews conducted in 2016 and 2023. The vegetation types included regenerative forest, mature forest, riparian vegetation, and young deciduous forest (Figure 2). The vegetation types are described in the following sections and were delineated based on plant community composition and forest maturity.

Polygon A – Regenerative Forest Vegetation Type

The Regenerative Forest Vegetation Type (RFVT) occurred in the Northern Property of the Site and showed signs of logging approximately 30 years ago. The RFVT was characterized by a mix of young seral and maturing seral with pockets of maturing climax forest stands. Tree species within the more mature forest stands were dominated by western hemlock with lesser components of western redcedar and Douglas-fir. The younger, seral forest stands were dominated by red alder. Western hemlock and western redcedar were observed in the intermediate and regenerative layers of the seral stands (Photograph 1).

The understorey was characterized by a mix of native species with some invasive species. Dominant shrub species included salmonberry (*Rubus spectabilis*), salal, vine maple (*Acer circinatum*), western redcedar, and western hemlock. The sparse herb layer was dominated by sword fern (*Polystichum munitum*) with a dense cover of leaf litter. Evidence of past forest fires was observed. Moderate coarse woody debris (CWD) cover was observed within.

Polygon B – Mature Forest Vegetation Type

The Mature Forest Vegetation Type (MFVT) occurred in the Southern Property and represented an area characterized by more intact, mature forest. A maturing climax forest occurred here (80–120 years old) containing primarily coniferous tree species and a well-established understorey plant community (Photograph 2). The overstorey codominant layer primarily contained western hemlock with lesser amounts of western redcedar. The intermediate/suppressed layers included a similar mix with occasional occurrences of red alder. Several large, veteran tree stumps were observed throughout this polygon, confirming historic logging activities had once occurred.

The patchy shrub layer was dominated by moderate to dense areas of salal, red huckleberry, and conifer regeneration. A moderate cover of sword fern dominated the herb layer. Evidence of past forest fires was also observed, as was moderate CWD. Recent and deactivated access roads bisected the MFVT polygon.

Polygon C – Riparian Forest Vegetation Type

Within the Site, multiple watercourses and seepages were observed. Forest canopy cover was reduced in the riparian areas adjacent to these features. The RFVT consisted of young seral forest stands that were predominately deciduous with some younger coniferous trees (Photograph 3). Shrub cover was dense and included salmon berry, vine maple, and thickets of invasive Himalayan blackberry (*Rubus armeniacus*) and cutleaf blackberry (*Rubus lactiniatus*). Ground cover included Oregon grape (*Mahonia nervosa*), salal, red huckleberry, deer fern (*Blechnum spicant*), and bracken fern (*Pteridium aquilinum*)."

Opportunities to enhance and restore this ecosystem through invasive plant management and supplemental understorey planting would benefit the Site's ecology and habitat values.

Polygon D – Young Deciduous Forest

Polygon D occurred in the southwest portion of the Site and was characterized by a dense young seral stand dominated by red alder (Photograph 4). This area occurred on a steep slope, had been disturbed in recent years, and was left to naturally regenerate. The pole/sapling forest was very dense with a poorly developed understorey. Understorey species that did occur included sword fern, salmonberry, bracken fern, and significant amounts of the invasive Himalayan blackberry, particularly around the outer fringe of the polygon. Other invasives included foxglove (*Digitalis purpurea*), Scotch broom (*Cytisus scoparius*), and a variety of non-native grass species.

Notable opportunities to enhance this area is present through invasive plant management and natural successional ecological restoration strategies, which might include thinning of the seral species and planting of pioneering coniferous trees.

4.3 Invasive Plants

PGL's vegetation ecologist and a field assistant conducted a preliminary invasive plant species baseline inventory on July 4 and 5, 2016. This survey was limited to the Northern Property (Figure 3). Project surveys focused on species listed as noxious weeds under the provincial *Weed Control Act*, as well as target species identified by the Invasive Species Council of Metro Vancouver and as "BC's most unwanted invasive plants" by the Invasive Species Council of BC.

Given the size of the area and general characteristics of invasive plant species, the baseline inventory utilized an intuitive, biased approach that targeted sites along access corridors where invasive plant species would most likely be present. The access corridors within the study area were surveyed primarily focusing on roadsides, trails, and watercourses.

A zigzagging transect, starting at the terminus of Ridge Mountain Drive, following approximately 1.5km of trails and watercourses was completed in the eastern portion of the Northern Property. A second transect, approximately 1km, starting at the terminus of Wyndham Crescent, following watercourses and trails ending at the terminus of North Charlotte Road was completed in the western portion of the Northern Property.

As shown in Figure 3, several invasive plant species were confirmed. As expected, the highest concentration of invasive plant occurrences and diversity was present along the access corridors. The further away from the access corridors, the less frequent invasive plant species occurrences were observed.

The 2016 baseline observations of invasive plant species occurrences included:

- Significant infestations of Himalayan blackberry with interspersed occurrences of cutleaf blackberry along access corridors, trails, and watercourses, and at forest edges and clearings throughout the Northern Property;
- Sporadic occurrences of English holly (*Ilex aquifolium*);
- Hairy cat's ear (*Hypochaeris radicata*), foxglove (*Digitalis purpurea*), and reed canarygrass (*Phalaris arundinaceae*) along access corridors, forest edges and clearings with full to partial sun;
- Hawkweeds (*Hieracium sp.*) at the terminus of Ridge Mountain Drive, a single orange hawkweed (*Hieracium aurantiacum*) along the trail west of the terminus of Ridge Mountain Drive, and a spotted hawkweed (*Hieracium maculatum*) along the BC Hydro right-of-way north of the Northern Property;
- Infestations of tansy ragwort (*Senecio vulgaris*) along the trail south of the terminus of North Charlotte Road; (Photograph 5);
- Single occurrences of annual sow-thistle (*Sonchus oleraceus*) (Photograph 6) and scentless chamomile (*Matricaria perforata*) mixed with other invasive species at the terminus of Ridge Mountain Drive;
- Single occurrences of St. John's wort (*Hypericum perforatum*) and scotch broom (*Cytisus scoparius*) mixed with other invasive species along a trail, south of the terminus of North Charlotte Road;
- Oxeye daisy (*Leucanthemum vulgare*) adjacent to the Northern Property on the boulevard between Ridge Mountain Drive and North Charlotte Road;
- Field bindweed (*Convolvulus arvensis*) and tufted vetch (*Vicia cracca*) mixed with other invasive species at the terminus of Wyndham Crescent; and
- An infestation of yellow archangel (*Lamium galeobdolon*) and English ivy (*Hedera helix*) west of the terminus of Wyndham Crescent, which appeared to increase in density moving downwards from top of bank towards the residential properties on Wyndham Crescent.

Noxious weeds under the *BC Weed Control Act* that were observed during the 2016 assessment include tansy ragwort, annual sow thistle, and scentless chamomile.

The 2023 reconnaissance assessment conducted in November did not include an invasive species inventory. In addition, the 2023 reconnaissance was completed during the winter season when many annual species would be difficult to detect. However, perennial invasive species (e.g., English holly, cutleaf blackberry, Himalayan blackberry) were confirmed onsite during the visit (Photograph 7). These invasives species were also confirmed to occur in the Southern Property in the MFVT along the access roads, water seepages, and trails.

4.4 Aquatic Ecosystem

PGL's biologists conducted overview watercourse surveys in May 2016 in the Northern Property portion of the Site to determine RAPR applicability and stream presence under the WSA. The 2023 reconnaissance confirmed our 2016 observations and did not detect any significant changes (Figure 4). The 2023 field reconnaissance was conducted during a dry period of winter (<1.0mm of rainfall over 7 days), which allowed for a preliminary assessment of watercourses differentiating those originating from groundwater and those more likely to only convey Site runoff.

As the Site is predominately forested/undeveloped, runoff that collects into modified and unmodified ephemeral watercourses are likely considered natural water supply and, therefore, are expected to be regulated under the WSA. Ephemeral reaches originating from Site runoff may be exempt under the WSA; however, a stream determination assessment and submission to the Ministry of Water Land and Resource Stewardship may need to be completed to confirm that the features do not qualify as a WSA stream.

The primary objective of PGL's reconnaissance assessment was to confirm known watercourses from previous 2016 assessments and to identify any new streams (as defined under the RAPR and WSA). It is noted that during the 2023 assessment, PGL only confirmed watercourses on the Northern Property. Time was not available to complete a watercourse presence/absence field review of the Southern Property. Satori's 2017 work, however, indicated that no additional RAPR or WSA streams were identified on the Southern Property. They recommended that a ground-truthing exercise be completed in the near future for the Southern Property, ideally during wet/rainy conditions.

Streams qualifying under the RAPR regulation identified onsite will require additional consideration in planning work and will trigger the need to submit a detailed RAPR assessment report to the province to confirm applicable Streamside Protection Enhancement Areas (SPEAs) for the municipal rezoning application. Permitting under the WSA is not required at this time as there is no proposed development at this stage of the project. The SPEAs presented in this report are preliminary and were determined based on the detailed RAPR assessment methodology.

The watercourse ranged from constructed drainage ditches, natural slopeside drainages, and watercourses/seepages fed by groundwater. Some of these watercourses connected to downstream watercourses while other features were disconnected and dissipated into the ground.

4.4.1 Watercourse 1

Watercourse 1 (WC1) Reach 1 is a natural stream that was fed by a watercourse offsite along North Charlotte Drive that flows into an above-ground PVC culvert (Photographs 10 and 11). The watercourse is defined as a rocky channel with regular flows that discharges into a roadside drainage pipe on the northwest side of Wyndham Crescent.

Watercourse 1 (WC1) Reach 2 and Reach 3 are constructed of Deltalok geotextile bags and lined with geofabric with plastic mesh (Photographs 8 and 9). These reaches are constructed to capture and direct slopeside runoff down access corridors. This watercourse was dry during the 2023 Site visit suggesting it is ephemeral in nature likely only flowing during periods of heavy rain. Watercourse 1 is regulated under the WSA and RAPR.

4.4.2 Watercourse 2

Watercourse 2 (WC2) is a disconnected/isolated, constructed watercourse that collects upland and surface runoff from an old access road. The watercourse terminates onsite where water infiltrates to ground (Photograph 19).

Because this watercourse is isolated and not connected surficially to downstream, fish habitat, the provincial RAPR does not apply. However, this watercourse is assumed to be a stream under the WSA definition due to the natural water supply from Site runoff. Should the Project require infilling, relocating and any other changes in and about this stream, then a WSA Change Approval or Notification may be required. A stream determination assessment may need to be completed first in order to confirm the applicability of the WSA.

4.4.3 Watercourse 3

Watercourse 3 (WC3) was observed within the Northern Property as a disconnected feature that had a mix of flowing and dry reaches. The watercourse is broken into five reaches, defined by changes in drainage direction and/or source of water supply (groundwater vs. upslope runoff).

WC3 is regulated under the WSA but not RAPR, as this feature is isolated and does not flow surficially into downstream fish habitat. Ephemeral reaches of WC3 have the potential of a WSA exemption and are indicated in Table A, but would likely require a stream determination assessment to confirm.

4.4.4 Watercourse 4

Watercourse 4 (WC4) was recorded in PGL's 2016 survey. The feature is isolated with areas of depressions but negligible evidence of channelization (Photograph 18). The feature was observed to be dry in 2023 and it is anticipated that upslope runoff during high periods of rain fills the depressions where water is retained and infiltrates to ground. Due to the lack of channelization and connection to downstream fish habitat, WC4 does not provide evidence that it is a natural watercourse and is not considered a stream under the WSA or RAPR.

4.4.5 Watercourse 5

Watercourse 5 (WC5) was an ephemeral pond located south of WC1 Reach 1 (Photograph 20). A PVC pipe had been installed in the pond presumably to drain the feature during periods of high flow (Photograph 21). Due to the connectivity to the storm system through the PVC pipe, the ephemeral pond qualifies as a stream under RAPR. The pond was a historically constructed three-in-line sediment detention pond that discharged to WC1, as described in the PGL's 2016 report. The pond is considered ephemeral, as it was observed dry during the summer of 2017, but has naturalized over time.

Given the presumed connectivity to WC1, the pond would be considered a stream under the RAPR. As the pond likely originates from Site runoff, it may or may not be considered a stream under the WSA. A stream determination assessment and submission to Ministry of Water Land and Resource Stewardship may be required to confirm the applicability of the WSA.

Table A: Watercourse 3 Reach Details

Reach	Flow Observed	Flow Direction	Water Source	Notes	Potential for WSA Exemption	Photographs
Reach 1	No; however, some sections had pooled stagnant water.	Drains south	Site runoff	The channel was predominately undefined and appeared to be a drainage feature that directs upland and access road runoff. The reach dissipates into the ground adjacent to an access road.	Yes	Photograph 12
Reach 2	Yes	The northern section of the reach drains south; the southern section of the reach drains north.	Site runoff	The channel had sections that were defined and had pooled water observed. Ground water supply observed at the convergence of Reach 4.	Yes	Photograph 13
Reach 3	Yes	Flows southwest, bends north, and bends west	Groundwater	WC3 Reach 3 originated from an upslope seepage, and eventually flowed west where it was observed to dissipate to ground.	No	Photograph 14 and 15
Reach 4	Yes	West	Groundwater	The channel originated from groundwater supply and flowed west downslope.	No	Photograph 16
Reach 5	No	South	Site runoff	Evidence of channelization from Site runoff.	Yes	Photograph 17

4.4.6 Fish Presence

Due to the isolated nature of WC2, WC3 and WC4, they are considered non-fish-bearing. WC5 drains into a vertical storm pipe that is not fish passable. WC1 discharges into a storm pipe at the northwest side of Wyndham Crescent that is assumed to eventually discharge into Mossom Creek, which is a fish-bearing watercourse. Based on general characteristics (steep slopes) and physical barriers to fish passage (perched culverts), WC1 is believed to be non-fish-bearing.

4.5 Wildlife and Wildlife Habitat

The Site is located within the Fraser Lowland Ecosection of the Coastal Western Hemlock biogeoclimatic zone that exhibits the greatest diversity of birds, amphibians, and reptiles in BC (Meidinger and Pojar, 1991). However, extensive urban and agriculture development in the Lower Mainland has displaced large mammals such as Roosevelt Elk (*Cervus elaphus roosevelti*), Grizzly Bear (*Ursus arctos*), and Grey Wolf (*Canis lupus*). Urban areas in the Lower Mainland support a variety of smaller native and introduced wildlife species. Native species that have adapted to urban habitats include Black Bear (*Ursus americanus*), the Black-tailed Deer (*Odocoileus hemionus columbianus*), Coyote (*Canis latrans*), Striped Skunk (*Mephitis mephitis*), and Raccoon (*Procyon lotor*).

The forested ecosystems onsite likely provide food, nesting, and/or denning habitat for a variety of wildlife. Many animals are wildlife-tree-dependent, and the trees observed onsite could provide habitat for raptors, woodpeckers, songbirds, bats, and other mammals. In addition, coarse woody debris (downed trees) and other forest floor litter (small branches, leaves, and other organic material) observed onsite represent good habitat for small mammals, amphibians, reptiles, and invertebrates. Coarse woody debris also provides feeding opportunities for insect-foraging wildlife. Standing water observed onsite may also provide breeding habitat for amphibians.

4.5.1.1 Wildlife Observations

Mammals

In 2016, Black-tailed Deer and Black Bear scat were observed during field surveys by PGL staff. During the 2023 Site visit, PGL staff observed both mammals onsite. Additionally, Satori reported signs of deer, coyote, cougar (*Puma concolor*), and Snowshoe Hare (*Lepus americanus washingtonii*) within the Site.

Avifauna

Breeding bird surveys were conducted at the end of May and end of June (May 30 and June 30, 2016). Surveys were conducted between 07:00 and 11:00 to observe birds during the most active period of the day, prior to high daytime temperatures. Field crew waited one minute after arriving at each survey location before beginning a five-minute point-count survey. All surveys were conducted within the Northern Property. All birds seen or heard within the five-minute survey period were recorded. Incidental observations outside of the five-minute survey, during the field reconnaissance in 2023 and observations by Satori are also documented in Table B. It is noted that no raptor nests have been observed during any of the field reviews.

Table B: Bird Observances within the Site from Breeding Bird Surveys, and Incidental Observations

Common Name	Scientific Name
American Crow	<i>Corvus brachyrhynchos</i>
American Robin	<i>Turdus migratorius</i>
Anna's Hummingbird	<i>Calypte anna</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Black-capped Chickadee	<i>Poecile atricapillus</i>
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Brown Creeper	<i>Certhia americana</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
Common Raven,	<i>Corvus corax</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Dusky Flycatcher	<i>Empidonax oberholseri</i>
Evening Grosbeak	<i>Coccothraustes vespertinus</i>
Flycatcher species (Empid)	<i>Empidonax</i> spp.
Golden-crowned Kinglet	<i>Regulus satrapa</i>
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>
Olive-sided Flycatcher	<i>Contopus cooperi</i>
Orange-crowned Warbler	<i>Vermivora celata</i>
Pacific Wren	<i>Troglodytes pacificus</i>
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>
Pine Siskin	<i>Carduelis pinus</i>
Purple Finch	<i>Haemorphous purpureus</i>
Red-breasted Nuthatch	<i>Sitta Canadensis</i>
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>
Red-eyed Vireo	<i>Vireo olivaceus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Rock Pigeon	<i>Columba livia</i>
Spotted Towhee	<i>Pipilo maculatus</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Townsend's Warbler	<i>Setophaga townsendi</i>
Varied Thrush	<i>Ixoreus naevius</i>
Warbling Vireo	<i>Vireo gilvus</i>
Western Tanager	<i>Piranga ludoviciana</i>
Wilson's Warbler	<i>Cardellina pusilla</i>
Yellow-rumped Warbler	<i>Setophaga coronata</i>

Amphibians

All watercourses onsite were assessed for amphibian values and amphibian presence during the May and June Site visits in 2016. Western Toad tadpoles (*Anaxyrus boreas*) were observed in the sediment detention ponds during both the May and June Site visits, along with larvae of Long-toed Salamander (*Ambystoma macrodactylum*). During the 2023, it was observed that the silt fence detention pond had been dissembled, and that isolated ponds remained (WC5). It is expected that the ponds could still provide suitable breeding habitat for Western Toad and Long-toed Salamander.

4.5.1.2 Wildlife Habitat

The Site presents habitat for wildlife including mammals, amphibians, and birds.

Mammals

Due to the Site's location adjacent to a large, relatively undisturbed expanse of mountain and forested habitat, the potential for wildlife to inhabit, forage on, or move through the Site is considered high. Black-tailed deer, Black Bear, and smaller mammals such as Douglas squirrel (*Tamiasciurus douglasii*) and a variety of mole, vole, and mouse species are likely to use the habitat for denning and foraging.

Amphibians

Amphibians and reptiles including salamander, newt, toad, frog, and garter snake species, also have the potential to inhabit wetter ecosystems occurring onsite. Amphibians present would likely use different habitats within the Site during different life phases.

Suitable breeding habitat was identified in WC3 and WC5 (i.e., ephemeral ponds). WC5 had previous records of amphibians, and WC3 presented high suitability in some reaches. WC3 was observed to be disconnected with a flatter slope than the other watercourses onsite. The isolated nature of WC3 provides for the creation of pools and slow-moving water features. Amphibians were not observed around WC3; however, seasonal sampling for egg masses has not been completed to date, but is recommended to confirm the use of WC3 by amphibians.

Reach 1 of WC1 also has potential for amphibian habitat (i.e., flowing water). The remaining reaches of WC1 were assessed as having inadequate breeding habitat for amphibians due to lack of flow and steep gradients.

Terrestrial habitat is used as summer range for adults and emergent juvenile amphibians. Suitable upland habitat may include fields, forests, meadows, and shrubs. Moist areas, particularly depressions, may be used during dry periods. Suitable upland amphibian habitat was observed in the forested areas adjacent to WC3 and WC5.

Wildlife Trees

Vegetation characteristics onsite included attributes that are expected to support foraging, nesting, and/or denning habitat for a variety of wildlife. Wildlife trees in different stages of decay were observed throughout and showed signs of feeding use (Photographs 22 and 23). Many of the wildlife and decayed trees were associated with logging and historical fires (Photograph 24). Trees on the property are expected to provide habitat for a variety of animals including raptors, woodpeckers, songbirds, bats, and other mammals.

Coarse woody debris and forest floor litter (e.g., small branches, leaves, and other organic material) was observed in all vegetation polygon types. These organic materials can provide habitat for small mammals, amphibians, reptiles, and invertebrates, as well as serve as foraging areas for other, larger wildlife species (Photograph 25).

While no raptor or Pileated woodpecker nests were observed, there is potential for them to nest within the Site, particularly in Polygon A and B due to the moderate amount of wildlife trees observed.

4.6 Species at Risk

BC's CDC compiles and shares data on at-risk plants, animals, and ecological communities in BC. PGL conducted a CDC search to identify federally and provincially listed Species at Risk potentially occurring on or around the Site (BC CDC, 2023). A list of at-risk ecological communities was also compiled. It is important to note that detailed surveys for at-risk wildlife and plants species (provincially listed and/or protected under the federal *Species at Risk Act*) or detailed Terrestrial Ecosystem Mapping was not completed at this stage. More detailed biophysical inventory work may be required in future planning and development stages.

4.6.1 Previously Recorded Species:

The CDC Internet Mapping Service was used to identify the presence/absence of known occurrences of species and ecosystems at risk on or within 2km of the Pinnacle Ridge lands (Figure 5). Historical non-sensitive (species information is publicly available) occurrences were identified including:

- Pacific Water Shrew (*Sorex bendirii*) – Historic records from 1894 to 1897 in the vicinity of Water Street, Turner Creek Drive and Forest Parkway. The buffer around the occurrences overlaps the southern section of the Site;
- Roell's brotherella (*Brotherella roellii*) – Critical habitat and record of a population observed within the riparian area of Mossom Creek, 1.6 km southwest of the Site; and
- Snowshoe Hare (*Lepus americanus washingtonii*) – Single occurrence recorded at road intersection of Sunnyside Road and Spence Way approximately 1.3 km northwest of the Site in March 2023.

Pacific Water Shrew

Pacific Water Shrew is protected under Schedule 1 of the *Species at Risk Act* (SARA) and is Red-listed in BC. Pacific water shrews predominantly inhabit riparian zones, particularly in smaller stream systems (e.g., those less than 10 metres wide), as well as various wetland categories (Zevit and Welstead, 2013). Given their specialization in aquatic environments, these shrews exhibit a strong preference for areas within 50m of the water's edge. Crucial elements of their habitat, both instream and in adjacent riparian zones, include high levels of structural diversity, minimal disturbance, and an abundance of invertebrate food sources. In addition to terrestrial invertebrates, their semi-aquatic lifestyle allows them access to a variety of benthic invertebrates, worms, and mollusks (Zevit and Welstead, 2013).

Given the ephemeral and isolated nature of the watercourses and limited structural diversity of the instream areas provided, habitat value for the Pacific water shrew onsite is likely low. However, a more detailed Site assessment and survey is recommended to confirm this preliminary observation.

Roell's brotherella

Roell's brotherella is listed as endangered under Schedule 1 of the SARA and is Blue-listed in BC. It is a moss that forms mats on rotten logs, stumps, and bases of trees in cool to moist mixed deciduous and conifer forest, usually at low elevations along valley margins. Most reports are from open, mixed coniferous and deciduous forest, on slopes, stream terraces, and swampy floodplains. Bigleaf maple and red alder are the preferred hardwood habitat and appears to be most common on rotting wood (Christy 1996). This moss species has not been observed onsite; however, suitable habitat does exist. If disturbance is proposed within riparian corridors, a more detailed presence/absence survey for this species is recommended to maintain compliance with applicable regulations and in keeping with best management practices.

Snowshoe Hare

The Red-listed Lower Mainland subspecies of the Snowshoe Hare is thought to occupy the lower mountains of the Coast Mountains, north of the Fraser River (Nagorsen, 2005). This species has been observed in undeveloped areas of the Lower Mainland and Fraser Valley. This species is primarily nocturnal and favours moist semi-open forests with clearings and thickets (McTaggart-Cowan and Guiguet 1965). Snowshoe hare pellets were detected within Polygon B during the field survey conducted by Satori in 2017. It is very likely that this species continues to use the Site for denning and foraging habitat.

4.6.2 Potentially Occurring Species

In addition to reviewing historical occurrence records, PGL has reviewed all provincially and federally at-risk species likely to occur within the general area using the BC Species and Ecosystems Explorer.

Animals, plants, and ecological communities of conservation concern potentially occurring on the Site are listed in Appendix 1. The lists provided are comprehensive based on searches using general, regional criteria; however, species whose range occurs outside of the project area and/or that prefer habitat conditions not likely provided by the Site are identified. Based on the ecosystems and vegetation communities present within the Site, there is a high likelihood of the following at-risk species to occur onsite.

Red-legged Frog

In addition to being listed as Special Concern on Schedule 1 of the SARA, the Red-Legged Frog (*Rana aurora*) is also listed on the provincial Blue List. Red-Legged Frogs in BC inhabit moist forests and forested wetlands. Typically, their breeding occurs in cool, shaded temporary ponds, where they affix their eggs to submerged woody debris or vegetation. Adult frogs frequently venture away from standing water to search for small insects or forest invertebrates. (Corkran and Thoms 1996).

Suitable habitat was identified onsite, particularly within and around WC5. This feature offered suitable breeding habitat with adjacent forests and CWD providing suitable cover and foraging habitat.

The Band-tailed Pigeon

The Band-tailed Pigeon (*Patagioenas fasciata*) is listed as a species of Special Concern under SARA and is provincially Blue-listed. The Band-tailed Pigeon is present across the Fraser Valley, commonly inhabiting various environments, including natural landscapes and human-made spaces

such as forest edges, clearings in mature coniferous, mixed, and deciduous forests, urban yards, parks, wooded groves, open bushland, and golf courses (Campbell et al. 1990). Typically, it is found in areas dominated by coniferous trees with a diverse range of structural and age classes (Keppie and Braun 2000).

No Band-tailed Pigeons were detected during the field program. However, suitable habitat for this species occurs throughout the forested portions of the Site.

Trowbridge's Shrew

The Trowbridge's Shrew (*Sorex trowbridgii*) is provincially Blue-listed. Trowbridge's Shrew use both riparian and non-riparian forest (Zuleta and Galindo-Leal 1994). In non-riparian forests, this species prefers areas characterized by a high moisture regime. Essential components of their habitat encompass nutrient-rich soils, abundant decaying CWD and leaf litter on the forest floor (Nagorsen 1996). The presence of ground litter, woody debris, and shrub cover creates a secure environment suitable for tunneling and nesting.

The riparian habitat associated with the watercourses within the Site and generally dry forests provided poor habitat for Trowbridge's shrew.

5.0 ENVIRONMENTAL PLANNING OBJECTIVES

Using the information gathered from PGL's inventories, PGL has prepared environmental sensitivities maps, which are tools to spatially identify the relative environmental values in a defined study area and potential constraints to future development. The purpose of this exercise is to ultimately minimize potential impacts through avoidance of valuable areas at an early planning stage. The development planning team can use this as a guidance tool for avoiding sensitive areas where possible. Avoidance of sensitive areas during design will also result in fewer permitting requirements and/or potential project delays.

It is important to recognize that the sensitivities maps are provided at a coarse level of resolution, so the boundaries are not exact and may require refinement when the design and approvals processes require a higher level of detail. As such, the mitigation of environmental impacts is best achieved with an ongoing interactive planning process that is aligned with the steps of the development approvals process.

5.1 Environmental Sensitivities

Based on our desktop review and observations, PGL developed a series of discipline-specific maps for the Site including vegetation, streams, and wildlife in Figure 6, 7, and 8, respectively. Each discipline-specific map was colour-coded to identify areas that were considered to have environmental high, moderate, and low sensitivities. The broad classification categories are described below.

5.1.1 Methodology

Our methodology to develop environmental sensitivity maps was based on the following objectives:

- a. Terrestrial Ecosystems:
 - Highlight rare or sensitive ecosystems, forests, and trees of moderate and high retention value, key wildlife habitat, and wildlife corridors.

b. Wildlife

- Highlight habitat potentially suitable for species at risk or habitat for other protected wildlife.

c. Drainage Systems

- Highlight existing streams, ditches, and seeps regulated under RAPR and/or the WSA.

5.1.2 Sensitivity Mapping Results

The level of sensitivities associated with the ecosystem values onsite: watercourses, wildlife, and vegetation have been mapped (Figures 6, 7, and 8). The boundaries and attributes of the polygons correspond to the level of detail in the original data and may be refined if additional survey data is required or collected at a later date.

The sensitivity ratings highlight areas of value from an environmental perspective relative to the rest of the Site. It is important to note that higher-sensitivity areas are not necessarily “no work zones” but are rather associated with a requirement for more mitigation measures and greater permitting requirements should development be proposed within.

We have developed a scale to rank the environmental sensitivities. The three ranks are defined below.

- “Red-coded” – areas with important habitat that should be avoided where possible in preparing the Project development plan. An example would be watercourse and anticipated SPEAs;
- “Yellow-coded” – areas that have moderate ecosystem importance and are likely to require additional investigation to refine their boundaries. Development in these areas is expected to be able to proceed with caution, following further investigation and application of appropriate mitigation and best management practices; and
- “Green-coded” – all remaining areas. These areas possess lower habitat value. Development in these areas can proceed following existing legislation, regulations, guidelines, and accepted best-management practices.

The maps are a working document intended to convey information to project designers in the planning and design process to avoid or minimize environmental impacts.

6.0 ENVIRONMENTAL CONSTRAINTS/REGULATORY REQUIREMENTS

As described in the section above, PGL has determined areas of sensitivity that should be prioritized for environmental management through the development planning process. These sensitive areas are associated with environmental values including vegetation, watercourses, and wildlife and should be avoided for development. Additionally, these environmental values have regulatory requirements/best management practices, described below, that must be considered during the development planning.

Our specific recommendations for action in each section are identified in *blue italic text*.

6.1 Vegetation

6.1.1 Trees

The Site was predominately undeveloped with mature and regenerative forests.

- *If tree removal is required for the proposed development, a permit per the Village of Anmore Tree Management Bylaw No. 579-2018 may be required.*

6.1.2 Invasive Species

Invasive species observed throughout the Site predominately included Himalayan blackberry, cutleaf blackberry, and English holly along pathways and access roads. An invasive species inventory was conducted for the Northern Property of the Site, and noxious weeds that are regulated under the BC *Weed Control Act* were observed including tansy ragwort, annual sow thistle, and scentless chamomile.

- *A detailed invasive species inventory may be required in the Southern Property of the Site prior to the development phase during growing seasons when annual species are more likely detectable;*
- *An Invasive Plant Management Plan should be prepared prior to development to outline best management practices and removal protocols of the invasive species observed onsite; and*
- *Noxious species must be removed from the Site to comply with the provincial regulation.*

6.2 Wildlife

The Site has suitable habitat for wildlife including birds, amphibians, and some mammals. A number of these species require specific care during development.

6.2.1 Birds

Construction activities, particularly vegetation clearing, present a risk to active breeding bird nests within this timing window and should be avoided.

- *To avoid disturbance of migratory birds, nests, and eggs, vegetation clearing should be conducted outside the active breeding season from March 1 to August 31 (MOE, 2014);*
- *If vegetation removal is proposed within the nesting period, a Qualified Environmental Professional is required to conduct a survey of the work area no more than 48 hours prior to the anticipated start of vegetation removal to assess risk to breeding birds; and*
- *If active nests are identified, an appropriate no-disturbance buffer will be applied.*

6.2.1.1 Pileated Woodpeckers

Pileated Woodpeckers (*Dryocopus pileatus*) nests are protected year-round under the Migratory Birds Regulation, 2022. Nest cavities of Pileated Woodpeckers are used by other birds and mammals (i.e., secondary cavity nesters) in the years following the creation of the cavities. The nest cavities are therefore important components of the nest web, have year-round protection, and require proof of inactivity for 36 months before removal.

Large snag trees with Pileated Woodpecker foraging cavities were observed within Polygons A and B; however, no nesting cavities of Pileated Woodpecker were observed.

- ***Given the high suitability of nesting habitat onsite, an additional inspection to confirm the absence of Pileated Woodpecker nests should be completed in the near future.***

6.2.1.2 Eagles/Herons

Under the *Wildlife Act*, nests of an eagle, peregrine falcon, gyrfalcon, osprey, heron, and burrowing owl have year-round protection regardless of nest activity or inactivity.

Mature trees that provide suitable nesting habitat for eagles were present within the Site, although no raptor nests were observed. It is recommended that eagles have a quiet buffer of 1.5 tree lengths from the nest (MOE 2013), which is increased during breeding season.

- ***The presence/absence of eagle nests should be confirmed prior to the commencement of construction.***

6.2.2 Amphibians/Reptiles

PGL observed amphibians within the ephemeral ponds of WC5. The ponds present suitable breeding habitat with adjacent forested area providing terrestrial habitat for adult stages, and CWD for overwintering hibernation. Other watercourses, particularly WC3 with reaches that are fed by groundwater, also represent suitable breeding habitat for amphibians.

- ***If works are planned within any watercourses onsite, an amphibian survey and/or salvage must be conducted under the Wildlife Act prior to disturbance.***

6.3 Species at Risk

It is anticipated that works will be designed and conducted with the objective of minimizing impacts to terrestrial species-at-risk known to occur or potentially occur onsite. These include Pacific Water Shrew, Roell's brotherella, Snowshoe Hare, Red-legged Frog, Band-tailed Pigeon, and Trowbridge's Shrew.

- ***Before any development works begin, a detailed assessment of each species at risk with a likelihood to occur onsite may be required to determine presence/absence.***

6.4 Watercourses

Regulatory constraints for watercourses observed within the Site are described in the following section. Note that watercourses recorded onsite are based on observations from PGL staff during the 2016 watercourse survey and 2023 reconnaissance assessment. Satori did not record any additional watercourses on the Southern Property that qualify as streams under the WSA or RAPR.

- ***Prior to development, PGL recommends a field review of the Southern Property to confirm the absence of additional watercourses.***

6.5 Streams under the WSA

Several watercourses occur onsite. Some watercourses are connected to offsite streams, while others terminated onsite and infiltrated to ground. As the Site is predominately an undeveloped, forested area, runoff from the Site collecting and conveyed through modified or unmodified ephemeral watercourses is considered natural water supply. Therefore, it is our belief that the majority of onsite watercourses are regulated under the WSA. The exception to this was WC4, which showed negligible evidence of channelization and/or sign of a natural water supply.

- ***Works within the identified watercourses and riparian areas¹ should be avoided;***
- ***If proposed works are in/around watercourses and associated riparian areas, either a Notification of Approved Changes or a Change Approval Application under the WSA must be submitted; and***
- ***Ephemeral reaches may be exempt under the WSA; however, a stream determination assessment must be completed and may require submission to the Ministry of Water Land and Resource Stewardship to prove the WSA does not apply to these features.***

6.6 Streams Under the RAPR

WC1 and WC5 are the only watercourses onsite that are believed to be connected to downstream fish habitat. As such, these watercourses are defined as streams under the RAPR and require setbacks (i.e., SPEAs). Reach 2 and Reach 3 of WC1 are constructed drainage ditches and are anticipated to require 2m SPEAs based on the presumed absence of fish. Reach 1 is a natural stream and is anticipated to require a 10m SPEA measured horizontally from the high-water mark. WC5 is considered a wetland and will require a 15m SPEA on the north, east and west sides, and a 30m SPEA on the south side.

The anticipated SPEAs presented in this report are preliminary and were determined based on the detailed RAPR assessment methodology applied by PGL in 2016.

- ***Streams qualifying under the RAPR regulation onsite will require additional field surveys and preparation of a detailed RAPR assessment report for submission to the province. This process will confirm applicable SPEAs.***

6.7 Fish and Fish Habitat

Although detailed presence/absence surveys have not been completed, none of the watercourses within the Site are believed to be fish-bearing, nor are they believed to provide suitable fish habitat. However, WC1 and WC5 are believed to provide food and nutrients to downstream fish habitat.

- ***Appropriate management and mitigation strategies will be required to ensure that onsite watercourses do not convey deleterious substances to downstream fish habitat during construction; and***
- ***If the proposed development is planned to impact WC1 or WC5, a Request for Project Review will need to be prepared for submission to Fisheries and Oceans Canada, in addition to the Change Approval or Notification submission to the province under the WSA noted in Section 6.6.***

¹ For watercourses not regulated under RAPR, riparian area calculation will be consistent with RAPR detailed methods, however the setbacks are not submitted to the province for confirmation.

7.0 CONCLUSIONS AND RECOMMENDATIONS

PGL has determined high sensitivity areas that should be prioritized for environmental management through the development planning process. These areas largely comprise the valued habitats within intact forest stands and riparian areas. Additionally, PGL has identified environmental values including vegetation, watercourses, wildlife, and species at risk within the Site that have regulatory and/or best practices considerations.

As the project proceeds to development phases, an Environmental Impact Assessment (EIA) can build on the objectives established in the OEA and provide further detailed environmental management by:

- Completing additional biophysical inventory work to better understand and characterize environmental sensitivities;
- Evaluating the elements of the development plan that may affect the identified ecosystem components;
- Prescribing detailed measures required to mitigate or offset potential impacts to environmental values (e.g., enhance water management features onsite); and
- Prescribing required monitoring plans to verify the success of impact management.

An EIA is an iterative process that occurs through the preparation of the development plan and results in an EIA report that includes environmental commitments required to undertake development without significant effects. It is expected that the EIA may be required to fulfill development permit requirements with the Village of Anmore. A Construction Environmental Management Plan would be compiled based on conclusions in the EIA and recommended mitigation measures. It is expected that this OEA will meet the Village's current requirements for a rezoning application and will be used to advance future project assessments in preparation of a project-specific EIA.

8.0 STATEMENT OF LIMITATIONS AND CONDITIONS FOR REPORT

Three sets of limitations apply to the current assignment.

8.1 Complete Report

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to PGL by the Client, communications between PGL and the Client, and any other reports, proposals or documents prepared by PGL for the Client relative to the specific site described herein, all of which together constitute the Report.

In order to properly understand the suggestions, recommendations and opinions expressed herein, reference must be made to the whole of the Report. **PGL is not responsible for use by any part of portions of the Report without reference to the whole report.**

8.2 Basis of Report

The Report has been prepared for the specific site and purposes that are set out in the contract between PGL and the Client. The findings, recommendations, suggestions, or opinions expressed in the Report are only applicable to the site and purposes in relation to which the Report is expressly provided, and then only to the extent that there has been no material alteration to or variation from the information provided or available to PGL.

8.3 Use of the Report

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report or any portion thereof without PGL's written consent, and such use shall be on terms and conditions as PGL may expressly approve. Ownership in and copyright for the contents of the Report belong to PGL. Any use which a third party makes of the Report, is the sole responsibility of such third party. **PGL accepts no responsibility whatsoever for damages suffered by any third party resulting from use of the Report.**

9.0 CLOSING

We trust that this report meets your needs. If you have any questions, please contact Chloe Slomowitz and Keven Goodearle at 604-719-1429 and 604-895-7646, respectively.

Respectfully submitted,

PGL ENVIRONMENTAL CONSULTANTS

Per:



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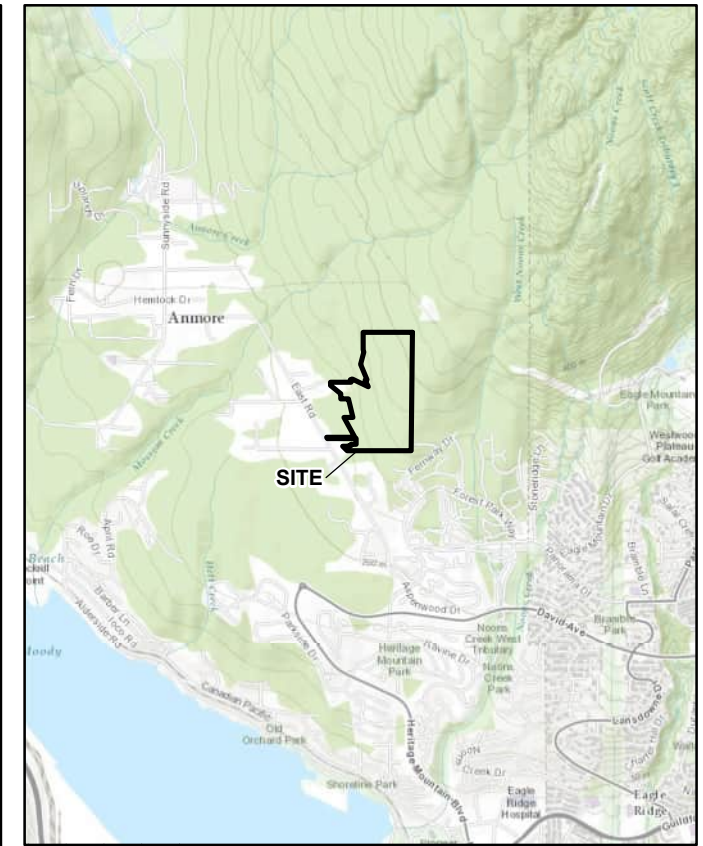
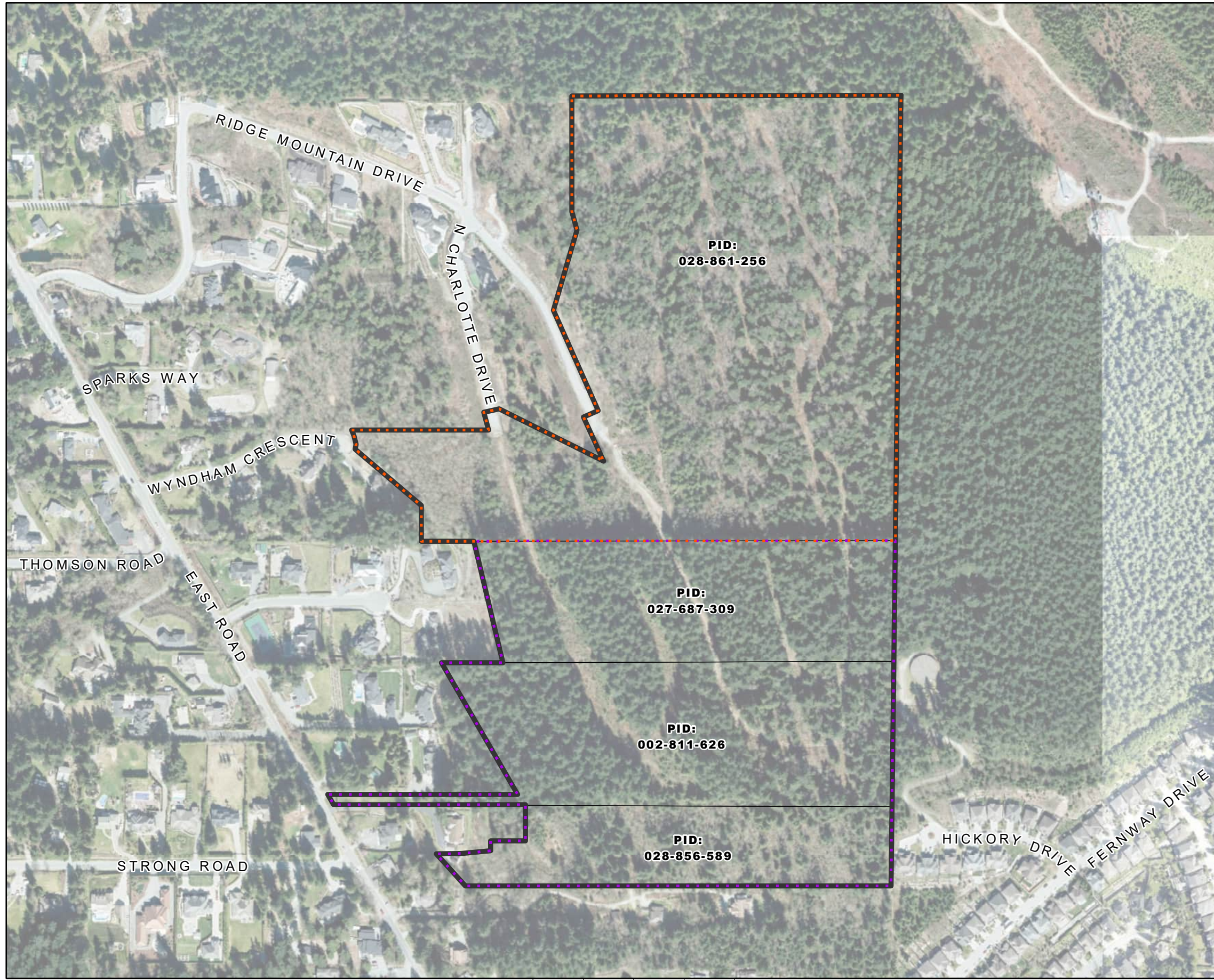
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Figures



0 1 km ESRI base map, 2023




-  Site Boundary
-  Northern Property
-  Southern Property
-  Lot Boundary

SITE LOCATION

Pinnacle Ridge, Anmore, BC

**PINNACLE RIDGE HILLSIDE LANDOWNERS
C/O THE GELLER GROUP**

	File No.:	Dwg No.:	FIGURE
	7030-02.01	0010	
Date:	Drawn by:		
DEC 2023	TCM		

Parcel boundary and site features are approximate and are presented for discussion purposes only.

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2021 ESRI base image, 2023.
NAD 1983 UTM Zone 10N



- Site Boundary
- Polygon A - Regenerative Forest Type
- Polygon B - Mature Forest Type
- Polygon C - Riparian Forest Type
- Polygon D - Young Deciduous Forest Type

VEGETATION POLYGONS

Pinnacle Ridge, Anmore, BC

**PINNACLE RIDGE HILLSIDE LANDOWNERS
C/O THE GELLER GROUP**

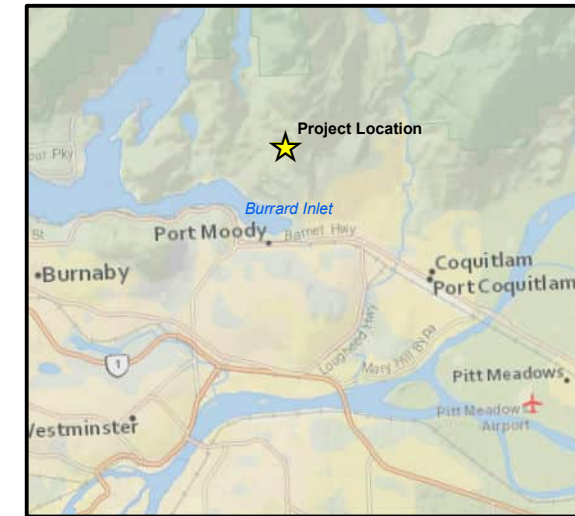
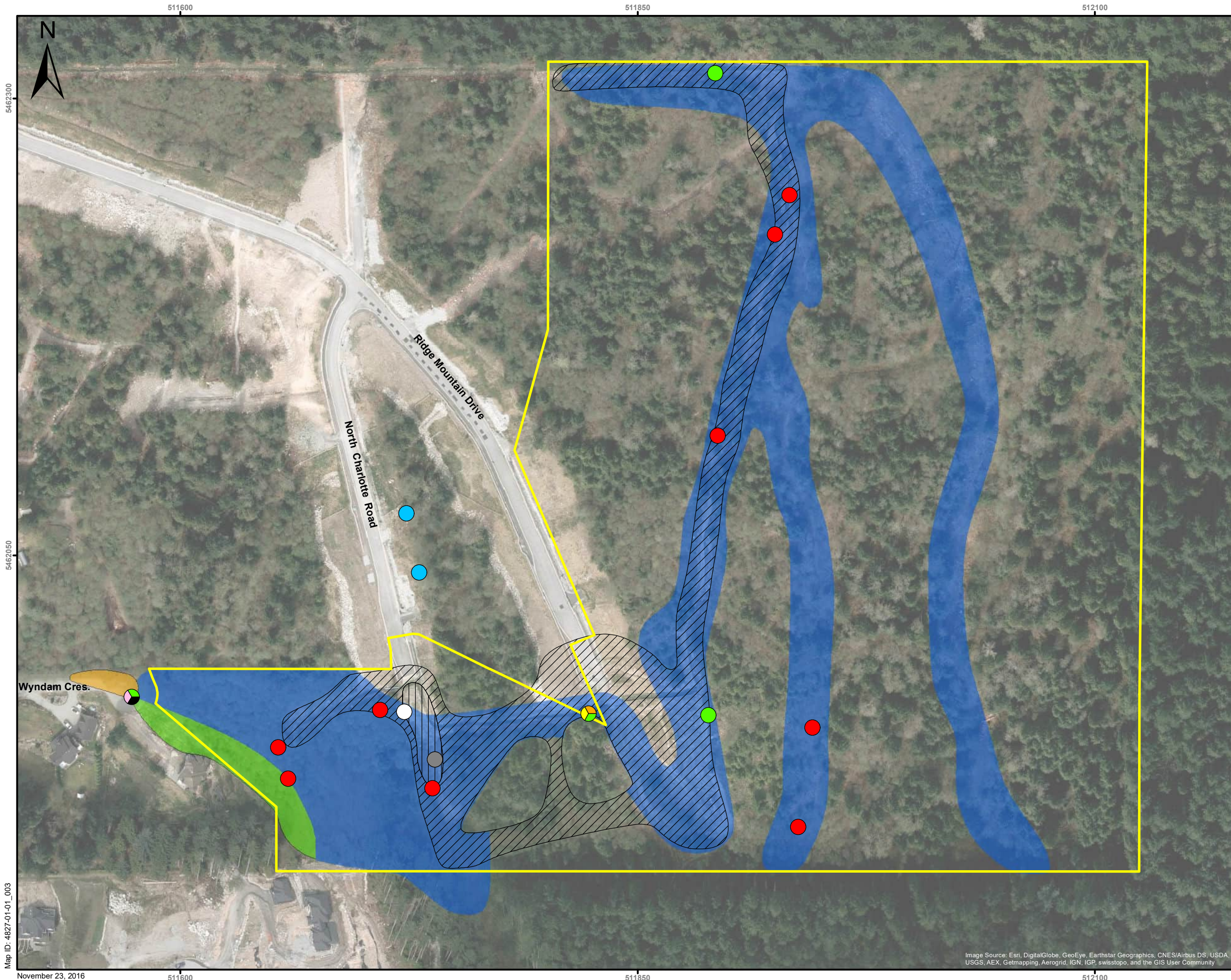
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2021 ESRI base image, 2023.
NAD 1983 UTM Zone 10N

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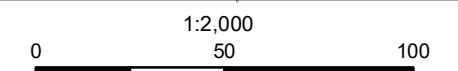
Pinnacle Ridge



Invasive Plant Occurrences

- Hairy cat's ear and Foxglove
- Tansy ragwort
- Bindweed / Himilayan blackberry
- Himalayan blackberry
- English Ivy and Yellow archangel
- Property Boundary
- TV
- AST
- SC
- HW
- CEB
- TV
- RCG
- SJW
- SB
- OX

AST	<i>Sonchus oleraceus</i>	Annual sow thistle
SC	<i>Matricaria perforata</i>	Scentless chamomile
HCE	<i>Hypochaeris radicata</i>	Hairy cat's ear
HW	<i>Hieracium sp.</i>	Hawkweed sp.
HB	<i>Rubus armeniacus</i>	Himalayan blackberry
FG	<i>Digitalis purpurea</i>	Foxglove
CEB	<i>Rubus lactiniatus</i>	Cutleaf evergreen blackberry
SJW	<i>Hypericum perforatum</i>	St. John's wort
TV	<i>Vicia cracca</i>	Tufted vetch
BW	<i>Convolvulus arvensis</i>	Bindweed
RCG	<i>Phalaris arundinaceae</i>	Reed canarygrass
LAM	<i>Lamium galeobdolon</i>	Yellow archangel
EI	<i>Hedera helix</i>	English ivy
SB	<i>Cytisus scoparius</i>	Scotch broom
TR	<i>Senecio vulgaris</i>	Tansy ragwort
Ox	<i>Leucanthemum vulgare</i>	Oxeye daisy



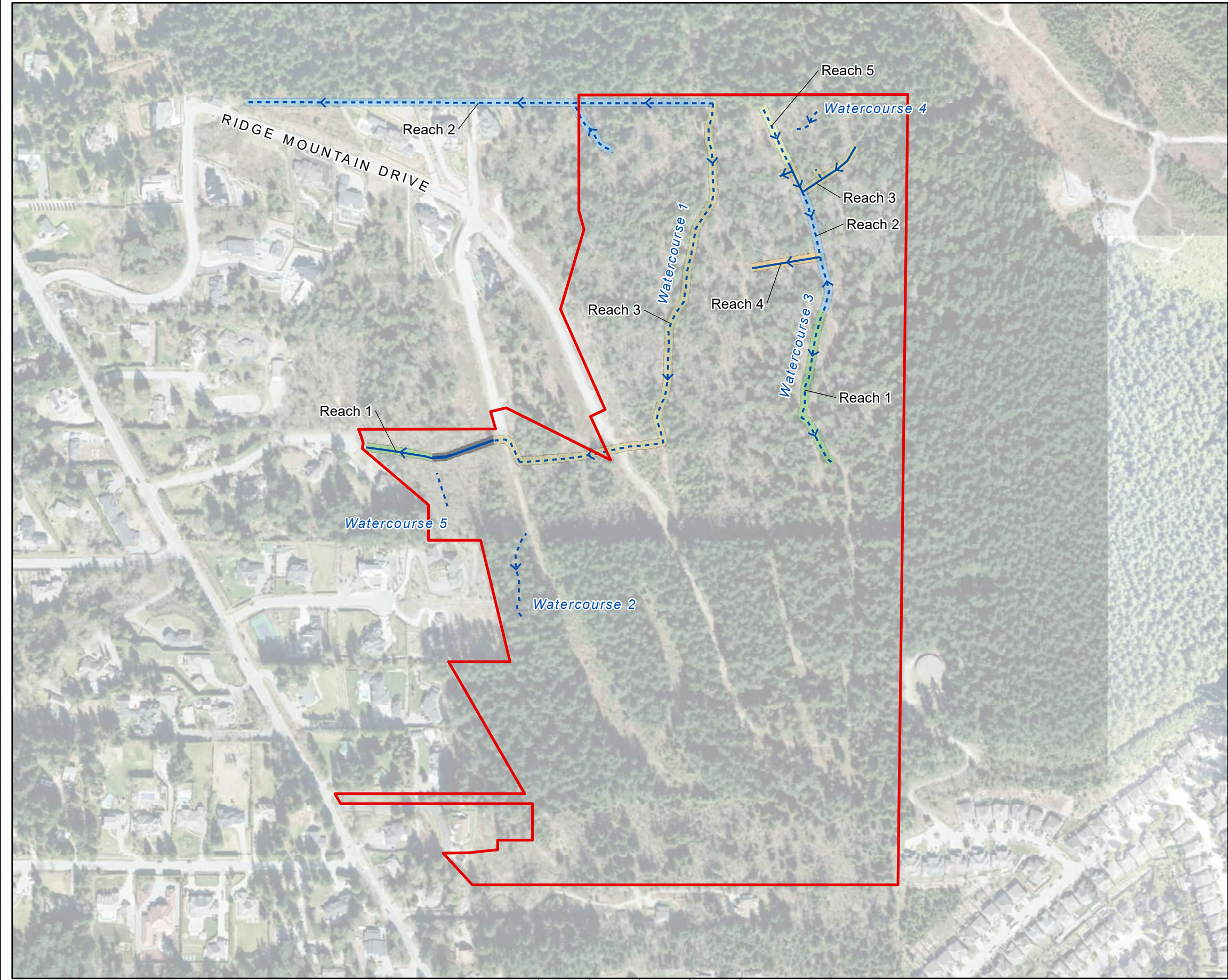
Metres

Coordinate System: NAD 1983 UTM Zone 10N



Figure 3

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Parcel boundary and site features are approximate and are presented for discussion purposes only.

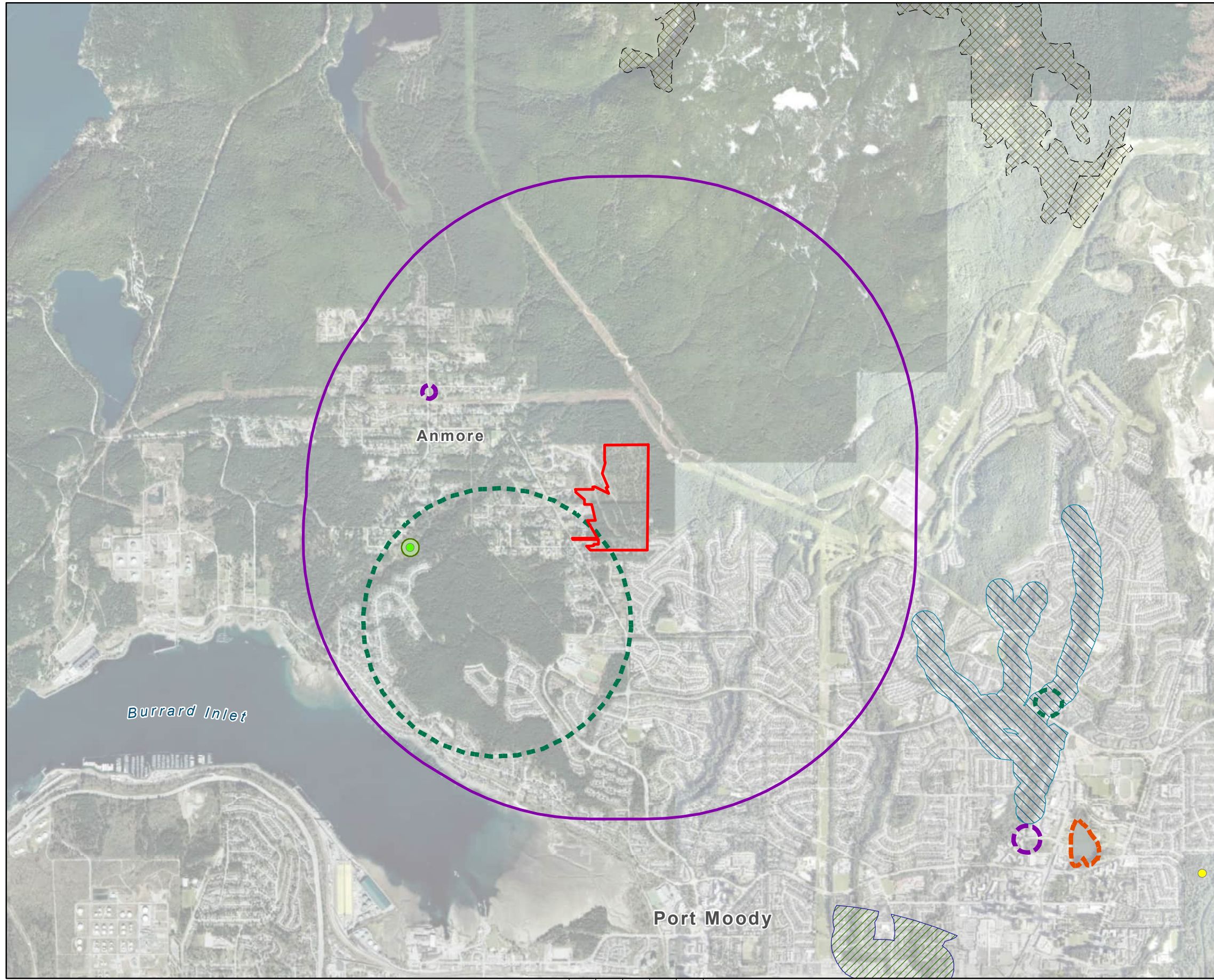
0 1:4,000 200 m

2021 ESRI base image, 2023. NAD 1983 UTM Zone 10N



- Site Boundary
- Watercourse (Flow Direction)**
- ← Permanent with Groundwater Supply
- - ← Ephemeral, Supplied by Slope Runoff
- ▬ Pipe

WATERCOURSES ON-SITE			
Pinnacle Ridge, Anmore, BC			
PINNACLE RIDGE HILLSIDE LANDOWNERS C/O THE GELLER GROUP			
	File No.:	Dwg No.:	FIGURE 4
	7030-02.01	0040	
Date:	DEC 2023	Drawn by:	TCM



- Site Location
- 2km Buffer
- Critical Habitat for Federally-Listed Species at Risk**
- Roell's Brotherella Moss
- Pacific Water Shrew
- Spotted Owl caurina subspecies
- Western Painted Turtle Pacific Coast population
- Species and Ecosystems at Risk - Occurrences**
- Pacific Water Shrew
- Painted Turtle - Pacific Coast Population
- Snowshoe Hare, washingtonii subspecies
- Oregon Forestsnail
- Roell's brotherella

CRITICAL HABITAT AND SPECIES AT RISK OCCURENCES

Pinnacle Ridge, Anmore, BC

PINNACLE RIDGE HILLSIDE LANDOWNERS C/O THE GELLER GROUP

	File No.:	Dwg No.:	FIGURE
	7030-02.01	0050	
	Date:	Drawn by:	
	DEC 2023	TCM	5

Parcel boundary and site features are approximate and are presented for discussion purposes only.

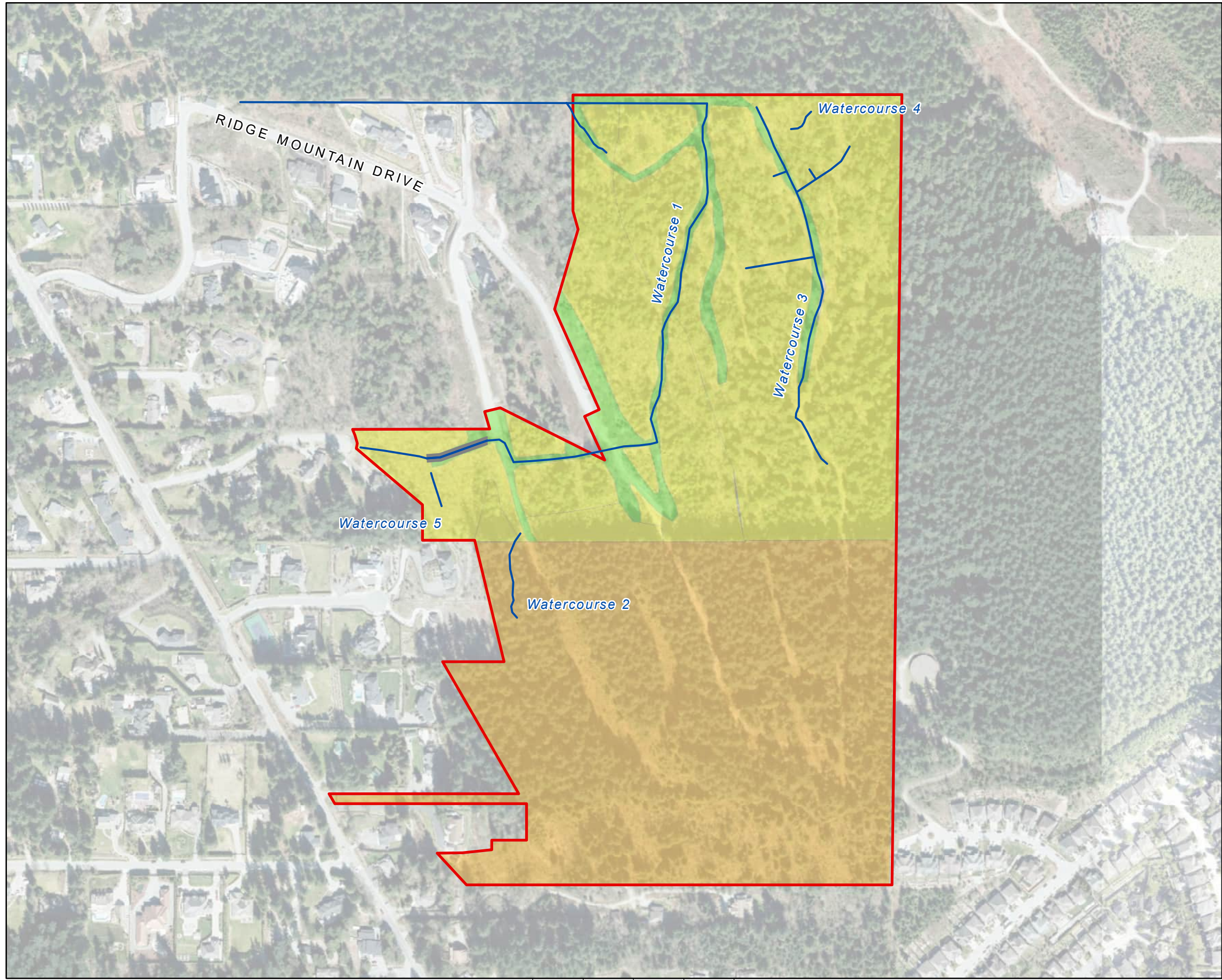
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2021 ESRI base image, 2023. NAD 1983 UTM Zone 10N

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Pencil

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Parcel boundary and site features are approximate and are presented for discussion purposes only.

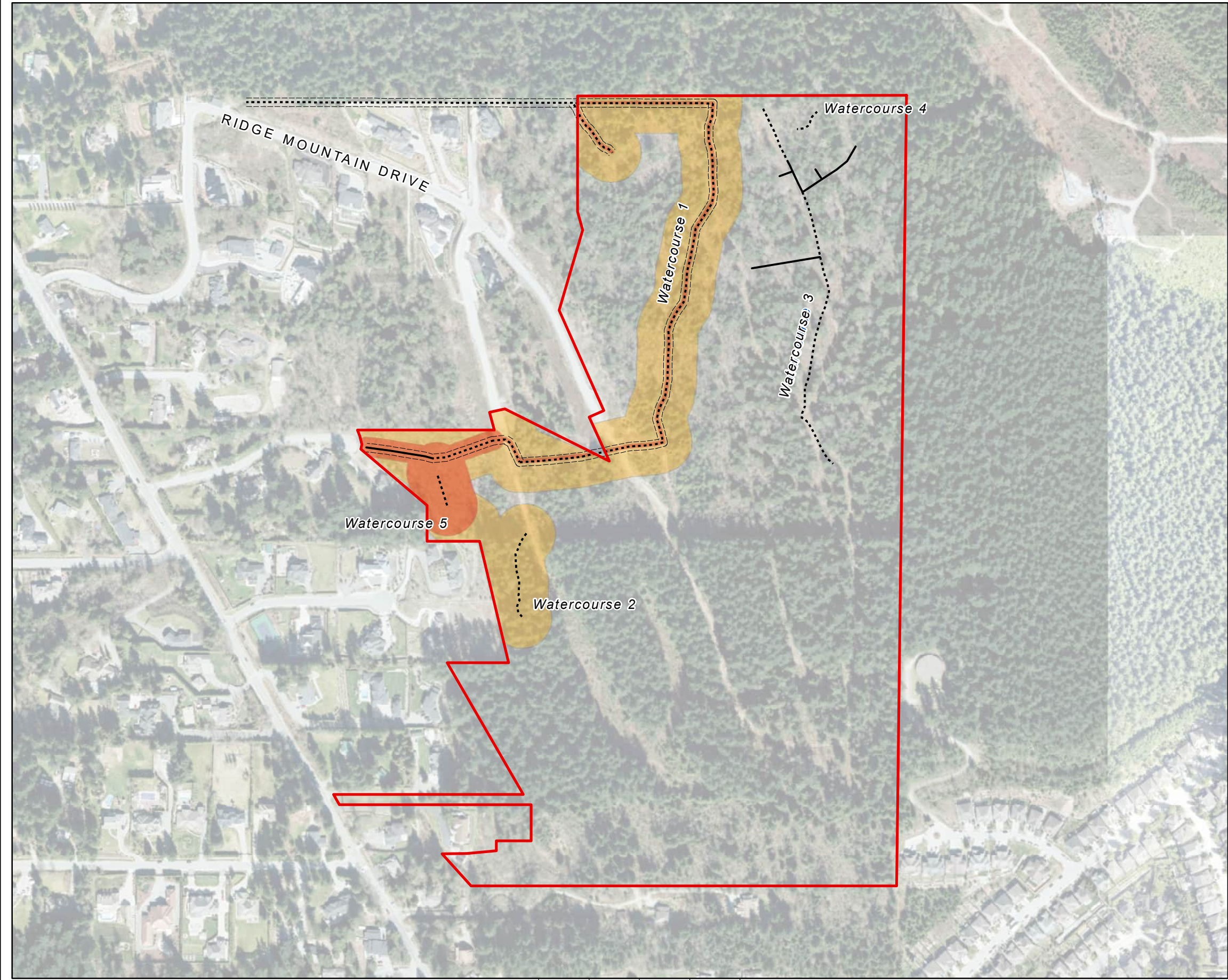
2021 ESRI base image, 2023. NAD 1983 UTM Zone 10N



- Site Boundary
- Pipe
- Vegetation Constraints**
- High Vegetation Values (Mature, Intact Forest with Rare Plant Communities)
- Moderate Vegetation Values (Young to Mature Forest with Rare Plant Communities and Recent Disturbances)
- Low Vegetation Values (Heavily Disturbed)

VEGETATION SENSITIVITIES			
Pinnacle Ridge, Anmore, BC			
PINNACLE RIDGE HILLSIDE LANDOWNERS C/O THE GELLER GROUP			
	File No.:	Dwg No.:	FIGURE
	Date:	Drawn by:	
	7030-02.01	0060	6
	DEC 2023	TCM	

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Parcel boundary and site features are approximate and are presented for discussion purposes only.

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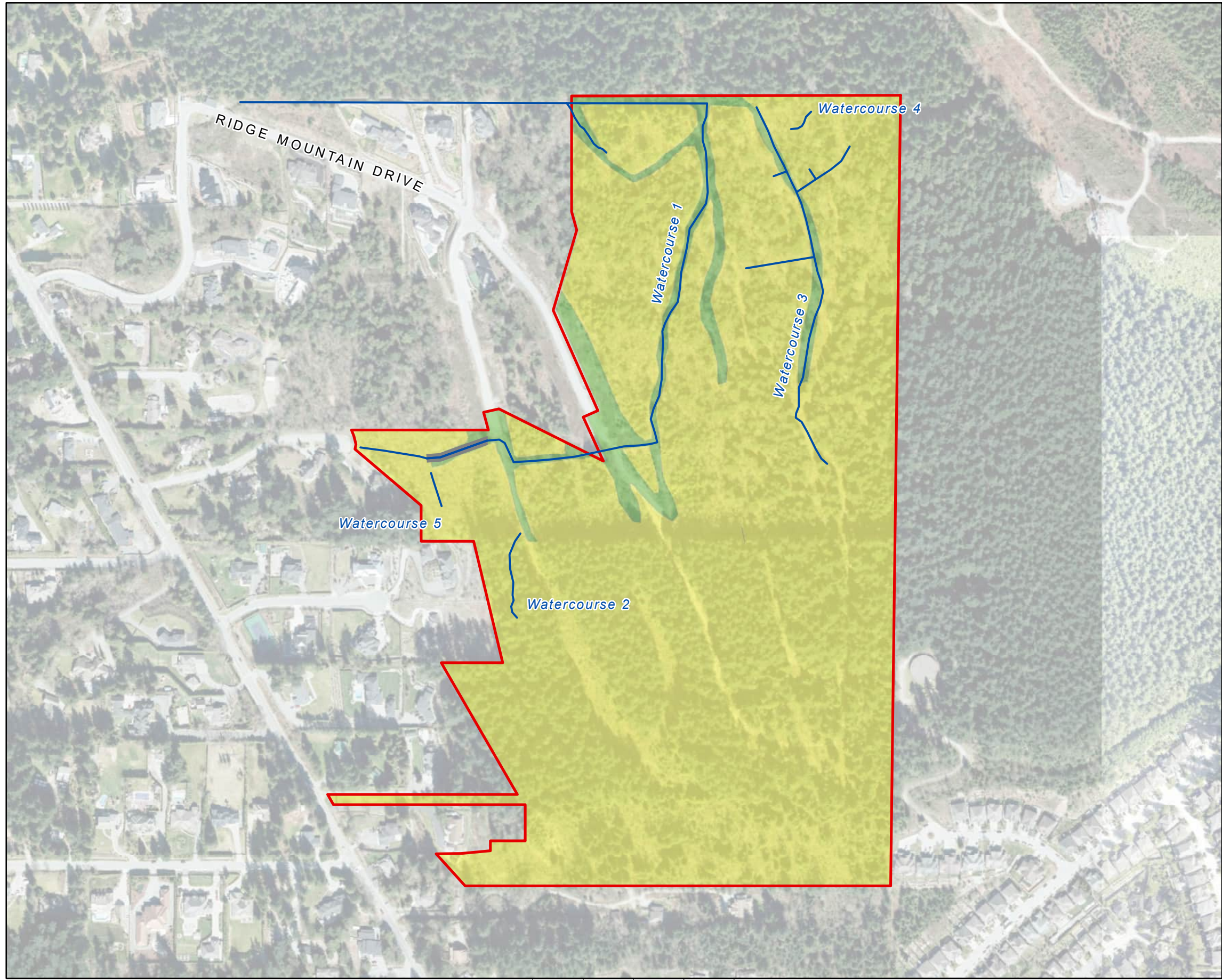
2021 ESRI base image, 2023. NAD 1983 UTM Zone 10N



- Site Boundary
 - Anticipated SPEA Setback
 - Potential Riparian Habitat Value (30m RAR Assessment)
- Watercourse Constraints**
- RAPR
 - Streams Regulated Under the WSA
 - Streams Regulated Under WSA with Possible Exemption

WATERCOURSE CONSTRAINTS			
Pinnacle Ridge, Anmore, BC			
PINNACLE RIDGE HILLSIDE LANDOWNERS C/O THE GELLER GROUP			
	File No.:	Dwg No.:	FIGURE
	7030-02.01	0070	
Date:	DEC 2023	Drawn by:	TCM
			7

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Parcel boundary and site features are approximate and are presented for discussion purposes only.

2021 ESRI base image, 2023. NAD 1983 UTM Zone 10N



- Site Boundary
- Pipe
- Wildlife Habitat Constraints**
- Medium Potential for Wildlife Habitat Constraint (Further Assessments Required Before Development)
- Low Potential for Wildlife Habitat

WILDLIFE SUITABILITY			
Pinnacle Ridge, Anmore, BC			
PINNACLE RIDGE HILLSIDE LANDOWNERS C/O THE GELLER GROUP			
	File No.:	Dwg No.:	FIGURE 8
	7030-02.01	0080	
Date:	DEC 2023	Drawn by:	TCM

Appendix 1
Ecosystems and SAR Tables

Table 1
Animal Species at Risk Potentially Occurring Onsite
Pinnacle Ridge Hillside Landowner, PGL File 7030-01.02

Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Accipiter gentilis laingi</i>	Northern Goshawk, <i>laingi</i> subspecies	Vertebrate Animal	birds	Red	Threatened	Threatened	CDF; CWH	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Alpine/Tundra / Krummholtz / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - frequent use	Queen Charlotte Goshawks tend to nest in maturing-to-old mesic, coniferous stands (Manning et al. 2004). On Vancouver Island, these stands are typically dominated by Douglas-fir (<i>Pseudotsuga menziesii</i>) and western hemlock (<i>Tsuga heterophylla</i>) (McClaren 2003), while on the Queen Charlotte Islands, western hemlock is dominant (Chytky and Dhanwant 1999b). In general, nest stands are characterized by: 1) >45 years old (structural stages 5-7); 2) multi-layered canopies; 3) structurally diverse; 4) canopy closure 50-85%; 5) in areas of larger sized trees; 6) on the lower 2/3 of slopes; 7) on slopes with gradients <40 degrees; 8) where snags and coarse woody debris are present; 9) typically not along "hard edges"; and 10) not near urban areas (Iverson et al. 1996; Daw et al. 1998; McClaren 2003; BC Minist. of Water, Land and Air Protection 2004; Manning et al. 2004).
<i>Acipenser medirostris</i>	Green Sturgeon	Vertebrate Animal	ray-finned fishes	Blue	Special Concern	Special Concern	CDF; CWH	Ocean / Eelgrass Beds / Obligate ; Ocean / Intertidal Marine / Obligate ; Ocean / Kelp Bed / Obligate ; Ocean / Marine Island / Obligate ; Ocean / Pelagic / Obligate ; Ocean / Reefs / Obligate ; Ocean / Sheltered Waters - Marine / Obligate ; Ocean / Subtidal Marine / Obligate	
<i>Acipenser transmontanus</i>	White Sturgeon	Vertebrate Animal	ray-finned fishes	No Status	Endangered / Threatened	Endangered	BG; CDF; CWH; ICH; IDF; MS; PP; SBS	Lakes / Lake / Unknown ; Lakes / Pond/Open Water / Unknown ; Ocean / Eelgrass Beds / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - occasional use ; Ocean / Kelp Bed / Facultative - occasional use ; Ocean / Marine Island / Facultative - occasional use ; Ocean / Pelagic / Facultative - occasional use ; Ocean / Reefs / Facultative - occasional use ; Ocean / Sheltered Waters - Marine / Facultative - occasional use ; Ocean / Subtidal Marine / Facultative - occasional use ; Other Unique Habitats / Estuary / Unknown ; Stream/River / Stream/River / Obligate	Although most British Columbia sturgeon live in large rivers, several populations are either restricted to large lakes or spend a certain amount of time within them. For example, certain individuals in the upper Kootenay River migrate to Kootenay Lake in the late autumn to spend the winter at great depths (Apperson and Anders 1991), and groups are often seen basking near the surface of Williams Lake or Stuart Lake in the spring (Cadden pers. comm. 1991, Legget, pers. comm. 1991). In the upper Kootenay River of B.C., Idaho and Montana, mature sturgeon utilized flowing water from 0.03 to 0.61 m/s, with a mode of 0.24 m/s (Apperson and Anders 1991). The same fish utilized depths of 3-30 m in the river, with a mode of 9 m; in Kootenay Lake they moved between 10 and 100.5 m, with a bimodal mode of about 55 and 90 m. Females used significantly deeper water than males during winter, and both sexes used significantly deeper water in winter than in spring or summer (Apperson and Anders 1991).
<i>Acipenser transmontanus</i> pop. 4	White Sturgeon (Lower Fraser River Population)	Vertebrate Animal	ray-finned fishes	Red	Threatened		CDF; CWH; IDF	Ocean / Eelgrass Beds / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Kelp Bed / Facultative - frequent use ; Ocean / Marine Island / Facultative - frequent use ; Ocean / Pelagic / Facultative - frequent use ; Ocean / Reefs / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Stream/River / Stream/River / Obligate	The Lower Canyon section of the Fraser River downstream of Boston Bar has confined narrow channels with high velocities and turbulent, upwelling flows with exposed substrate, large boulders and rapids. Lower velocity sections of depositional areas are distributed sporadically downstream to Yale. The Fraser River below Yale exhibits a low gradient braided channel with a prevalence of large sidechannels, marshes, and backwater sloughs. The substratum in this area is more depositional than in the Lower Canyon section, with higher concentrations of fine sediment and small gravel (R.L. & L. Environmental Services Ltd. 2000). In the lower section of the river, Perrin <i>et al.</i> (1999, 2000) found evidence of spawning in sidechannels with substrates of gravel, cobble and sand; in the mainstem site boulder and cobble predominated; flows were mainly laminar with near-bed velocities averaging 1.7 m/s. Most eggs and larvae were collected at water depths between 3.0 and 4.5 m and at velocities of > 1.5 m/s for eggs, and 0.5 to 1.5 m/s for larvae. Juveniles (< 1 m in length) are often found in the lower reaches of tributaries, large backwaters, sidechannels and sloughs.
<i>Actinemys marmorata</i>	Northwestern Pond Turtle	Vertebrate Animal	turtles	Red	Extirpated	Extirpated	CWH	Lakes / Lake / Unknown ; Lakes / Pond/Open Water / Unknown ; Stream/River / Stream/River / Unknown ; Wetland / Marsh / Unknown ; Wetland / Swamp / Unknown	
<i>Aechmophorus occidentalis</i>	Western Grebe	Vertebrate Animal	birds	Red	Special Concern	Special Concern	BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBPS; SBS	Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use	
<i>Aeronautus saxatalis</i>	White-throated Swift	Vertebrate Animal	birds	Blue			BAFA; BG; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS; SBS	Lakes / Lake / Unknown ; Rock/Sparsely Vegetated Rock / Cliff / Unknown ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Unknown ; Rock/Sparsely Vegetated Rock / Talus / Unknown ; Stream/River / Stream/River / Unknown	
<i>Allogona townsendiana</i>	Oregon Forestsnail	Invertebrate Animal	gastropods	Red	Endangered	Endangered	CDF; CMA; CWH; ESSF; MH	Forest / Mixed Forest (deciduous/coniferous mix) / Obligate	In low-elevation mixed-wood and deciduous forests, typically dominated by Bigleaf Maple; usually a dense cover of low herbaceous vegetation is present (COSEWIC 2002a).
<i>Ammospiza nelsoni</i>	Nelson's Sparrow	Vertebrate Animal	birds	Red	Not at Risk		BWBS; CWH	Grassland/Shrub / Meadow / Facultative - occasional use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Wetland / Bog / Obligate ; Wetland / Fen / Obligate ; Wetland / Marsh / Obligate ; Wetland / Swamp / Obligate	

**Table 1
Animal Species at Risk Potentially Occurring Onsite
Pinnacle Ridge Hillside Landowner, PGL File 7030-01.02**

Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Anarta edwardsii</i>	Edwards' Beach Moth	Invertebrate Animal	insects	Red	Endangered	Endangered	CDF; CWH		Found in sparsely-vegetated sandy beach and beach dune habitats including sandy beaches adjacent to salt marshes. Substrates are medium-grained sand with vegetation cover from 5-35% (COSEWIC 2009). Throughout its range, coastal populations tend to be concentrated in island complexes and inlets rather than on exposed, high-energy outer beaches (COSEWIC 2009).
<i>Anaxyrus boreas</i>	Western Toad	Vertebrate Animal	amphibians	Yellow	Special Concern	Special Concern	BG; BWBS; CDF; CWH; ESSF; ICH; IDF; PP; SBS; SWB	Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Riparian / Gravel Bar / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Springs / Warm Spring / Facultative - occasional use ; Stream/River / Stream/River / Facultative - frequent use ; Wetland / Bog / Obligate ; Wetland / Fen / Obligate ; Wetland / Marsh / Obligate ; Wetland / Swamp / Obligate	Western Toads have been observed in a variety of aquatic and terrestrial habitats. They breed in shallow, littoral zones of lakes, temporary and permanent pools and wetlands, bogs and fens, and roadside ditches (i.e., toads may be found in all lacustrine and palustrine habitats); tadpoles associate with benthic habitats. In northern BC and the Yukon, Western Toads have been observed using geothermal springs and surrounding tufa/soils for breeding and hibernacula (Slough 2004). In addition, like many amphibian species, toads utilize riparian areas. Lotic habitats with little to no flow are suitable for toads. Small, moist depressions may be used for rehydration (toads can absorb water through their 'pelvic patch') (Green and Campbell 1984; Davis 2000). Toads utilize a variety of terrestrial habitats in BC, including all forest and woodland types, shrubland/chaparral, savanna, cropland/hedgerow, grassland/herbaceous cover, old fields, and suburban/orchard. Hibernacula are located in areas with loose soils and burrows. Toads have been observed using downed wood for cover in recent clearcuts (E. Wind, pers. comm.). Western Toads one of few amphibians found at high elevations (> 3,000 m). Climate change may impact western toads in northern regions of BC where populations are dependent on areas of high snow accumulation, that lack permafrost, to survive through winter (Cook 1977).
<i>Aneides vagrans</i>	Wandering Salamander	Vertebrate Animal	amphibians	Blue	Special Concern	Special Concern	CDF; CWH	Forest / Conifer Forest - Moist/wet / Unknown ; Grassland/Shrub / Shrub - Logged / Unknown ; Grassland/Shrub / Shrub - Natural / Unknown ; Riparian / Riparian Forest / Unknown ; Rock/Sparsely Vegetated Rock / Talus / Unknown	
<i>Aplodontia rufa</i>	Mountain Beaver	Vertebrate Animal	mammals	Yellow	Special Concern	Special Concern	CDF; CWH; ESSF; MH; MS	Agriculture / Cultivated Field / Unknown ; Agriculture / Hedgerow / Unknown ; Agriculture / Pasture/Old Field / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Krummholtz / Unknown ; Forest / Conifer Forest - Dry / Unknown ; Forest / Conifer Forest - Mesic (average) / Unknown ; Forest / Conifer Forest - Moist/wet / Unknown ; Forest / Mixed Forest (deciduous/coniferous mix) / Unknown ; Grassland/Shrub / Meadow / Unknown ; Grassland/Shrub / Shrub - Logged / Unknown ; Grassland/Shrub / Shrub - Natural / Unknown ; Other Unique Habitats / Avalanche Track / Unknown ; Riparian / Riparian Forest / Unknown ; Stream/River / Stream/River / Unknown ; Subterranean / Sub-soil / Obligate	There are few specific data on the habitat requirements of <i>A. r. rufa</i> in British Columbia. Based on Cosco (1980), Gyug (2000), and Ransome (2003) this subspecies is associated with coniferous, mixed and Red Alder forests on moist slopes or hillsides near small streams or seeps. Humid sites with a dense understory are ideal. An important requirement is deep soils suitable for excavating burrow systems and tunnels. Although tunnels may be in wet soils, the nest sites are located above the water table. Various studies (Carraway and Verts 1993) have shown that this species reaches highest densities in early to mid seral stages.
<i>Ardea herodias fannini</i>	Great Blue Heron, <i>fannini</i> subspecies	Vertebrate Animal		Blue	Special Concern	Special Concern	CDF; CWH	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Ocean / Eelgrass Beds / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Marine Island / Facultative - frequent use ; Ocean / Reefs / Facultative - occasional use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Other Unique Habitats / Beach / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - frequent use ; Other Unique Habitats / Vernal Pools/Seasonal Seeps / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - occasional use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	Habitat keywords copied from species record.
<i>Argia emma</i>	Emma's Dancer	Invertebrate Animal	insects	Blue			CWH; IDF	Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Stream/River / Stream/River / Obligate	Along rivers, creeks and sometimes wave-washed lake beaches (Cannings 2002b).
<i>Argia vivida</i>	Vivid Dancer	Invertebrate Animal	insects	Blue	Special Concern	Special Concern	BG; CWH; ICH; IDF; PP	Springs / Cold Spring / Obligate ; Springs / Hot Spring / Obligate ; Springs / Warm Spring / Obligate ; Stream/River / Stream/River / Obligate	Associated with cool or hot springs (Cannings 2002b).
<i>Ascapus truei</i>	Coastal Tailed Frog	Vertebrate Animal	amphibians	Yellow	Special Concern	Special Concern	CWH; ESSF; ICH; IDF; MH; MS	Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Grassland/Shrub / Meadow / Facultative - frequent use ; Riparian / Riparian Forest / Obligate ; Stream/River / Stream/River / Obligate	

Table 1
Animal Species at Risk Potentially Occurring Onsite
Pinnacle Ridge Hillside Landowner, PGL File 7030-01.02

Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Asio flammeus</i>	Short-eared Owl	Vertebrate Animal	birds	Blue	Threatened	Special Concern	BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBPS; SBS; SWB	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use	
<i>Bartramia longicauda</i>	Upland Sandpiper	Vertebrate Animal	birds	Red			BG; BWBS; CDF; CWH; ICH; IDF; SBPS; SBS; SWB	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - occasional use	
<i>Botaurus lentiginosus</i>	American Bittern	Vertebrate Animal	birds	Blue			BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBPS; SBS	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Riparian / Riparian Herbaceous / Unknown ; Wetland / Marsh / Obligate	
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	Vertebrate Animal	birds	Blue	Threatened	Threatened	CDF; CWH; MH	Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Lakes / Lake / Facultative - occasional use ; Ocean / Kelp Bed / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - occasional use ; Stream/River / Stream/River / Facultative - occasional use	
<i>Branta bernicla</i>	Brant	Vertebrate Animal	birds	Blue			BWBS; CDF; CWH; IDF; SBPS	Ocean / Eelgrass Beds / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Kelp Bed / Facultative - occasional use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - occasional use	
<i>Buteo lagopus</i>	Rough-legged Hawk	Vertebrate Animal	birds	Blue	Not at Risk		BAFA; BG; BWBS; CDF; CWH; ESSF; ICH; IDF; IMA; MS; PP; SBPS; SBS; SWB	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Butorides virescens</i>	Green Heron	Vertebrate Animal	birds	Blue			BG; CDF; CWH; ICH; IDF; PP; SBS	Anthropogenic / Urban/Suburban / Facultative - occasional use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Calcarius pictus</i>	Smith's Longspur	Vertebrate Animal	birds	Blue			BAFA; BG; BWBS; CDF; CMA; CWH; IDF; MS; PP; SBS; SWB	Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Tundra / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use	

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Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Calidris canutus</i>	Red Knot	Vertebrate Animal	birds	Blue	Threatened	Threatened	CDF; CWH	Ocean / Intertidal Marine / Facultative - occasional use ; Other Unique Habitats / Beach / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - occasional use ; Other Unique Habitats / Sand Dune / Facultative - occasional use	
<i>Callophrys eryphon sheltonensis</i>	Western Pine Elfin, <i>sheltonensis</i> subspecies	Invertebrate Animal	insects	Red			CDF; CWH	Alpine/Tundra / Krummholtz / Unknown ; Grassland/Shrub / Shrub - Natural / Unknown ; Wetland / Bog / Facultative - frequent use	
<i>Callophrys johnsoni</i>	Johnson's Hairstreak	Invertebrate Animal	insects	Red	Special Concern		CDF; CMA; CWH	Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use	
<i>Callophrys mossii mossii</i>	Moss' Elfin, <i>mossii</i> subspecies	Invertebrate Animal	insects	Red			CDF; CWH	Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Obligate ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Obligate ; Rock/Sparsely Vegetated Rock / Talus / Obligate	Habitat keywords copied from species record.
<i>Cardellina canadensis</i>	Canada Warbler	Vertebrate Animal	birds	Blue	Special Concern	Threatened	BWBS; CDF; CWH	Forest / Conifer Forest - Dry / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Shrub - Logged / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - occasional use	
<i>Carychium occidentale</i>	Western Thorn	Invertebrate Animal	gastropods	Blue			CDF; CWH	Forest / Mixed Forest (deciduous/coniferous mix) / Obligate	In low elevation forests in rich, relatively undisturbed leaf litter; usually dominated by Bigleaf maple (Forsyth 2004).
<i>Catostomus</i> sp. 4	Salish Sucker	Vertebrate Animal	ray-finned fishes	Red	Threatened	Threatened	CWH		Found only in streams in British Columbia.
<i>Cercyonis pegala incana</i>	Common Wood-nymph, <i>incana</i> subspecies	Invertebrate Animal	insects	Red			CDF; CWH	Agriculture / Pasture/Old Field / Facultative - frequent use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - occasional use	Habitat keywords copied from species record.
<i>Cervus elaphus roosevelti</i>	Roosevelt Elk	Vertebrate Animal	mammals	Blue			CWH; MH	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Logged / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Other Unique Habitats / Avalanche Track / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Riparian / Gravel Bar / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	Habitat keywords copied from species record.

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<i>Charina bottae</i>	Northern Rubber Boa	Vertebrate Animal	reptiles	Yellow	Special Concern	Special Concern	BG; CWH; ICH; IDF; PP	Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Unknown ; Forest / Mixed Forest (deciduous/coniferous mix) / Unknown ; Grassland/Shrub / Antelope-brush Steppe / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Unknown ; Rock/Sparsely Vegetated Rock / Talus / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use ; Subterranean / Sub-soil / Unknown	
<i>Chlosyne hoffmanni</i>	Hoffman's Checkerspot	Invertebrate Animal	insects	Red			CMA; CWH; ESSF; MS	Forest / Conifer Forest - Dry / Facultative - frequent use ; Grassland/Shrub / Meadow / Obligate	
<i>Chondestes grammacus</i>	Lark Sparrow	Vertebrate Animal	birds	Blue			BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBPS; SBS	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Grassland/Shrub / Antelope-brush Steppe / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Grassland/Shrub / Sagebrush Steppe / Facultative - frequent use	
<i>Chordeiles minor</i>	Common Nighthawk	Vertebrate Animal	birds	Blue	Special Concern	Special Concern	BG; BWBS; CDF; CWH; ESSF; ICH; IDF; MH; MS; PP; SBPS; SBS; SWB	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Antelope-brush Steppe / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - frequent use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Riparian / Gravel Bar / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Chrysemys picta</i>	Painted Turtle	Vertebrate Animal	turtles	No Status	Threatened / Special Concern	Threatened / Special Concern	BG; CDF; CWH; ICH; IDF; MH; PP; SBS	Anthropogenic / Industrial / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - frequent use ; Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Riparian / Gravel Bar / Obligate ; Riparian / Riparian Forest / Obligate ; Riparian / Riparian Herbaceous / Obligate ; Riparian / Riparian Shrub / Obligate ; Wetland / Bog / Obligate ; Wetland / Fen / Obligate ; Wetland / Marsh / Obligate ; Wetland / Swamp / Obligate	
<i>Chrysemys picta</i> pop. 1	Painted Turtle - Pacific Coast Population	Vertebrate Animal	turtles	Red	Threatened	Threatened	CDF; CWH; MH	Anthropogenic / Industrial / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - frequent use ; Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Riparian / Gravel Bar / Obligate ; Riparian / Riparian Forest / Obligate ; Riparian / Riparian Herbaceous / Obligate ; Riparian / Riparian Shrub / Obligate ; Wetland / Bog / Obligate ; Wetland / Fen / Obligate ; Wetland / Marsh / Obligate ; Wetland / Swamp / Obligate	
<i>Cicindela hirticollis</i>	Hairy-necked Tiger Beetle	Invertebrate Animal	insects	Blue			BAFA; BG; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS; SBS	Other Unique Habitats / Beach / Obligate	

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<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Vertebrate Animal	birds	Yellow	Special Concern	Special Concern	BG; BWBS; CDF; CWH; ESSF; ICH; IDF; MH; MS; PP; SBPS; SBS; SWB	Anthropogenic / Urban/Suburban / Facultative - frequent use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - occasional use	
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	Vertebrate Animal	birds	Red			BG; CDF; CWH; ICH; PP	Agriculture / Hedgerow / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - frequent use ; Wetland / Swamp / Facultative - occasional use	
<i>Coenonympha californica insulana</i>	Common Ringlet, <i>insulana</i> subspecies	Invertebrate Animal	insects	Red			CDF; CWH	Agriculture / Pasture/Old Field / Facultative - frequent use ; Forest / Conifer Forest - Dry / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use	Habitat keywords copied from species record.
<i>Contia tenuis</i>	Common Sharp-tailed Snake	Vertebrate Animal	reptiles	Red	Endangered / Threatened	Endangered	CDF; CWH	Forest / Conifer Forest - Dry / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Garry Oak Coastal Bluffs / Unknown ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - frequent use ; Subterranean / Caves / Obligate ; Subterranean / Sub-soil / Obligate	There is no unifying description of Sharp-tailed Snake habitat. They seem to occur in a variety of habitats from relatively open Garry Oak meadows to relatively open Douglas-fir stands. Egg-laying sites are thought to be on protected south facing slopes. The size of the slope can vary from the base of a stump to larger talus slopes. It appears that the snakes are moving into the forest in the winter (Engelstoft and Ovaska 1999), but little else is known about their winter habitat.
<i>Contopus cooperi</i>	Olive-sided Flycatcher	Vertebrate Animal	birds	Yellow	Special Concern	Special Concern	BWBS; CDF; CWH; ESSF; ICH; IDF; MH; MS; PP; SBPS; SBS; SWB	Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Lakes / Pond/Open Water / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Wetland / Bog / Facultative - occasional use ; Wetland / Fen / Facultative - occasional use ; Wetland / Swamp / Facultative - occasional use	
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat	Vertebrate Animal	mammals	Blue			BG; CDF; CWH; ICH; IDF; PP	Anthropogenic / Industrial / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - frequent use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Shrub - Logged / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - occasional use ; Subterranean / Caves / Obligate	
<i>Cottus aleuticus</i> pop. 1	Coastrange Sculpin, Cultus Population	Vertebrate Animal	ray-finned fishes	Red	Endangered	Threatened	CWH		Confined to the deeper waters of a low elevation montane lake. No information is available on the spawning sites of this fish; no stream spawning has been observed, perhaps because almost all tributary streams dry up near the lake in most summers (Ricker 1960).
<i>Cryptomastix devia</i>	Puget Oregonian	Invertebrate Animal	gastropods	Red	Extirpated	Extirpated	CDF; CWH	Forest / Mixed Forest (deciduous/coniferous mix) / Obligate ; Riparian / Riparian Forest / Unknown	In the US, it is a mature forest specialist; inhabits moist old-growth and late successional forests and riparian areas at low and mid elevation; in course woody debris and leaf litter (COSEWIC 2002b).

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<i>Cypseloides niger</i>	Black Swift	Vertebrate Animal	birds	Blue	Endangered	Endangered	BAFA; BG; CDF; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS; SBS; SWB	Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Obligate ; Stream/River / Stream/River / Facultative - frequent use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Danaus plexippus</i>	Monarch	Invertebrate Animal	insects	Red	Endangered	Special Concern	BG; CDF; CWH; ESSF; ICH; IDF; MS; PP	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - frequent use	
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle	Vertebrate Animal	turtles	Red	Endangered	Endangered	CWH	Ocean / Eelgrass Beds / Unknown ; Ocean / Intertidal Marine / Unknown ; Ocean / Kelp Bed / Unknown ; Ocean / Marine Island / Unknown ; Ocean / Pelagic / Unknown ; Ocean / Reefs / Unknown ; Ocean / Sheltered Waters - Marine / Unknown ; Ocean / Subtidal Marine / Unknown	
<i>Deroceras hesperium</i>	Evening Fieldslug	Invertebrate Animal	gastropods	Red	Data Deficient		CWH	Forest / Conifer Forest - Moist/wet / Obligate ; Forest / Mixed Forest (deciduous/coniferous mix) / Obligate	In two habitats: plant communities of the coastal fog belt and mature Douglas-fir forests; needs high shade (from fog or canopy), high humidity and complete plant coverage (Frest and Hawkes 2002b). Low-elevation, mixed-wood forests in Washington (Forsyth 2004)
<i>Dicamptodon tenebrosus</i>	Coastal Giant Salamander	Vertebrate Animal	amphibians	Blue	Threatened	Threatened	CWH	Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Riparian / Riparian Forest / Obligate ; Stream/River / Stream/River / Obligate	
<i>Dolichonyx oryzivorus</i>	Bobolink	Vertebrate Animal	birds	Red	Special Concern	Threatened	BG; BWBS; CDF; CWH; ICH; IDF; PP; SBS	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - occasional use	
<i>Enallagma clausum</i>	Alkali Bluet	Invertebrate Animal	insects	Blue			BAFA; BG; CDF; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS	Lakes / Pond/Open Water / Facultative - frequent use ; Other Unique Habitats / Alkali Ponds/Salt Flats / Facultative - frequent use	
<i>Entosphenus macrostomus</i>	Cowichan Lake Lamprey	Vertebrate Animal	Lampreys	Red	Threatened	Threatened	CWH		Lives in two oligotrophic freshwater lakes: one 34 km long with a mean depth of 51 m and a maximum depth of 150 m; the other 7 km long with a surface area of approximately 59 hectares. None have been found more than a few hundred metres upstream of the lake in the few creeks that have been examined (Beamish 1987, 2001). Aggregates and spawns in shallow gravelly areas located in the lakes or at the mouths of tributaries. Potential spawning habitat ranged from 20 cm to more than 2 m in depth; however, the full range of depth utilized was not determined as areas more than 15 cm deep were not easily studied (Beamish 1987, 2001).
<i>Epargyreus clarus californicus</i>	Silver-spotted Skipper, <i>californicus</i> subspecies	Invertebrate Animal	insects	Red			CDF; CWH		
<i>Eremophila alpestris strigata</i>	Horned Lark, <i>strigata</i> subspecies	Vertebrate Animal	birds	Red	Endangered	Endangered	CDF; CWH	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Other Unique Habitats / Beach / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Other Unique Habitats / Sand Dune / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - occasional use	Habitat keywords copied from species record.
<i>Erynnis propertius</i>	Propertius Duskywing	Invertebrate Animal	insects	Red			CDF; CMA; CWH; MH	Forest / Garry Oak Woodland / Obligate ; Forest / Mixed Forest (deciduous/coniferous mix) / Obligate ; Grassland/Shrub / Meadow / Obligate	

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<i>Euchloe ausonides insulanus</i>	Large Marble, <i>insulanus</i> subspecies	Invertebrate Animal	insects	Red	Extirpated	Extirpated	CDF; CWH	Agriculture / Pasture/Old Field / Unknown ; Forest / Deciduous/Broadleaf Forest / Unknown ; Grassland/Shrub / Grassland / Unknown ; Grassland/Shrub / Meadow / Unknown ; Other Unique Habitats / Sand Dune / Unknown	Habitat keywords copied from species record.
<i>Eumetopias jubatus</i>	Steller Sea Lion	Vertebrate Animal	mammals	Blue	Special Concern	Special Concern	CDF; CWH; MH	Ocean / Eelgrass Beds / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - occasional use ; Ocean / Kelp Bed / Facultative - frequent use ; Ocean / Marine Island / Obligate ; Ocean / Pelagic / Obligate ; Ocean / Reefs / Obligate ; Ocean / Sheltered Waters - Marine / Obligate ; Ocean / Subtidal Marine / Obligate	Marine
<i>Euphagus carolinus</i>	Rusty Blackbird	Vertebrate Animal	birds	Blue	Special Concern	Special Concern	BG; BWBS; CDF; CWH; ESSF; MS; PP; SBPS; SBS; SWB	Anthropogenic / Industrial / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Euphydryas editha taylori</i>	Edith's Checkerspot, <i>taylori</i> subspecies	Invertebrate Animal	insects	Red	Endangered	Endangered	CDF; CWH	Agriculture / Pasture/Old Field / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Other Unique Habitats / Vernal Pools/Seasonal Seeps / Obligate	<i>E.e.taylori</i> is known to occur in Garry oak and associated ecosystems although some populations are known from old clearcuts (approximately ten years old). The only known population in BC is from a regenerating clearcut logged in 2001 (J. Heron, pers. comm. 2007).
<i>Euphyes vestris</i>	Dun Skipper	Invertebrate Animal	insects	Blue	Threatened	Threatened	CDF; CMA; CWH; ESSF; IDF; IMA; MH; PP	Grassland/Shrub / Meadow / Obligate ; Other Unique Habitats / Vernal Pools/Seasonal Seeps / Facultative - frequent use	
<i>Falco mexicanus</i>	Prairie Falcon	Vertebrate Animal	birds	Red	Not at Risk		BG; BWBS; CDF; CWH; ESSF; ICH; IDF; MS; PP; SBS	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Alpine/Tundra / Tundra / Facultative - occasional use ; Grassland/Shrub / Antelope-brush Steppe / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Obligate	
<i>Falco peregrinus</i>	Peregrine Falcon	Vertebrate Animal	birds	No Status	Special Concern	Special Concern	BG; BWBS; CDF; CWH; ESSF; ICH; IDF; MS; PP; SBS; SWB		
<i>Falco peregrinus anatum</i>	Peregrine Falcon, <i>anatum</i> subspecies	Vertebrate Animal	birds	Red	Not at Risk		BG; BWBS; CDF; CWH; IDF; MS; PP; SBS	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Grassland/Shrub / Antelope-brush Steppe / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Other Unique Habitats / Alkali Ponds/Salt Flats / Facultative - occasional use ; Other Unique Habitats / Beach / Facultative - occasional use ; Riparian / Gravel Bar / Facultative - occasional use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	Anatum Peregrine Falcons typically nest on rock cliffs above lakes or river valleys where abundant prey is nearby. Interior populations are typically associated with wetland habitats that support a sufficient prey base. In the Okanagan valley, aeries have been reported as low as 6 m above a lake and high on cliffs that towered >260 m above the valley floor (Cannings et al. 1987). In the Lower Mainland, nests are on rock cliffs well back but above the Fraser River. In the Gulf Islands, nests are found on seaside cliffs (Cooper and Beauchesne 2003b).

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<i>Falco peregrinus pealei</i>	Peregrine Falcon, <i>pealei</i> subspecies	Vertebrate Animal	birds	Blue	Special Concern	Special Concern	CDF; CWH	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Grassland/Shrub / Meadow / Unknown ; Lakes / Lake / Facultative - occasional use ; Lakes / Pond/Open Water / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Marine Island / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Unknown ; Other Unique Habitats / Beach / Unknown ; Other Unique Habitats / Estuary / Unknown ; Other Unique Habitats / Mudflats - Intertidal / Facultative - frequent use ; Riparian / Gravel Bar / Unknown ; Riparian / Riparian Herbaceous / Unknown ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Unknown ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Marsh / Facultative - occasional use	Peale's Peregrine Falcon typically nests on ledges of rocky island cliffs, usually near seabird colonies. Occasionally, nests occur on mainland headland cliffs. A few nests occurred on grassy ledges on rock bluffs. More rarely, old nests of Pelagic Cormorants (<i>Phalacrocorax pelagicus</i>), Bald Eagles and Common Ravens have been used (Campbell et al. 1990).
<i>Falco rusticolus</i>	Gyrfalcon	Vertebrate Animal	birds	Blue	Not at Risk		BAFA; BG; BWBS; CDF; CWH; ICH; IDF; SBPS; SBS; SWB	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Tundra / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Fratercula cirrhata</i>	Tufted Puffin	Vertebrate Animal	birds	Blue			CDF; CWH	Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Ocean / Marine Island / Obligate ; Ocean / Pelagic / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Subterranean / Sub-soil / Obligate	
<i>Fratercula corniculata</i>	Horned Puffin	Vertebrate Animal	birds	Red			CDF; CWH	Grassland/Shrub / Meadow / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Ocean / Marine Island / Obligate ; Ocean / Pelagic / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Subterranean / Sub-soil / Facultative - frequent use	
<i>Fulmarus glacialis</i>	Northern Fulmar	Vertebrate Animal	birds	Red			CDF; CWH	Ocean / Eelgrass Beds / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - occasional use ; Ocean / Kelp Bed / Facultative - occasional use ; Ocean / Marine Island / Facultative - occasional use ; Ocean / Pelagic / Facultative - occasional use ; Ocean / Reefs / Facultative - occasional use ; Ocean / Sheltered Waters - Marine / Facultative - occasional use ; Ocean / Subtidal Marine / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Cliff / Obligate	
<i>Galba bulimoides</i>	Prairie Fossaria	Invertebrate Animal	gastropods	Blue			CDF; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP		

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<i>Galba dalli</i>	Dusky Fossaria	Invertebrate Animal	gastropods	Blue			BG; CDF; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP		
<i>Galba parva</i>	Pygmy Fossaria	Invertebrate Animal	gastropods	Blue			CWH; SBS	Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Wetland / Marsh / Obligate	On wet mud flats, lakeshores and riverbanks; in marshes; among vegetation submerged in shallow water; prone to leave the water (Clarke 1981).
<i>Gasterosteus aculeatus</i> pop. 2	Little Quarry Lake Benthic Threespine Stickleback	Vertebrate Animal	ray-finned fishes	Red	Threatened		CWHxm		
<i>Gasterosteus aculeatus</i> pop. 3	Little Quarry Limnetic Threespine Stickleback	Vertebrate Animal	ray-finned fishes	Red	Threatened		CWHxm		
<i>Glaucidium gnoma swarhi</i>	Northern Pygmy-Owl, <i>swarhi</i> subspecies	Vertebrate Animal	birds	Blue			CDF; CWH; MH	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Alpine/Tundra / Krummholtz / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	Habitat keywords copied from species record.
<i>Gulo gulo</i>	Wolverine	Vertebrate Animal	mammals	No Status	Special Concern	Special Concern	BAFA; BWBS; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; SBPS; SBS; SWB		
<i>Gulo gulo luscus</i>	Wolverine, <i>luscus</i> subspecies	Vertebrate Animal	mammals	Blue	Special Concern	Special Concern	BAFA; BWBS; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; SBPS; SBS; SWB	Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Krummholtz / Facultative - frequent use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Other Unique Habitats / Avalanche Track / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - occasional use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Bog / Facultative - occasional use ; Wetland / Fen / Facultative - occasional use ; Wetland / Marsh / Facultative - occasional use ; Wetland / Swamp / Facultative - occasional use	

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<i>Gulo gulo vancouverensis</i>	Wolverine, <i>vancouverensis</i> subspecies	Vertebrate Animal	mammals	Red	Special Concern	Special Concern	CMA; CWH; MH	Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Other Unique Habitats / Avalanche Track / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - occasional use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Bog / Facultative - occasional use ; Wetland / Fen / Facultative - occasional use ; Wetland / Marsh / Facultative - occasional use ; Wetland / Swamp / Facultative - occasional use	Habitat keywords copied from species record.
<i>Gyraulus crista</i>	Star Gyro	Invertebrate Animal	gastropods	Blue			BAFA; BG; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP		
<i>Haliotis kamtschatkana</i>	Northern Abalone	Invertebrate Animal	gastropods	Red	Endangered	Endangered	CDF; CWH	Ocean / Intertidal Marine / Facultative - occasional use ; Ocean / Kelp Bed / Obligate ; Ocean / Pelagic / Obligate ; Ocean / Reefs / Obligate ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Obligate	"Northern Abalone occur in a wide range of habitats from fairly sheltered bays to exposed coastlines in a patchy distribution on hard substrate in intertidal and shallow subtidal waters." (COSEWIC 2009). Primary substrate includes bedrock and/or boulders, with secondary substrate of sediment, sand, mud or shell. Some cobble may be present, but with little or no gravel. They occur at depths of less than or equal to 10m (chart datum), require full seawater salinity (>30 ppt) and good water exchange (Lessard <i>et al.</i> 2007b, as cited in COSEWIC 2009). Larvae are planktonic and settlement is thought to occur on encrusting coralline algae (Roberts 2002, as cited in COSEWIC 2009).
<i>Hemphillia burringtoni</i>	Keeled Jumping-slug	Invertebrate Animal	gastropods	Red	Special Concern	Special Concern	CDF; CWH	Forest / Conifer Forest - Moist/wet / Unknown ; Forest / Deciduous/Broadleaf Forest / Unknown ; Forest / Mixed Forest (deciduous/coniferous mix) / Unknown ; Riparian / Riparian Forest / Unknown	This species occupies moist forests from young seral stages to old growth and from low to mid-elevations (COSEWIC 2003b). It is often found in forested riparian areas along creeks or rivers. Moist forest floor conditions appear to be more important than forest age or type. Required microhabitat features include coarse woody debris, pockets of deep leaf litter, or other moist shelter sites such as provided by root-masses of sword ferns. It "occurs sporadically in coniferous, deciduous and mixed-wood forests" (Forsyth 2004).
<i>Hemphillia dromedarius</i>	Dromedary Jumping-slug	Invertebrate Animal	gastropods	Red	Threatened	Threatened	CDF; CWH	Forest / Conifer Forest - Moist/wet / Obligate	In BC, this species is associated with older, coniferous forest and old-growth forest attributes (COSEWIC 2003a). Important microhabitat features consist of abundant coarse woody debris, including large-diameter decaying logs, and shaded, moist forest floor conditions. Eggs are probably laid in moist microhabitats, such as within large decaying logs, as reported for the species in the United States. All known sites in the interior and eastern Vancouver Island are at high elevations, whereas sites on the wetter west coast of the island are at low elevations (COSEWIC 2003a, Ovaska and Sopuck 2004d, 2006a,b). Higher elevation sites in drier landscapes probably provide required moist conditions throughout much of the growing season.
<i>Hesperia colorado oregonia</i>	Western Branded Skipper, <i>oregonia</i> subspecies	Invertebrate Animal	insects	Red	Endangered	Endangered	CDF; CWH; MH	Agriculture / Pasture/Old Field / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use	

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<i>Hirundo rustica</i>	Barn Swallow	Vertebrate Animal	birds	Yellow	Special Concern	Threatened	BAFA; BG; BWBS; CDF; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS; SBS; SWB	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Anthropogenic / Industrial / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - frequent use ; Forest / Conifer Forest - Dry / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Grassland/Shrub / Antelope-brush Steppe / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Grassland/Shrub / Sagebrush Steppe / Facultative - occasional use ; Grassland/Shrub / Shrub - Logged / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Riparian / Gravel Bar / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - occasional use ; Riparian / Riparian Herbaceous / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - occasional use ; Stream/River / Stream/River / Facultative - frequent use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Hybognathus hankinsoni</i> - Pacific group	Brassy Minnow - Pacific Group	Vertebrate Animal	ray-finned fishes	Blue	Special Concern		CDFmm; CWHdm; CWHxm		
<i>Hydroprogne caspia</i>	Caspian Tern	Vertebrate Animal	birds	Blue	Not at Risk		BG; BWBS; CDF; CWH; ICH; IDF; PP; SBS	Anthropogenic / Urban/Suburban / Facultative - frequent use ; Lakes / Lake / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Other Unique Habitats / Beach / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Riparian / Gravel Bar / Facultative - occasional use ; Stream/River / Stream/River / Facultative - frequent use ; Wetland / Marsh / Facultative - occasional use	
<i>Icaricia icarioides blackmorei</i>	Boisduval's Blue, <i>blackmorei</i> subspecies	Invertebrate Animal	insects	Blue			CDF; CWH; MH	Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Obligate	Historic records for Boisduval's Blue, <i>blackmorei</i> subspecies occur in low elevation Garry oak and associated grassland environments (CDC 2006; Guppy 2006). Current records for the species show it rarely occurs in these environments, perhaps due to invasive species encroachment that has competed with the food plants, native lupines (<i>Lupinus</i> spp.). The species has also been recorded in higher elevation areas, including sub-alpine and alpine meadows where native lupines occur (Guppy 2003).
<i>Icaricia saepiolus insulanus</i>	Greenish Blue, <i>insulanus</i> subspecies	Invertebrate Animal	insects	Red	Endangered	Endangered	CDF; CWH	Agriculture / Pasture/Old Field / Unknown ; Forest / Deciduous/Broadleaf Forest / Unknown ; Grassland/Shrub / Grassland / Unknown ; Grassland/Shrub / Meadow / Unknown ; Riparian / Gravel Bar / Unknown ; Riparian / Riparian Forest / Unknown ; Riparian / Riparian Herbaceous / Unknown ; Riparian / Riparian Shrub / Unknown	Habitat keywords copied from species record.
<i>Icteria virens</i>	Yellow-breasted Chat	Vertebrate Animal	birds	Red	Endangered	Endangered	BG; CDF; CWH; ICH; IDF; PP; SBS	Agriculture / Hedgerow / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - frequent use	The species is typically associated with shrubby and riparian habitats with open canopies and dense subcanopy layers (Eckerle and Thompson 2001). In British Columbia, this includes black cottonwood (<i>Populus balsamifera</i>) water birch (<i>Betula occidentalis</i>) stands with dense understoreys of wild rose (<i>Rosa</i> spp.), willow (<i>Salix</i> spp.), and common snowberry (<i>Symphoricarpos albus</i>) (BC Minist. of Water, Land and Air Protection 2004). Other common vegetation components at breeding sites are Columbian hawthorn (<i>Crataegus columbiana</i>), trembling aspen (<i>Populus tremuloides</i>), choke cherry (<i>Prunus virginianus</i>) and Himilayan blackberry (Campbell et al. 2001; Cannings 1995).

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<i>Lampetra richardsoni</i> pop. 1	Western Brook Lamprey (Morrison Creek Population)	Vertebrate Animal	Lampreys	Red	Endangered	Endangered	CWH		Morrison Creek is a small, low elevation, stream characterized by wetlands, meadows and beaver ponds. These characteristics make the stream very productive and provide a year round supply of clean groundwater. The substrates are mainly composed of compressed till with limited patches of small gravel and an abundance of woody debris (Beamish et al. 2001). The specific habitat features needed to support this polymorphic population are unknown (Beamish et al. 2001). In general, lamprey ammocoetes (larvae) require soft bottom substrates to burrow into and adults utilize gravel for spawning.
<i>Larus californicus</i>	California Gull	Vertebrate Animal	birds	Red			BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBS	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Kelp Bed / Facultative - occasional use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - occasional use ; Other Unique Habitats / Alkali Ponds/Salt Flats / Facultative - occasional use ; Other Unique Habitats / Beach / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Riparian / Gravel Bar / Facultative - occasional use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Marsh / Facultative - frequent use	
<i>Lasiurus cinereus</i>	Hoary Bat	Vertebrate Animal	mammals	Blue	Endangered		BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBS	Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - occasional use ; Stream/River / Stream/River / Facultative - frequent use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Lepus americanus washingtonii</i>	Snowshoe Hare, <i>washingtonii</i> subspecies	Vertebrate Animal	mammals	Red			CDF; CWH	Forest / Conifer Forest - Dry / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - occasional use ; Riparian / Riparian Herbaceous / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - occasional use	Habitat keywords copied from species record.
<i>Limnodromus griseus</i>	Short-billed Dowitcher	Vertebrate Animal	birds	Red			BG; BWBS; CDF; CWH; ICH; IDF; PP; SWB	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - frequent use ; Other Unique Habitats / Beach / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - frequent use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Swamp / Facultative - occasional use	
<i>Limosa haemastica</i>	Hudsonian Godwit	Vertebrate Animal	birds	Red	Threatened		BWBS; CDF; CWH; IDF; MS; SWB	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Tundra / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Lakes / Lake / Facultative - occasional use ; Lakes / Pond/Open Water / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - occasional use ; Other Unique Habitats / Beach / Facultative - occasional use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - occasional use ; Riparian / Riparian Herbaceous / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use	

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Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Megascops kennicottii</i>	Western Screech-Owl	Vertebrate Animal	birds	No Status	Threatened	Threatened	BG; CDF; CWH; ICH; IDF; PP		
<i>Megascops kennicottii kennicottii</i>	Western Screech-Owl, <i>kennicottii</i> subspecies	Vertebrate Animal	birds	Blue	Threatened	Threatened	CDF; CWH; MH	Agriculture / Hedgerow / Unknown ; Agriculture / Pasture/Old Field / Unknown ; Anthropogenic / Urban/Suburban / Unknown ; Forest / Conifer Forest - Dry / Unknown ; Forest / Conifer Forest - Mesic (average) / Unknown ; Forest / Conifer Forest - Moist/wet / Unknown ; Forest / Mixed Forest (deciduous/coniferous mix) / Unknown ; Riparian / Riparian Forest / Unknown	Habitat keywords copied from species record.
<i>Melanerpes lewis</i>	Lewis's Woodpecker	Vertebrate Animal	birds	Blue	Threatened	Threatened	BG; CDF; CWH; ICH; IDF; PP; SBS	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Grassland/Shrub / Antelope-brush Steppe / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use	Three distinct habitats are used in British Columbia: open areas with scattered trees, riparian forests adjacent to open areas; and burns (Campbell et al. 1990; Cooper et al. 1998; Cooper and Beauchesne 2000; Cooper and Gillies 2000).
<i>Melanitta americana</i>	Black Scoter	Vertebrate Animal	birds	Blue			CDF; CMA; CWH; MH	Lakes / Lake / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use	
<i>Melanitta perspicillata</i>	Surf Scoter	Vertebrate Animal	birds	Blue			BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBPS; SBS; SWB	Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - occasional use	
<i>Musculium partumeium</i>	Swamp Fingernailclam	Invertebrate Animal	bivalves	Blue			CDF; CWH; ESSF; ICH	Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Other Unique Habitats / Vernal Pools/Seasonal Seeps / Unknown ; Stream/River / Stream/River / Obligate	In large and small lakes, ponds, swamps, vernal ponds and slow-moving streams; the usual substrate is mud (Clarke 1981).
<i>Musculium transversum</i>	Long Fingernailclam	Invertebrate Animal	bivalves	Blue			CDF; CWH; ESSF; ICH		
<i>Mustela frenata altifrontalis</i>	Long-tailed weasel, <i>altifrontalis</i> subspecies	Vertebrate Animal	mammals	Red			CDF; CWH; MH	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Tundra / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Other Unique Habitats / Avalanche Track / Facultative - occasional use ; Riparian / Gravel Bar / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - occasional use ; Subterranean / Sub-soil / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	Habitat keywords copied from species record.

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Animal Species at Risk Potentially Occurring Onsite
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Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Mustela richardsonii anguinae</i>	Ermine, <i>anguinae</i> subspecies	Vertebrate Animal	mammals	Blue			CDF; CWH; MH	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Alpine/Tundra / Krummholtz / Facultative - occasional use ; Alpine/Tundra / Tundra / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - frequent use ; Riparian / Gravel Bar / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - occasional use	Habitat keywords copied from species record.
<i>Myodes gapperi occidentalis</i>	Southern Red-backed Vole, <i>occidentalis</i> subspecies	Vertebrate Animal	mammals	Red			CDF; CWH	Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Wetland / Bog / Unknown	Habitat keywords copied from species record.
<i>Myotis lucifugus</i>	Little Brown Myotis	Vertebrate Animal	mammals	Blue	Endangered	Endangered	BG; BWBS; CDF; CWH; ESSF; ICH; IDF; MH; MS; PP; SBPS; SBS; SWB	Anthropogenic / Industrial / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Garry Oak Woodland / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Grassland/Shrub / Shrub - Logged / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Garry Oak Coastal Bluffs / Facultative - occasional use ; Subterranean / Caves / Obligate	
<i>Myotis yumanensis</i>	Yuma Myotis	Vertebrate Animal	mammals	Blue			BG; CDF; CWH; ICH; IDF; MH; PP		
<i>Nannopterum auritum</i>	Double-crested Cormorant	Vertebrate Animal	birds	Blue	Not at Risk		BWBS; CDF; CWH; ICH; IDF; PP; SBPS; SBS	Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Lakes / Lake / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - occasional use ; Ocean / Marine Island / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use	
<i>Numenius americanus</i>	Long-billed Curlew	Vertebrate Animal	birds	Yellow	Special Concern	Special Concern	BG; CDF; CWH; ICH; IDF; PP; SBPS; SBS	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - occasional use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - occasional use	
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron	Vertebrate Animal	birds	Red			BG; CDF; CWH; ICH; IDF; PP	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Lakes / Pond/Open Water / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Octogomphus specularis</i>	Grappletail	Invertebrate Animal	insects	Blue	Special Concern		CWH	Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Stream/River / Stream/River / Obligate	Along wooded streams draining lakes (Cannings 2002b).

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<i>Omus audouini</i>	Audouin's Night-stalking Tiger Beetle	Invertebrate Animal	insects	Red	Threatened	Threatened	CDF; CWH		
<i>Oncorhynchus clarkii clarkii</i>	Cutthroat Trout, <i>clarkii</i> subspecies	Vertebrate Animal	ray-finned fishes	Blue			BWBS; CDF; CWH; ICH; SBS		
<i>Ophiogomphus occidentis</i>	Sinuous Snaketail	Invertebrate Animal	insects	Blue			BAFA; BG; CDF; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS	Lakes / Lake / Obligate ; Stream/River / Stream/River / Obligate	
<i>Oporornis agilis</i>	Connecticut Warbler	Vertebrate Animal	birds	Blue			BWBS; CWH	Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use	
<i>Oreamnos americanus</i>	Mountain Goat	Vertebrate Animal	mammals	Blue			BAFA; BG; BWBS; CDF; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS; SBS; SWB	Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Krummholtz / Facultative - frequent use ; Alpine/Tundra / Tundra / Facultative - frequent use ; Forest / Conifer Forest - Dry / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Other Unique Habitats / Avalanche Track / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Obligate ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Obligate ; Rock/Sparsely Vegetated Rock / Talus / Obligate	
<i>Oreoscoptes montanus</i>	Sage Thrasher	Vertebrate Animal	birds	Red	Endangered	Endangered	BG; CDF; CWH; ICH; IDF; PP	Grassland/Shrub / Sagebrush Steppe / Obligate	This species is associated with shrub-steppe habitats, and requires large (greater than 1m tall) sagebrush for nesting. Sagebrush used for nesting in the south Okanagan were larger in height and width than surrounding vegetation and sagebrush canopy closure averaged 70% (Campbell et al. 1997).
<i>Papilio indra</i>	Indra Swallowtail	Invertebrate Animal	insects	Red			CWH; ESSF; IDF; IMA; MH; MS	Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Obligate	
<i>Parnassius clodius claudianus</i>	Clodius Parnassian, <i>claudianus</i> subspecies	Invertebrate Animal	insects	Blue			CDF; CMA; CWH; MH		
<i>Parnassius clodius pseudogallatinus</i>	Clodius Parnassian, <i>pseudogallatinus</i> subspecies	Invertebrate Animal	insects	Blue			CMA; CWH; ESSF; IDF; IMA; MH; MS		
<i>Parnassius smintheus olympianus</i>	Rocky Mountain Parnassian, <i>olympiannus</i> subspecies	Invertebrate Animal	insects	Blue			CDF; CMA; CWH; MH	Alpine/Tundra / Alpine Grassland / Facultative - frequent use ; Alpine/Tundra / Alpine/Subalpine Meadow / Facultative - frequent use ; Alpine/Tundra / Fellfield / Facultative - frequent use ; Alpine/Tundra / Glacier/Icefield / Facultative - frequent use ; Alpine/Tundra / Heath / Facultative - frequent use ; Alpine/Tundra / Krummholtz / Facultative - frequent use ; Alpine/Tundra / Nivation / Facultative - frequent use ; Alpine/Tundra / Tundra / Facultative - frequent use ; Alpine/Tundra / Zoogenic / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use	
<i>Patagioenas fasciata</i>	Band-tailed Pigeon	Vertebrate Animal	birds	Blue	Special Concern	Special Concern	CDF; CWH; ICH; IDF; MS; SBS	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Springs / Cold Spring / Facultative - frequent use ; Springs / Hot Spring / Facultative - frequent use ; Springs / Warm Spring / Facultative - frequent use	

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<i>Pelecanus erythrorhynchos</i>	American White Pelican	Vertebrate Animal	birds	Red	Not at Risk		BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBPS; SBS	Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Ocean / Intertidal Marine / Facultative - occasional use ; Ocean / Sheltered Waters - Marine / Facultative - occasional use ; Ocean / Subtidal Marine / Facultative - occasional use ; Other Unique Habitats / Beach / Facultative - occasional use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Marsh / Facultative - occasional use	BREEDING - Nests are built on islands in lakes with little natural or human disturbance (Evans and Knopf 1993). Nesting islands are typically flat, with little vegetation or large ground debris present due to physical disturbance by pelicans and high soil acidity from guano. Prey fish populations are not necessarily present at nesting lakes, but stable water levels are important to maintain productive nesting habitats. Rising water levels can result in flooding of nest sites, and falling water levels can reduce the effectiveness of the water barrier that is used as security from terrestrial predators. The only breeding colony in British Columbia is located at Stum Lake on the Fraser Plateau, a shallow (mean depth of 2.5 m), slightly alkaline (pH=8.6), 900 ha lake at 1220 m elevation (Campbell <i>et al.</i> 1990). Nesting occurs at variable levels on four different islands at Stum Lake (Dunbar 1984, Campbell <i>et al.</i> 1990, Harper and Steciw 2000). Three of the four islands are unforested and very sparsely vegetated, but one contains well-spaced spruce and birch trees. These nesting islands are located 80 to 600 m from shore, are low in profile (up to 6.7 m in height), and range in size from 90 to 1000 m ² . Nests are generally closely spaced and situated on flat areas, often adjacent to dead trees, logs and rocks (Dunbar 1984). Most nests are made from mounds of dirt, sticks, reeds and debris, although occasionally shallow depressions in sand are used (Campbell <i>et al.</i> 1990). The nests are loosely lined with feathers, twigs, fish bones or small stones. FORAGING - American White Pelicans forage in slow-moving streams and rivers, lakes, permanent or semi-permanent marshes, reservoirs and, to a limited extent during migration, coastal bays, estuaries, and near-shore marine sites (Johnsgard 1993). Foraging waters range from nutrient-rich to nutrient-poor, muddy to clear, with various shorelines of mud, sand, gravel, and rock (Evans and Knopf 1993). In British Columbia, pelicans forage in shallows along the shorelines of lakes, at creek mouths, in shallow open water in the middle of lakes, and in streams (Dunbar 1984, Harper and VanSpall 2001, Harper <i>et al.</i> 2004). Stream foraging, which was only observed in the spring, is thought to be associated with the spawning activities of coarse fish such as longnose suckers (<i>Catostomus catostomus</i>). Inlets and outlet streams are a significant component of pelican foraging habitat, not only because their deltas are often used as loafing habitat, but also because these streams provide foraging opportunities, particularly when fish are spawning. In British Columbia, the average elevation of 19 main foraging lakes is 1004 m above sea level (Harper and Steciw 2000). Puntzi Lake is the largest of these foraging lakes with a surface area of 1706 ha. The other foraging lakes are much smaller, and are relatively similar in size, averaging 321 ha in surface area and 4 m in depth (Harper and Steciw 2000). Most of these lakes are fairly alkaline in nature with 8 of 11 having pH readings from 8.5 to 9.2. Loafing areas are important as stopovers for flights from foraging lakes to the nesting colony where pelicans rest, preen and wait for favourable flight conditions. In British Columbia, the most commonly used loafing sites are sand bars and mud flat islands at the deltas of major inlets and floating vegetation along the marshy edges of shallow lakes (Harper and Steciw 2000). Deadfall, partly submerged logs, and shorelines are also used for loafing (Wood 1990).
<i>Phalaropus lobatus</i>	Red-necked Phalarope	Vertebrate Animal	birds	Blue	Special Concern	Special Concern	BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBPS; SBS; SWB	Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Tundra / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Physella propinqua</i>	Rocky Mountain Physa	Invertebrate Animal	gastropods	Blue			BAFA; CDF; CMA; CWH; ESSF; IDF; IMA; MH; MS; SBPS; SBS		
<i>Physella virginea</i>	Sunset Physa	Invertebrate Animal	gastropods	Blue			BAFA; BG; CDF; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; SBPS; SBS		

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<i>Pinicola enucleator carlottae</i>	Pine Grosbeak, <i>carlottae</i> subspecies	Vertebrate Animal	birds	Blue			CMA; CWH; MH	Alpine/Tundra / Krummholtz / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - occasional use ; Wetland / Bog / Facultative - occasional use ; Wetland / Fen / Facultative - occasional use ; Wetland / Marsh / Facultative - occasional use ; Wetland / Swamp / Facultative - occasional use	Habitat keywords copied from species record.
<i>Pituophis catenifer</i>	Gophersnake	Vertebrate Animal	reptiles	No Status	Extirpated / Threatened	Extirpated / Threatened	BG; CDF; CWH; IDF; PP		
<i>Pituophis catenifer catenifer</i>	Gophersnake, <i>catenifer</i> subspecies	Vertebrate Animal	reptiles	Red	Extirpated	Extirpated	CDF; CWH	Agriculture / Cultivated Field / Unknown ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Unknown ; Rock/Sparsely Vegetated Rock / Talus / Unknown	Habitat keywords copied from species record.
<i>Planorbula campestris</i>	Meadow Rams-horn	Invertebrate Animal	gastropods	Blue			BAFA; BWBS; CDF; CMA; CWH; ESSF; ICH; IMA; MH; SBS		
<i>Pluvialis dominica</i>	American Golden-Plover	Vertebrate Animal	birds	Blue			BAFA; BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBS; SWB	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Alpine/Tundra / Alpine Grassland / Unknown ; Alpine/Tundra / Alpine/Subalpine Meadow / Unknown ; Alpine/Tundra / Tundra / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Lakes / Lake / Facultative - occasional use ; Lakes / Pond/Open Water / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - occasional use ; Other Unique Habitats / Alkali Ponds/Salt Flats / Facultative - frequent use ; Other Unique Habitats / Beach / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use	
<i>Pristiloma johnsoni</i>	Broadwhorl Tightcoil	Invertebrate Animal	gastropods	Blue			CDF; CWH; MH	Forest / Conifer Forest - Dry / Unknown ; Forest / Conifer Forest - Mesic (average) / Unknown ; Forest / Conifer Forest - Moist/wet / Unknown ; Forest / Deciduous/Broadleaf Forest / Unknown ; Forest / Mixed Forest (deciduous/coniferous mix) / Unknown ; Rock/Sparsely Vegetated Rock / Talus / Unknown	In leaf litter of deciduous, coniferous and mixed-wood forests to an elevation of over 1300 m in the subalpine (Cameron 1986, cited by Forsyth 2004; Branson and Branson 1984, cited by Forsyth 2004). It has also been reported from vegetated rockslide habitats (Forsyth 2004).
<i>Progne subis</i>	Purple Martin	Vertebrate Animal	birds	Blue			BWBS; CDF; CWH; ICH	Agriculture / Cultivated Field / Facultative - occasional use ; Agriculture / Hedgerow / Facultative - occasional use ; Agriculture / Pasture/Old Field / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - occasional use ; Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - occasional use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Prophysaon coeruleum</i>	Blue-grey Taildropper	Invertebrate Animal	gastropods	Blue	Threatened	Threatened	CDF; CWH	Forest / Conifer Forest - Moist/wet / Obligate ; Forest / Mixed Forest (deciduous/coniferous mix) / Obligate	Coniferous and mixed-wood forests from mid-seral to mature age classes, including Douglas-fir, shore pine, and aspen dominated stands, and Garry oak woodlands (COSEWIC 2006, Ovaska and Sopuck 2007d,e). Microhabitat features include abundant coarse woody debris, pockets of deep forest duff, and moist forest-floor conditions.

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Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Ptychoramphus aleuticus</i>	Cassin's Auklet	Vertebrate Animal	birds	Red	Special Concern	Special Concern	CDF; CWH	Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Ocean / Marine Island / Obligate ; Ocean / Pelagic / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - occasional use ; Ocean / Subtidal Marine / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Subterranean / Sub-soil / Obligate	
<i>Rana aurora</i>	Northern Red-legged Frog	Vertebrate Animal	amphibians	Blue	Special Concern	Special Concern	CDF; CWH; MH	Forest / Deciduous/Broadleaf Forest / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Riparian / Gravel Bar / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Stream/River / Stream/River / Facultative - frequent use ; Wetland / Bog / Obligate ; Wetland / Fen / Obligate ; Wetland / Marsh / Obligate ; Wetland / Swamp / Obligate	Red-legged Frogs have been observed in a variety of aquatic and terrestrial habitats. They breed in shallow, littoral zones of lakes, temporary and permanent pools and wetlands, and bogs and fens regardless of size but in close proximity to forest (i.e., toads may be found in all lacustrine and palustrine habitats); tadpoles associate with benthic habitats. Survival was higher in exclosures in temporary versus permanent wetlands in Washington (Adams 2000). Lotic habitats with little to no flow may be utilized by Red-legged Frogs, and riparian areas are important for newly metamorphosed froglets. Outside of the breeding season, Red-legged Frogs primarily utilize all forest and woodland types, but individuals are occasionally found in more open and rural areas such as shrubland/chaparral, cropland/hedgerow, old fields, and suburban/orchard. Little is known about the habitat requirements of Red-legged Frogs during hibernation, but one study found frogs overwintering in terrestrial or aquatic habitats in the Lower Mainland (Licht 1969), and one radio-tracked frog on Vancouver Island was found overwintering in a stream bank (Chan-McLeod, pers. comm.). In California, Red-legged Frogs estivate in burrows and moist leaf litter (USFWS 1994). Red-legged Frogs are most common at elevations below 500 m, with low slopes, and containing moist, mature/old forest in some areas.
<i>Rana pretiosa</i>	Oregon Spotted Frog	Vertebrate Animal	amphibians	Red	Endangered	Endangered	CWH	Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Riparian / Gravel Bar / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Stream/River / Stream/River / Facultative - frequent use ; Wetland / Bog / Obligate ; Wetland / Fen / Obligate ; Wetland / Marsh / Obligate ; Wetland / Swamp / Obligate	
<i>Recurvirostra americana</i>	American Avocet	Vertebrate Animal	birds	Blue			BG; BWBS; CDF; CWH; ICH; IDF; MS; PP; SBPS	Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - occasional use ; Other Unique Habitats / Alkali Ponds/Salt Flats / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Rhinichthys cataractae - Chehalis lineage</i>	Nooksack Dace	Vertebrate Animal	ray-finned fishes	Red	Endangered	Endangered	CWH		Both provincial localities are small, lowland creeks. Fishtrap Creek has been recently dredged and modified to increase its flow capacity, which eliminated a lot of slow, vegetation-choked reaches and replaced them with canal-like, cobble-bottomed habitat (Swiatkiewicz 1990).
<i>Salvelinus confluentus</i>	Bull Trout	Vertebrate Animal	ray-finned fishes	Blue	Special Concern		BG; BWBS; CWH; ESSF; ICH; IDF; MS; PP; SBPS; SBS; SWB		
<i>Salvelinus confluentus</i> pop. 28	Bull Trout - South Coast Population	Vertebrate Animal	ray-finned fishes	Blue	Special Concern	Special Concern	CDF; CWH; MH		
<i>Scapanus townsendii</i>	Townsend's Mole	Vertebrate Animal	mammals	Red	Endangered	Endangered	CWH	Agriculture / Pasture/Old Field / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - occasional use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Subterranean / Sub-soil / Obligate	

**Table 1
Animal Species at Risk Potentially Occurring Onsite
Pinnacle Ridge Hillside Landowner, PGL File 7030-01.02**

Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Setophaga castanea</i>	Bay-breasted Warbler	Vertebrate Animal	birds	Red			BWBS; CWH; ICH; MS; SBS	Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - occasional use	
<i>Setophaga virens</i>	Black-throated Green Warbler	Vertebrate Animal	birds	Blue			BWBS; CDF; CWH; ESSF; ICH; SBS	Forest / Conifer Forest - Mesic (average) / Facultative - occasional use ; Forest / Conifer Forest - Moist/wet / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use	
<i>Sorex bendirii</i>	Pacific Water Shrew	Vertebrate Animal	mammals	Red	Endangered	Endangered	CWH	Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Riparian / Gravel Bar / Obligate ; Riparian / Riparian Forest / Obligate ; Riparian / Riparian Herbaceous / Obligate ; Riparian / Riparian Shrub / Obligate ; Stream/River / Stream/River / Obligate ; Wetland / Bog / Obligate ; Wetland / Fen / Obligate ; Wetland / Marsh / Obligate ; Wetland / Swamp / Obligate	According to Craig and Vennesland (2007), ideal habitat in BC is riparian habitats associated with streams, creeks, and wetlands in mature coniferous (structural stages 5-7) or deciduous (structural stages 4-7) forests. A habitat model based on TEM data assigned habitat ratings to various habitats. There have been several recent captures in anthropogenic habitats such as drainage ditches. It is unknown if these captures are resident or dispersing animals. In BC, our understanding of habitat requirements is based on the three captures by Zuleta and Galindo-Leal (1994), historical museum records with poor location data, and a few recent captures with associated habitat information. Although a habitat model was developed by Craig (2007), the validity of her model and associated habitat ratings needs to be verified.
<i>Sorex navigator brooksi</i>	Western Water Shrew, <i>brooksi</i> subspecies	Vertebrate Animal	mammals	Blue			CDF; CWH	Riparian / Gravel Bar / Unknown ; Riparian / Riparian Forest / Unknown ; Riparian / Riparian Herbaceous / Unknown ; Riparian / Riparian Shrub / Unknown ; Stream/River / Stream/River / Unknown ; Wetland / Bog / Unknown ; Wetland / Fen / Unknown ; Wetland / Marsh / Unknown ; Wetland / Swamp / Unknown	
<i>Sorex rohweri</i>	Olympic Shrew	Vertebrate Animal	mammals	Red			CDF; CWH	Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Riparian / Gravel Bar / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use	No habitat studies have been done on this species in BC. Based on habitat data for recent (since 1990) opportunistic captures in BC (Zuleta and Galindo-Leal 1994; Fraker et al. 1999; Roberston Environmental Services 2006), this shrew has been found in mixed deciduous forest of red alder, birch, Sitka spruce, western hemlock; Sitka spruce-western hemlock forest; lodgepole pine forest; and in canary grass bordering a ditch ~15 m from a mixed forest (Nagorsen 2007). This suggests that <i>S. rohweri</i> is associated with forest habitats of various seral stages as the capture sites are either in coniferous or mixed forests or in close proximity to forested habitats (Nagorsen and Panter 2009). According to Robert Rausch (pers. comm.), in Washington <i>S. rohweri</i> is a "a forest dependent species-in old growth or second growth forest".
<i>Sorex trowbridgii</i>	Trowbridge's Shrew	Vertebrate Animal	mammals	Blue			CDF; CWH	Forest / Conifer Forest - Mesic (average) / Unknown ; Forest / Conifer Forest - Moist/wet / Unknown ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use	
<i>Speyeria zerene bremnerii</i>	Zerene Fritillary, <i>bremnerii</i> subspecies	Invertebrate Animal	insects	Red			CDF; CWH	Anthropogenic / Industrial / Facultative - occasional use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - frequent use	Habitat keywords copied from species record.
<i>Sphaerium occidentale</i>	Herrington Fingernailclam	Invertebrate Animal	bivalves	Blue			BG; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS; SBS	Other Unique Habitats / Vernal Pools/Seasonal Seeps / Obligate	Found in stillwaters of swamps, ditches and ponds; prefers habitats that dry up for part of the year, sometimes found among damp leaves on land and only known from regions containing calcareous deposits (Clarke 1981; Lee 2000).
<i>Sphaerium patella</i>	Rocky Mountain Fingernailclam	Invertebrate Animal	bivalves	Red			CWH; MH	Lakes / Lake / Obligate ; Lakes / Pond/Open Water / Obligate ; Stream/River / Stream/River / Obligate	In lakes, sloughs, rivers and streams (Clarke 1981).
<i>Sphaerium striatinum</i>	Striated Fingernailclam	Invertebrate Animal	bivalves	Blue			BAFA; BG; BWBS; CDF; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS; SBS; SWB		

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<i>Spirinchus</i> sp. 1	Pygmy Longfin Smelt	Vertebrate Animal	ray-finned fishes	Red	Data Deficient		CWH		
<i>Stagnicola caperata</i>	Wrinkled Marshsnail	Invertebrate Animal	gastropods	Blue			CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS		
<i>Stagnicola traski</i>	Widelip Pondsnaail	Invertebrate Animal	gastropods	Blue			BG; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; PP; SBPS; SBS		
<i>Sterna forsteri</i>	Forster's Tern	Vertebrate Animal	birds	Red	Data Deficient		BG; BWBS; CDF; CWH; ICH; IDF; PP	Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Ocean / Intertidal Marine / Facultative - occasional use ; Other Unique Habitats / Beach / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - occasional use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Marsh / Facultative - frequent use	
<i>Strix occidentalis</i>	Spotted Owl	Vertebrate Animal	birds	Red	Endangered	Endangered	CWH; ESSF; IDF; MH	Forest / Conifer Forest - Dry / Unknown ; Forest / Conifer Forest - Mesic (average) / Unknown ; Forest / Conifer Forest - Moist/wet / Unknown ; Riparian / Riparian Forest / Unknown	The Northern Spotted Owl preferentially selects old coniferous forests for foraging, roosting and nesting (Forsman <i>et al.</i> 1984; Carey <i>et al.</i> 1992), with large overstorey trees (>75 cm dbh), multilayered canopy, large decaying fallen trees and large diameter standing dead trees; these stands are typically dominated by trees >200 years (Thomas <i>et al.</i> 1990). Habitat selection is likely influenced by prey availability and abundance, availability of suitable nest and roosts sites, and adequate cover from predators (Carey <i>et al.</i> 1992, Forsman and Giese 1997). Spotted Owls do not create their nest structures, but often use tree cavities, deformities of large trees (e.g., depressions in the top of broken-topped trees, or platforms constructed by other birds or by natural accumulations of debris) (Forsman <i>et al.</i> 1984; Buchanan <i>et al.</i> 1993; Forsman and Giese 1997). Nest sites are located below the overhead canopy, thereby providing overhead cover and seclusion to the nest.
<i>Stygobromus quatsinensis</i>	Quatsino Cave Amphipod	Invertebrate Animal	malacostracans	Blue			CWH	Subterranean / Caves / Obligate	
<i>Sympetrum vicinum</i>	Autumn Meadowhawk	Invertebrate Animal	insects	Blue			CDF; CWH	Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Obligate ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Stream/River / Stream/River / Facultative - frequent use	In ponds, slow streams and lakes with dense, emergent vegetation (Cannings 2002b).
<i>Synthliboramphus antiquus</i>	Ancient Murrelet	Vertebrate Animal	birds	Blue	Special Concern	Special Concern	CDF; CWH	Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Grassland/Shrub / Shrub - Natural / Facultative - occasional use ; Ocean / Kelp Bed / Facultative - occasional use ; Ocean / Marine Island / Obligate ; Ocean / Pelagic / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - occasional use ; Subterranean / Sub-soil / Obligate	
<i>Tanypteryx hageni</i>	Black Petaltail	Invertebrate Animal	insects	Blue			CWH	Other Unique Habitats / Vernal Pools/Seasonal Seeps / Obligate ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Bog / Facultative - occasional use ; Wetland / Fen / Facultative - occasional use ; Wetland / Marsh / Facultative - occasional use ; Wetland / Swamp / Facultative - occasional use	
<i>Thaleichthys pacificus</i>	Eulachon	Vertebrate Animal	ray-finned fishes	Blue	Endangered / Threatened		CWH		

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<i>Tringa incana</i>	Wandering Tattler	Vertebrate Animal	birds	Blue			BWBS; CDF; CWH; IDF; SBS; SWB	Alpine/Tundra / Glacier/Icefield / Facultative - occasional use ; Lakes / Lake / Facultative - occasional use ; Lakes / Pond/Open Water / Facultative - occasional use ; Ocean / Intertidal Marine / Facultative - frequent use ; Ocean / Marine Island / Facultative - frequent use ; Ocean / Reefs / Facultative - frequent use ; Other Unique Habitats / Beach / Facultative - occasional use ; Riparian / Gravel Bar / Facultative - occasional use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Stream/River / Stream/River / Facultative - frequent use	
<i>Tyto alba</i>	Barn Owl	Vertebrate Animal	birds	Blue	Threatened	Threatened	BG; BWBS; CDF; CWH; ICH; IDF; PP	Agriculture / Cultivated Field / Facultative - frequent use ; Agriculture / Hedgerow / Facultative - frequent use ; Agriculture / Pasture/Old Field / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - occasional use ; Grassland/Shrub / Antelope-brush Steppe / Facultative - occasional use ; Grassland/Shrub / Grassland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Grassland/Shrub / Sagebrush Steppe / Facultative - occasional use ; Riparian / Gravel Bar / Facultative - occasional use ; Riparian / Riparian Forest / Facultative - occasional use ; Riparian / Riparian Herbaceous / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - occasional use ; Wetland / Marsh / Facultative - occasional use	Prefer low elevation open country; especially agricultural areas, such as open fields, grasslands, farmsteads and orchards, sometimes along edges of open woodlands and grassy estuaries and occasionally spotted in suburban areas. Use of suitable foraging habitat is limited by nest cavity requirements. Most often nests are located in human-made structures such as in wooden barns, concrete silos, church spires, airport hangers, water towers, bridges and nest boxes (Marti 1979, Andrusiak 1994). Natural sites include hollow tree cavities, cliffs, river banks and disused hawk nests (Campbell et al. 1990). The most common nests are on wooden platforms high in old wooden barns.
<i>Uria aalge</i>	Common Murre	Vertebrate Animal	birds	Red			CDF; CWH	Ocean / Kelp Bed / Facultative - occasional use ; Ocean / Marine Island / Obligate ; Ocean / Pelagic / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Obligate ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use	
<i>Uria lomvia</i>	Thick-billed Murre	Vertebrate Animal	birds	Red			CWH	Ocean / Marine Island / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Obligate	
<i>Urile penicillatus</i>	Brandt's Cormorant	Vertebrate Animal	birds	Red			CDF; CMA; CWH; MH	Ocean / Marine Island / Facultative - frequent use ; Ocean / Sheltered Waters - Marine / Facultative - frequent use ; Ocean / Subtidal Marine / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Obligate	
<i>Ursus arctos</i>	Grizzly Bear	Vertebrate Animal	mammals	Blue	Special Concern	Special Concern	BAFA; BWBS; CMA; CWH; ESSF; ICH; IDF; IMA; MH; MS; SBPS; SBS; SWB	Agriculture / Pasture/Old Field / Facultative - frequent use ; Alpine/Tundra / Tundra / Facultative - frequent use ; Anthropogenic / Urban/Suburban / Facultative - occasional use ; Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Conifer Forest - Moist/wet / Facultative - frequent use ; Forest / Deciduous/Broadleaf Forest / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Grassland/Shrub / Grassland / Facultative - frequent use ; Grassland/Shrub / Meadow / Facultative - frequent use ; Grassland/Shrub / Sagebrush Steppe / Facultative - occasional use ; Other Unique Habitats / Avalanche Track / Facultative - frequent use ; Other Unique Habitats / Beach / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Riparian / Gravel Bar / Facultative - frequent use ; Riparian / Riparian Forest / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use ; Subterranean / Caves / Facultative - occasional use ; Wetland / Bog / Facultative - frequent use ; Wetland / Fen / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use ; Wetland / Swamp / Facultative - frequent use	
<i>Vertigo rowellii</i>	Threaded Vertigo	Invertebrate Animal	gastropods	Blue	Special Concern	Special Concern	CDF; CWH	Forest / Deciduous/Broadleaf Forest / Obligate ; Forest / Mixed Forest (deciduous/coniferous mix) / Obligate	Found at rich sites in deciduous and mixed forests within moist leaf litter (Forsyth 2004).

Citation: B.C. Conservation Data Centre. 2023. BC Species and Ecosystems Explorer. B.C. Minist. of Environ. Victoria, B.C. Available: <https://a100.gov.bc.ca/pub/eswp/> (accessed Dec 7, 2023).

Search Criteria: Group: Animals, BC Conservation Status: Red (Extirpated, Endangered, or Threatened) OR Blue (Special Concern) OR SARA Schedule 1 Status: True OR COSEWIC Status: Endangered OR Threatened OR Special Concern, Municipalities: Anmore, BGC Zone: CWH

 Species not likely to occur based on available habitat.

**Table 2
Plant Species at Risk Potentially Occurring Onsite
Pinnacle Ridge Hillside Landowner, PGL File 7030-01.02**

Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Acorus americanus</i>	American sweet-flag	Vascular Plant	monocots	Blue			CWHdm; ICHdw; ICHxw; IDFmw; SBSdk; SBSdw; SBSmh; SBSwk	Lakes / Lake / Facultative - frequent use ; Lakes / Pond/Open Water / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - occasional use ; Riparian / Riparian Shrub / Facultative - occasional use ; Wetland / Marsh / Facultative - occasional use ; Wetland / Swamp / Facultative - occasional use	
<i>Actaea elata</i> var. <i>elata</i>	tall bugbane	Vascular Plant	dicots	Red	Endangered	Endangered	CWHdm; CWHms; CWHvm; MHmm	Forest / Conifer Forest - Mesic (average) / Unknown ; Forest / Deciduous/Broadleaf Forest / Unknown ; Forest / Mixed Forest (deciduous/coniferous mix) / Unknown	In British Columbia this species appears to favour seepage slopes and benches in mature forest situations. It is found in shady, low to mid elevation moist, mixed, mature (70-150 yr. old) western red cedar-hemlock forest, commonly in <i>Thuja plicata</i> - <i>Polystichum munitum</i> - <i>Achlys triphylla</i> communities, in mixed Douglas-fir- <i>Acer macrophyllum</i> sites, and in predominantly deciduous stands (Penny and Douglas 2003). Common vascular plant associates include <i>Pseudotsuga menziesii</i> , <i>Mahonia nervosa</i> , <i>Sambucus racemosa</i> , <i>Rubus parviflorus</i> , <i>Rubus spectabilis</i> , <i>Tiarella trifoliata</i> , <i>Tolmiea menziesii</i> , and <i>Asarum caudatum</i> . Interestingly, in British Columbia, <i>Oplopanax horridus</i> (devil's club) is a frequent associate, occurring at seven out of nine stations (Knopp, 2003; Klinkenberg and Klinkenberg 2003). Several authors have mentioned that <i>Actaea elata</i> requires some sub-surface water such as that provided by creeks/streams/rivers. Soils are not well known in <i>A. elata</i> sites in BC, but may be classified as mineral non-calcareous well-drained soils with a root depth of 20-75 cm (Klinkenberg and Klinkenberg 2003). Other reports list calcareous soils in <i>Actaea</i> sites. In one of the locations (Liumchen Mt), limestone influences are indicated. <i>Actaea elata</i> has been observed on a variety of aspects in BC.
<i>Bartramia aprica</i>	rigid apple moss	Bryophyte		Red	Endangered	Endangered	CDF; CWH	Rock/Sparsely Vegetated Rock / Garry Oak Coastal Bluffs / Facultative - frequent use	Habitat for <i>Bartramia stricta</i> in BC is shallow soil, rock crevices, ledges, or vertical rock faces in dry, south-facing grassy slopes with rock outcrops and scattering <i>Quercus garryana</i> , <i>Pseudotsuga menziesii</i> , and <i>Arbutus menziesii</i> . Associated vegetation includes <i>Crocidium multicaule</i> , <i>Festuca roemerii</i> , <i>Sedum spathulifolium</i> , <i>Selaginella wallacei</i> , <i>Vulpia</i> sp., <i>Bryum capillare</i> , <i>Bryum miniatum</i> , <i>Ceratodon purpureus</i> , <i>Didymodon vinealis</i> , <i>Entosthodon fascicularis</i> , <i>Philonotis fontana</i> , <i>Polytrichum juniperinum</i> , <i>Racomitrium elongatum</i> , <i>Racomitrium heterostichum</i> , <i>Timmia crassinervis</i> , <i>Weissia controversa</i> , and lichens. <i>Bryum miniatum</i> , <i>Entosthodon fascicularis</i> , and <i>Philonotis fontana</i> indicate seasonal groundwater seepage. Most microhabitats are slightly protected from direct precipitation. Stands of <i>B. stricta</i> that are exposed to full sunlight tend to be smaller than those with some shade (Belland 1997; BC BRT and GOERT 2007).
<i>Berula incisa</i>	cut-leaved water-parsnip	Vascular Plant	dicots	Blue			BGxh; CWHdm; IDFxh; PPxh	Lakes / Pond/Open Water / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Riparian / Riparian Shrub / Facultative - frequent use ; Springs / Cold Spring / Facultative - frequent use ; Stream/River / Stream/River / Facultative - occasional use ; Wetland / Marsh / Facultative - frequent use	
<i>Bidens amplissima</i>	Vancouver Island beggarticks	Vascular Plant	dicots	Blue	Special Concern	Special Concern	CDFmm; CWHdm; CWHms; CWHxm	Other Unique Habitats / Beach / Facultative - occasional use ; Other Unique Habitats / Estuary / Facultative - frequent use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use	This species is frequent in wetlands in the lower Fraser Delta and on Vancouver Island. It occupies a variety of wetland habitats including ditches, willow wetlands, old riverbeds, pond margins, streambanks, and tidal or non-tidal river edges (Klinkenberg and Klinkenberg 2001).
<i>Brotherella roellii</i>	Roell's brotherella	Bryophyte		Blue	Endangered	Endangered	CWH		It occurs in remnant stands of second-growth forests found within city parks, and areas unsuitable for urban development or in floodplain regions along waterways.

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Pinnacle Ridge Hillside Landowner, PGL File 7030-01.02**

Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Cephalanthera austiniiae</i>	phantom orchid	Vascular Plant	monocots	Red	Endangered	Endangered	CDFmm; CWHdm; CWHxm	Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Forest / Mixed Forest (deciduous/coniferous mix) / Facultative - frequent use ; Forest / Old Forest / Facultative - frequent use	In our region in BC, <i>Cephalanthera austiniiae</i> occurs naturally in mature mixed woods, or woods with strong deciduous or coniferous components. In most locations, although not all, the orchids occur in sites with little to no ground cover. Occurrence also appears to be strongly correlated with limestone (Klinkenberg 2005). Residual populations persist in areas of human habitation, presumably in areas where no serious disturbance to the ground surface has occurred.
<i>Claytonia washingtoniana</i>	Washington springbeauty	Vascular Plant	dicots	Blue			CDFmm; CWHdm; CWHxm; IDFww	Forest / Conifer Forest - Dry / Unknown ; Forest / Mixed Forest (deciduous/coniferous mix) / Unknown ; Rock/Sparsely Vegetated Rock / Cliff / Unknown ; Rock/Sparsely Vegetated Rock / Talus / Unknown	
<i>Collema flaccidum</i>	flaking tarpaper	Lichen		Red			CWHdm; CWHwh; CWHxm; PPxh		
<i>Fabronia pusilla</i>	silver hair moss	Bryophyte		Red	Endangered	Endangered	CWHdm		Little information is available on habitat for <i>Fabronia pusilla</i> in BC. Habitat described on the two Schofield specimens from Sumas Mountain was a cranny on a dry semi-shaded vertical sandstone cliff and a damp, shaded sandstone cliff. It was associated with the moss <i>Homalothecium</i> . The sandstone cliffs at Sumas Mountain are about 1.5 km long but somewhat broken up by talus and forest of <i>Pseudotsuga menziesii</i> and <i>Acer macrophyllum</i> . Many of the steep and high cliff faces are inaccessible. Macoun reported the specimen from Arrow Lake as occurring in crevices of steep rocks of undetermined type. In Oregon and California it occurs in similar habitats as well as tree bark, especially on oaks including <i>Quercus garryana</i> (COSEWIC 2002w; BC Bryophyte Recovery Team 2007b).
<i>Fissidens pauperculus</i>	poor pocket moss	Bryophyte		Red	Endangered	Endangered	CWH		There are no detailed published accounts of habitat for <i>Fissidens pauperculus</i> in BC. Schofield (1968) and Krause and Schofield (1977) described habitat in Lynn Canyon as "silty outcrop in seasonal streamlet," and "seepy consolidated silt cliff." Herbarium labels include "silt of damp slope" and "silt outcrop on canyon slope." Based on field work in 1999-2000, Belland (2001b) described habitat as an intermittently wet, silty outcrop along a streamlet in a mature Douglas-fir/western hemlock forest. The substrate is mostly dry in summer but wet in winter (Belland 2001b). All sites are shaded by trees with only intermittent sunshine later in the day. Suitable habitat can be generally described as seasonally moist, hard-packed silt-rich soils on steep faces in heavily shaded forested habitats within the CWHdm (Coastal Western Hemlock dry maritime) biogeoclimatic subzone. Associated bryophytes at Lynn Canyon include <i>Dichodontium pellucidum</i> and <i>Jungermannia</i> sp. (Poor Pocket Moss Recovery Team 2007).
<i>Leioderma solediatum</i>	felted elf	Lichen		Blue			CWH		
<i>Lupinus rivularis</i>	streambank lupine	Vascular Plant	dicots	Red	Endangered	Endangered	CDFmm; CWHdm; CWHxm	Anthropogenic / Urban/Suburban / Facultative - frequent use ; Forest / Garry Oak Woodland / Facultative - occasional use ; Grassland/Shrub / Meadow / Facultative - occasional use ; Other Unique Habitats / Mudflats - Intertidal / Facultative - occasional use ; Stream/River / Stream/River / Facultative - frequent use	Wet to moist meadows and riverbanks in the lowland zone.

**Table 2
Plant Species at Risk Potentially Occurring Onsite
Pinnacle Ridge Hillside Landowner, PGL File 7030-01.02**

Scientific Name	English Name	Name Category	Class (English)	BC List	COSEWIC	SARA Status	BGC	Habitats (Type / Subtype / Dependence)	Provincial Habitat Comments
<i>Pinus albicaulis</i>	whitebark pine	Vascular Plant	conifers	Blue	Endangered	Endangered	BAFAun; BAFAunp; CMAunp; CWHdm; CWHds; CWHms; CWHun; CWHvm; CWHws; ESSFdc; ESSFdc; ESSFdcw; ESSFdk; ESSFdkp; ESSFdku; ESSFdkw; ESSFdm; ESSFdmw; ESSFdmv; ESSFdv; ESSFdvw; ESSFdv; ESSFmc; ESSFmcp; ESSFmk; ESSFmkp; ESSFmm; ESSFmmp; ESSFmv; ESSFmvp; ESSFmw; ESSFmwv; ESSFmww; ESSFvc; ESSFvcp; ESSFvcw; ESSFwc; ESSFwcp; ESSFwcv; ESSFwk; ESSFwm; ESSFwmp; ESSFwmw; ESSFwv; ESSFwvp; ESSFxc; ESSFxcp; ESSFxcw; ESSFxv; ESSFxvp; ESSFxvw; ICHdm; ICHdw; ICHmc; ICHmk; ICHmm; ICHmw; ICHvk; ICHwk; IDFdc; IDFdk; IDFdm; IDFdw; IDFww; IDFxc; IDFxh; IMAun; IMAunp; MHmm; MHmmp; MSdc; MSdk; MSdm; MSdv; MSmw; MSxk; MSxv; SBPSxc; SBSdh; SBSmc; SBSvk; SBSwk	Forest / Conifer Forest - Dry / Facultative - frequent use ; Forest / Conifer Forest - Mesic (average) / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Cliff / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Rock/Sparsely Vegetated Rock / Facultative - frequent use ; Rock/Sparsely Vegetated Rock / Talus / Facultative - frequent use	
<i>Scytinium californicum</i>	midlife vinyl	Lichen		Blue			CDFmm; CWHdm; CWHds; CWHms; CWHvh; CWHwh; CWHws; CWHxm; IDFun		
<i>Scytinium polycarpum</i>	peacock vinyl	Lichen		Yellow	Special Concern	Special Concern	CDFmm; CWHdm; CWHds; CWHwh; CWHxm		
<i>Seligeria acutifolia</i>	acuteleaf small limestone moss	Bryophyte		Red	Endangered	Endangered	CWH		
<i>Veronica catenata</i>	pink water speedwell	Vascular Plant	dicots	Blue			CWHdm; ESSFmw; IDFdm	Grassland/Shrub / Meadow / Facultative - occasional use ; Lakes / Pond/Open Water / Facultative - frequent use ; Riparian / Riparian Herbaceous / Facultative - frequent use ; Wetland / Marsh / Facultative - frequent use	

Citation: B.C. Conservation Data Centre. 2023. BC Species and Ecosystems Explorer. B.C. Minist. of Environ. Victoria, B.C. Available: <https://a100.gov.bc.ca/pub/eswp/> (accessed Dec 7, 2023).

Search Criteria: Group: Plants, Lichens, Macrofungi, BC Conservation Status: Red (Extirpated, Endangered, or Threatened) OR Blue (Special Concern) OR SARA Schedule 1 Status: True OR COSEWIC Status: Endangered OR Threatened OR Special Concern, Municipalities: Anmore, BGC Zone: CWH


 Species not likely to occur based on available habitat.

Table 3
Ecosystems at Risk Potentially Occurring Onsite
Pinnacle Ridge Hillside Landowner, PGL File 7030-01.02

Scientific Name	English Name	Name Category	BC List	BGC
<i>Abies amabilis</i> - <i>Picea sitchensis</i> / <i>Oplomanax horridus</i>	amabilis fir - Sitka spruce / devil's club	Ecological Community	Blue	CWHvm1/08; CWHvm2/08
<i>Abies amabilis</i> - <i>Thuja plicata</i> / <i>Rubus spectabilis</i> Very Wet Maritime	amabilis fir - western redcedar / salmonberry Very Wet Maritime	Ecological Community	Blue	CWHvm1/07; CWHvm2/07
<i>Carex lyngbyei</i> Herbaceous Vegetation	Lyngbye's sedge herbaceous vegetation	Ecological Community	Red	CDFmm/Em05; CWH/Em05
<i>Carex sitchensis</i> / <i>Sphagnum</i> spp.	Sitka sedge / peat-mosses	Ecological Community	Red	CWHvh2/Wf51; CWHvm1/Wf51; CWHvm2/Wf51; CWHwh1/Wf51; CWHwm/Wf51; CWHws2/Wf51; ICHvc/Wf51; ICHwc/Wf51; MHmm1/Wf51
<i>Deschampsia cespitosa</i> ssp. <i>beringensis</i> - <i>Hordeum brachyantherum</i>	tufted hairgrass - meadow barley	Ecological Community	Red	CDFmm/Ed01; CWH/Ed01
<i>Eleocharis palustris</i> Herbaceous Vegetation	common spike-rush Herbaceous Vegetation	Ecological Community	Blue	BGxw2/Wm04; CDFmm/Wm04; CWH/Wm04; ESSFdv/Wm04; ESSFdv1/; ESSFdv2/Wm04; IDFxm/Wm04; SBSdk/Wm04; SBSmk2/Wm04
<i>Juncus arcticus</i> - <i>Plantago macrocarpa</i>	arctic rush - Alaska plantain	Ecological Community	Red	CDFmm/Ed03; CWH/Ed03
<i>Leymus mollis</i> ssp. <i>mollis</i> - <i>Lathyrus japonicus</i>	dune wildrye - beach pea	Ecological Community	Red	CDFmm; CWHdm; CWHds1; CWHms2; CWHvh1; CWHvh2; CWHvm1; CWHwh1; CWHwm; CWHws1; CWHxm1; CWHxm2
<i>Picea sitchensis</i> / <i>Rubus spectabilis</i> Dry	Sitka spruce / salmonberry Dry	Ecological Community	Red	CWHdm/08; CWHds1/08
<i>Picea sitchensis</i> / <i>Rubus spectabilis</i> Very Wet Maritime	Sitka spruce / salmonberry Very Wet Maritime	Ecological Community	Red	CWHvm1/09
<i>Populus trichocarpa</i> - <i>Alnus rubra</i> / <i>Rubus spectabilis</i>	black cottonwood - red alder / salmonberry	Ecological Community	Blue	CDFmm/08; CWHdm/09; CWHds1/09; CWHds2/09; CWHmm1/09; CWHms1/08; CWHms2/08; CWHvm1/10; CWHwm/06; CWHws1/08; CWHws2/08; CWHxm1/09; CWHxm2/09
<i>Populus trichocarpa</i> / <i>Salix sitchensis</i>	black cottonwood / Sitka willow	Ecological Community	Blue	CWHdm/10; CWHds/10; CWHmm1/10; CWHms/09; CWHvm1/11; CWHwm/07; CWHws/09; CWHxm1/10; CWHxm2/10
<i>Pseudotsuga menziesii</i> / <i>Polystichum munitum</i>	Douglas-fir / sword fern	Ecological Community	Red	CWHdm/04; CWHxm1/04; CWHxm2/04
<i>Pseudotsuga menziesii</i> - <i>Tsuga heterophylla</i> / <i>Gaultheria shallon</i> Dry Maritime	Douglas-fir - western hemlock / salal Dry Maritime	Ecological Community	Red	CWHdm/03; CWHxm1/03; CWHxm2/03
<i>Rhododendron groenlandicum</i> / <i>Kalmia microphylla</i> / <i>Sphagnum</i> spp.	Labrador-tea / western bog-laurel / peat-mosses	Ecological Community	Blue	CDFmm/Wb50; CWHdm/Wb50; CWHvm1/Wb50; CWHxm1/Wb50; CWHxm2/Wb50
<i>Ruppia maritima</i> Herbaceous Vegetation	beaked ditch-grass Herbaceous Vegetation	Ecological Community	Red	CDFmm/Em01; CWH/Em01
<i>Salix sitchensis</i> / <i>Carex sitchensis</i>	Sitka willow / Sitka sedge	Ecological Community	Blue	CWHvm1/Ws06; CWHvm2/Ws06; ICHvk1/Ws06; MSdc1/Ws06; MSdm1/Ws06; MSmw2/Ws06; SBSvk/Ws06; SBSwk1/Ws06
<i>Salix sitchensis</i> - <i>Salix lasiandra</i> var. <i>lasiandra</i> / <i>Lysichiton americanus</i>	Sitka willow - Pacific willow / skunk cabbage	Ecological Community	Blue	CDFmm/Ws51; CWH/Ws51; ICH/Ws51
<i>Sarcocornia pacifica</i> - <i>Lysimachia maritima</i>	American glasswort - sea-milkwort	Ecological Community	Red	CDFmm/Em02; CWH/Em02
<i>Thuja plicata</i> / <i>Carex obnupta</i>	western redcedar / slough sedge	Ecological Community	Red	CWHdm/15; CWHxm1/15; CWHxm2/15
<i>Thuja plicata</i> / <i>Lonicera involucrata</i>	western redcedar / black twinberry	Ecological Community	Red	CWHdm/14; CWHxm1/14; CWHxm2/14
<i>Thuja plicata</i> - <i>Picea sitchensis</i> / <i>Lysichiton americanus</i>	western redcedar - Sitka spruce / skunk cabbage	Ecological Community	Blue	CDFmm/Ws54; CWHdm/12; CWHdm/Ws54; CWHds1/12; CWHds1/Ws54; CWHds2/12; CWHds2/Ws54; CWHmm1/12; CWHmm1/Ws54; CWHms1/11; CWHms1/Ws54; CWHms2/11; CWHms2/Ws54; CWHvh1/13; CWHvh1/Ws54; CWHvh2/13; CWHvh2/Ws54; CWHvm1/14; CWHvm1/Ws54; CWHvm2/Ws54; CWHwh1/12; CWHwh1/Ws54; CWHwh2/06; CWHwh2/Ws54; CWHws1/11; CWHws1/Ws54; CWHws2/Ws54; CWHxm1/Ws54; CWHxm2/Ws54
<i>Thuja plicata</i> / <i>Polystichum munitum</i> - <i>Lysichiton americanus</i>	western redcedar / sword fern - skunk cabbage	Ecological Community	Blue	CDFmm/11; CDFmm/Ws53; CWHdm/Ws53; CWHxm1/12; CWHxm1/Ws53; CWHxm2/12; CWHxm2/Ws53
<i>Thuja plicata</i> / <i>Polystichum munitum</i> Dry Maritime	western redcedar / sword fern Dry Maritime	Ecological Community	Red	CWHdm/05
<i>Thuja plicata</i> / <i>Rubus spectabilis</i>	western redcedar / salmonberry	Ecological Community	Red	CWHdm/13; CWHxm1/13; CWHxm2/13
<i>Thuja plicata</i> / <i>Tiarella trifoliata</i> Dry Maritime	western redcedar / three-leaved foamflower Dry Maritime	Ecological Community	Blue	CWHdm/07
<i>Thuja plicata</i> - <i>Tsuga heterophylla</i> / <i>Polystichum munitum</i>	western redcedar - western hemlock / sword fern	Ecological Community	Blue	CWHmm1/04; CWHmm2/04; CWHvm1/04; CWHvm2/04
<i>Tsuga heterophylla</i> - <i>Abies amabilis</i> / <i>Struthiopteris spicant</i>	western hemlock - amabilis fir / deer fern	Ecological Community	Blue	CWHvm1/06; CWHvm2/06
<i>Tsuga heterophylla</i> / <i>Buckiella undulata</i>	western hemlock / flat-moss	Ecological Community	Blue	CWHdm/01
<i>Tsuga heterophylla</i> - <i>Thuja plicata</i> / <i>Gaultheria shallon</i> Very Wet Maritime	western hemlock - western redcedar / salal Very Wet Maritime	Ecological Community	Blue	CWHvm1/03; CWHvm2/03
<i>Tsuga heterophylla</i> - <i>Thuja plicata</i> / <i>Struthiopteris spicant</i>	western hemlock - western redcedar / deer fern	Ecological Community	Red	CWHdm/06; CWHxm1/06; CWHxm2/06
<i>Typha latifolia</i> Marsh	common cattail Marsh	Ecological Community	Blue	BGxh1/Wm05; BGxh2/Wm05; BGxw1/Wm05; BWBSmw/Wm05; CDFmm/Wm05; CWHdm/Wm05; CWHxm1/Wm05; CWHxm2/Wm05; IDFdC/Wm05; IDFdK1/Wm05; IDFdK2/Wm05; IDFdK3/Wm05; IDFdK5/Wm05; IDFdM1/Wm05; IDFdM2/Wm05; IDFmw1/Wm05; IDFmw2/Wm05; IDFxc/Wm05; IDFxh1/Wm05; IDFxh2/Wm05; IDFxc/Wm05; PPdh2/Wm05; PPxh1/Wm05; PPxh2/Wm05

Appendix 2
Site Photographs



Photograph 1:

Polygon A – Regenerative Forest exhibiting western hemlock and western redcedar in intermediate seral stands



Photograph 2:

Polygon B – Mature Forest exhibiting primarily mature coniferous trees with an established shrub community



Photograph 3:

**Polygon C – Riparian Forest
exhibiting young coniferous
and deciduous forest stands**



Photograph 4:

**Polygon D – Young Deciduous
Forest exhibiting a dense
forest stand of young red alder**



Photograph 5:

Tansy ragwort, listed as a provincially noxious weed, observed during a 2016 survey by PGL



Photograph 6:

Annual sow-thistle, listed as a provincially noxious weed, observed during a 2016 survey by PGL



Photograph 7:

**Invasive Himalayan blackberry
observed within the Site**



Photograph 8:

**Watercourse 1, Reach 2 which
is a constructed drainage
feature lined with geofabric
and plastic mesh**



Photograph 9:

Watercourse 1, Reach 2 which is a constructed drainage feature lined with geofabric and plastic mesh



Photograph 10:

Above surface PVC pipe within Watercourse 1 Reach 1



Photograph 11:
**Watercourse 1, Reach 1 which
is a natural stream**



Photograph 12:
**Watercourse 3, Reach 1 with
pooled water observed from
upland runoff**



Photograph 13:
Watercourse 3 Reach 2
showing evidence of
channelization, but with no
flow observed



Photograph 14:
Watercourse 3, Reach 3 shows
channelization and regular
flow



Photograph 15:

Groundwater seepage that was identified as the source of water supply for Watercourse 3, Reach 3



Photograph 16:

Watercourse 3, Reach 4 with evidence of channelization and flow observed



Photograph 17:

**Watercourse 3, Reach 5
observed dry with minor
evidence of channelization**



Photograph 18:

**Watercourse 4 that lacked
channelization and evidence of
flow**



Photograph 19:

**Watercourse 2, a constructed
drainage feature on the
southern property of the Site**



Photograph 20:

**Watercourse 5 observed as a
ponded area**



Photograph 21:

**PVC pipe that is assumed to
drain the pond during periods
of high flow of Watercourse 5**



Photograph 22:

**Wildlife tree observed with
woodpecker feeding holes**



Photograph 23:

**Wildlife tree observed with
woodpecker feeding holes**



Photograph 24:

**Evidence of previous fires
observed throughout the Site**



Photograph 25:

**Course woody debris
observed onsite providing
wildlife habitat for variety of
species**