

***Environmental Assessment and Protection Plan
for 9908 West Coast Road, Shirley, BC***

In support of Development Permit Application

Prepared for:

9908 West Coast Road
Shirley, British Columbia



Prepared by:

Corvidae Environmental Consulting Inc.
6526 Water Street
Sooke, BC

Corvidae Project No. CE 2018-103

October 2018

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	REGULATORY FRAMEWORK	3
2	ENVIRONMENTAL SITE ASSESSMENT	4
2.1	LANDSCAPE AND SOILS	4
2.2	VEGETATION	4
2.3	WILDLIFE	7
2.4	SPECIES AT RISK	8
2.5	RIPARIAN AREA AND FISHERIES	10
3	POTENTIAL ENVIRONMENTAL EFFECTS	10
4	RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES	11
5	REFERENCES	13
	APPENDIX A – SITE PHOTOGRAPHS	14

LIST OF TABLES

Table 1.	Vegetation and tree species observed on the property during field visit on September 19, 2018	5
Table 2.	Wildlife species observed on the property during field visit on September 19, 2018	7
Table 3.	Recommended mitigation measures for proposed development	11

LIST OF FIGURES

Figure 1.	Property location and environmental features	2
Figure 2.	Tree inventory in the area of proposed development	6
Figure 3.	Species at risk records in the vicinity of the property	9

LIST OF PHOTOS

Photo 1.	Photo of the steep terrain on the property from northeast corner looking toward the highway. September 19, 2018	14
Photo 2.	9908 West Coast Road from the highway. Note the rocky outcrop to the left of the driveway. September 19, 2018	14
Photo 3.	Area for proposed cabin. September 19, 2018.	15
Photo 4.	Area for proposed septic. September 19, 2018.	15



1 INTRODUCTION

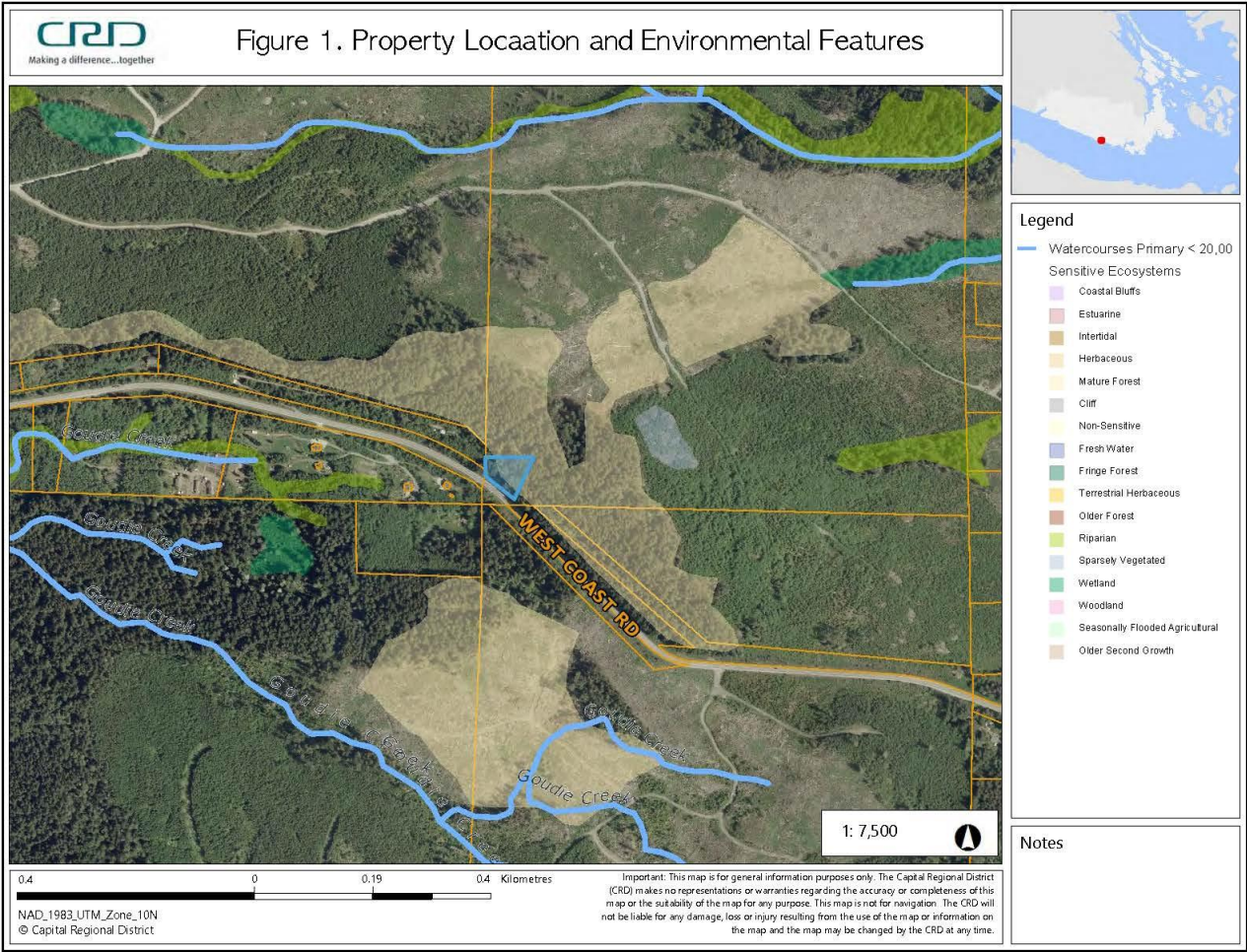
Corvidae Environmental Consulting Inc. (Corvidae) is pleased to provide this Environmental Assessment (EA) for the proposed changes to 9908 West Coast Road (PID 030-044-341; Lot A EPP 20739).

The landowner, [REDACTED] has applied for a Development Permit Application to remove trees on the property in order to construction a small dwelling and associated septic field. There are currently no buildings on the property.

The north-eastern two thirds (~64%) of the property is within a Sensitive Ecosystem Development Permit Area (DPA) in the Shirley – Jordan River Official Community Plan, Bylaw No. 4001. More specifically, the mapped Sensitive Ecosystem DPA is Mature Forest.

As part of the DPA application, a site plan and a report by a Qualified Environmental Professional (QEP) that addresses the guidelines outlined in Section 540 of Bylaw No. 4001 is required. To that end, the [REDACTED] has contracted the services of Corvidae to complete an environmental assessment of the property. This document addresses the requirements in Section 540 of Bylaw No. 4001, provides an assessment on the environmental conditions on the property, potential impacts of the proposed development, and recommendations on the suitability of the site for the proposed development.





1.1 REGULATORY FRAMEWORK

This environmental assessment is designed to comply with the provisions set out in the Shirley – Jordan River Official Community Plan, Bylaw No. 4001, for development permit areas and for compliance with the provisions for environmental protection contained in the following relevant legislation:

Municipal

- Shirley – Jordan River Official Community Plan, Bylaw No. 4001
“The Sensitive Ecosystem DPA established under this section includes those sensitive ecosystems and other important ecosystems identified as Intertidal, Estuarine, Freshwater, Older Forest, Mature Forest, Fringe Forest, Woodland, Herbaceous, Sparsely Vegetated, Wetlands, and Riparian in the Sensitive Ecosystem Inventory (SEI) prepared by Madrone Environmental in 2014. The Sensitive Ecosystem DPA includes the strip of land 30 metres from the natural boundary on either side of all watercourses.”
The objectives of the Sensitive Ecosystem DPA are detailed in Section 543 and are designed “to regulate development in a manner that:
 - i. Protects, enhances and restores the biodiversity and ecological values and functions of environmentally sensitive areas;*
 - ii. Fosters compatibility between development, existing land uses and environmentally sensitive areas;*
 - iii. Maintains connectivity between sensitive ecosystems; and*
 - iv. Protects water quality and quantity.”*

The guiding principle for the use of Development Permits is found within the Local Government Act. Development Permit Areas can be designated for purposes such as, but not limited to the following:

- Protection of the natural environment, its ecosystems and biological diversity.

Federal

- Migratory Birds Act (1994)

Provincial

- British Columbia Wildlife Act (1996)
- Invasive Species Council of British Columbia
- BC Weed Control Act (1996, current as of October 2016)



2 ENVIRONMENTAL SITE ASSESSMENT

Corvidae completed a site visit on September 19th, 2018 as part of DPA. The property is located on a steep hillside adjacent to West Coast Road (Hwy 14). A less-sloped area is present in the southeastern corner of the property. There is a graded gravel driveway that skirts the bottom edge of the property and leads on to the adjacent property. Photos of the property are included in Appendix A.

Due to the steep terrain and rocky outcrops, and the OCP-designated Sensitive Ecosystem DPA (Mature Forest), the landowners have selected the south-east corner of the property for the location of the planned development. This is the only feasible building site on the property, uses the existing access road to the property, and minimizes the intrusion into the Sensitive Ecosystem DPA (Mature Forest).

2.1 LANDSCAPE AND SOILS

The property is steeply sloped (from 15-45 degrees) towards the highway. Rocky outcrops are located throughout the upper half of the property and the western side. The area of planned activities is located in a relatively flat area in the south-eastern corner of the property.

Soils in the area are typically moderately deep Orthic Humo-Ferric Podzols with Hemimor humus forms (Pojar et al. 1991). The soils on the site were a sandy clay loam. Where rocky outcrops are present, the soil depth is shallow. In flatter areas and depressions on the property, a thick layer of organic material is present.

2.2 VEGETATION

The project is located within the Coastal Western Hemlock (CWH) biogeoclimatic zone, and specifically in the western variant of the Very Dry Maritime subzone (classified as CWHxm2). Drier subzones of the CWH are typically dominated by components of western hemlock (*Tsuga heterophylla*), Douglas-fir (*Pseudotsuga menziesii*) and western red cedar (*Thuja plicata*) (Pojar et al. 1991). Salal (*Gaultheria shallon*), dull Oregon grape (*Mahonia nervosa*), and huckleberry (*Vaccinium* sp.) typify the shrub layer. Less common species include vanilla-leaf, sword fern, twinflower, and bracken. Oregon beaked moss (*Kindbergia oregana*), step moss (*Hylocomium splendens*), lanky moss (*Rhytidiadelphus loreus*), and flat moss (*Plagiothecium undulatum*) dominate a well-developed moss layer (Pojar et al. 1991).

With the exception of the rocky outcrops, the property is heavily forested with thick understory (dominated by salal). The area to be developed is a relatively flat area with thick organic debris, and therefore, a sparse understory of salal and sword fern.

During the site assessment the species in Table 1 were found on the site.



Table 1. Vegetation and tree species observed on the property during field visit on September 19, 2018

Common Name	Scientific Name	BC Provincial Status	Sara Schedule 1 Status
Arbutus	<i>Arbutus menziesii</i>	Yellow	--
Douglas fir	<i>Pseudotsuga menziesii</i>	Yellow	--
Dull Oregon grape	<i>Mahonia nervosa</i>	Yellow	--
Evergreen huckleberry	<i>Vaccinium ovatum</i>	Yellow	--
Himalayan blackberry	<i>Rubus armeniacus</i>	Exotic	--
Oceanspray	<i>Holodiscus discolor</i>	Yellow	--
Rattlesnake-plantain	<i>Goodyera oblongifolia</i>	Yellow	--
Red alder	<i>Alnus rubra</i>	Yellow	--
Salal	<i>Gaultheria shallon</i>	Yellow	--
Scotch broom	<i>Cytisus scoparius</i>	Exotic	--
Sword fern	<i>Polystichum munitum</i>	Yellow	--
Trailing blackberry	<i>Rubus ursinus</i>	Yellow	--
Western hemlock	<i>Tsuga heterophylla</i>	Yellow	--
Western redcedar	<i>Thuja plicata</i>	Yellow	--

TREE INVENTORY IN AREA OF DEVELOPMENT

The planned development on the property will require the removal of approximately 19 mature trees. The trees to be removed include Douglas-fir, western hemlock, and western redcedar, ranging in size from 30cm to 100cm diameter-at-breast-height. Of the trees to be removed, 9 are located within the Sensitive Ecosystem DPA (Mature Forest; see Figure 2). The area selected for the planned development is the most feasible building site on the property.



[illegible]

2.3 WILDLIFE

The forested habitat is found in the Coastal Western Hemlock biogeoclimatic zone is home to many wildlife species. Black-tailed deer, black bear, marten and gray wolf are the most common large mammals in this zone on Vancouver Island. For bird species in this zone, the following typically occur: great horned owl, barred owl, ruffed grouse, band-tailed pigeon, northern flicker, hairy woodpecker, common raven, Steller's jay, chestnut-backed chickadee, red-breasted nuthatch, varied thrush, red-tailed hawk, Townsend's warbler. The following amphibians may occur: western toad, Pacific treefrog, western redbacked salamander. (Pojar et al. 1991).

The property is predominately mature forest with thick understory and complex terrain. This provides abundant habitat for breeding birds and small mammals. No wildlife species of concern were observed in the project area during the site visit. No dens, burrows or nests were found; however, detection of birds' nests in the tall trees or the mature forest is very low. Only terrestrial habitat is present for amphibians.

The proposed development area contains mature trees that provides nesting habitat for birds. Sparse understory in the area to be cleared provides little structural habitat and cover for nesting birds or small mammals, and does not provide browse for ungulates.

During the site assessment the species listed in Table 2 were observed on the site.

Table 2. Wildlife species observed on the property during field visit on September 19, 2018

Common Name	Scientific Name	BC Provincial Status	Sara Schedule 1 Status
Mammals			
Douglas' squirrel	<i>Tamiasciurus douglasii</i>	Yellow	--
Black-tailed Deer (scat)	<i>Odocoileus hemionus columbianus</i>	Yellow	--
Birds			
Cedar waxwing	<i>Bombycilla cedrorum</i>	Yellow	--
Common raven	<i>Corvus corax</i>	Yellow	--
Golden-crowned kinglet	<i>Regulus satrapa</i>	Yellow	--
Hermit thrush	<i>Catharus guttatus</i>	Yellow	--
Northern flicker	<i>Colaptes auratus</i>	Yellow	--
Pacific wren	<i>Troglodytes pacificus</i>	Yellow	--
Red-tailed hawk	<i>Buteo jamaicensis</i>	Yellow	--

Northern Pacific treefrogs (*Pseudacris regilla*) were heard calling in the distance during the site assessment, presumably from the wetland located approximately 180m east of the property boundary. No suitable habitat for breeding amphibians is present on the property.

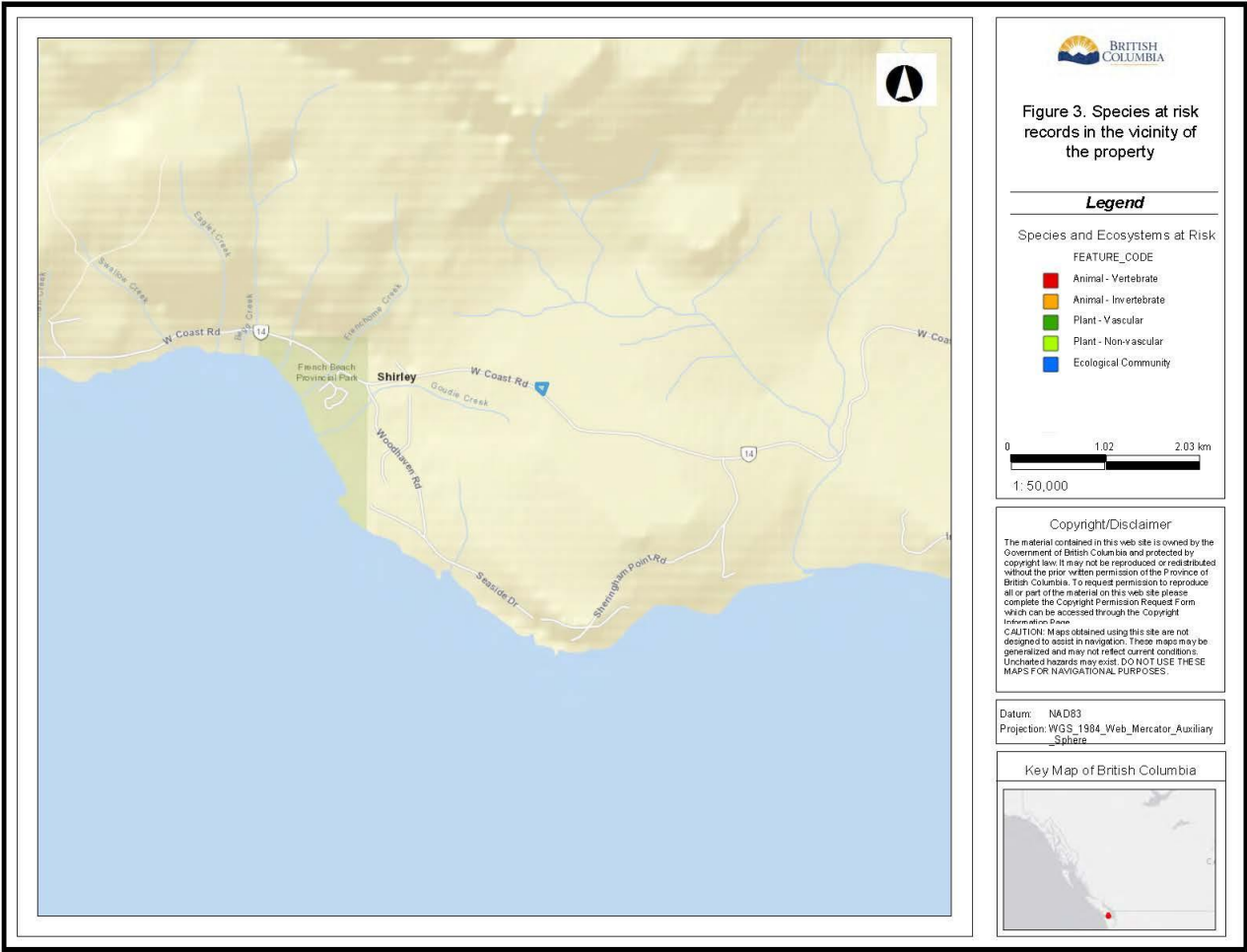


2.4 SPECIES AT RISK

A query of the B.C. Conservation Data Centre (CDC) iMap tool (Figure 3) yielded no occurrences of vegetation or wildlife species or ecosystems at risk within a two-kilometer radius of the property (B.C. CDC 2018).

Notably, an absence of occurrences does not illicit a confirmation that vegetation species or ecosystems at risk do not occur in the project area, and rather, the result may be due to the lack of previous biological survey of the area.





2.5 RIPARIAN AREA AND FISHERIES

No watercourses or wet areas were observed on site during the field assessment. No records of watercourses or waterbodies on the property exist.

The closest watercourse is an arm of Goudie Creek, 370m west of the property, on the opposite side of the highway.

3 POTENTIAL ENVIRONMENTAL EFFECTS

The potential impacts from the project on the environment will be loss of existing vegetation, specifically mature trees, and disturbance of soils. During tree clearing and project construction, there will be heavy equipment and noise on the site. The property is located in an area with other rural properties (across the highway and to the west), so there is an existing level of anthropogenic noise at the site already.

Tree removal will result in permanent loss of mature trees in the development area, wildlife habitat disturbance and increased susceptibility to invasive plants in the cleared area and adjacent plant communities. Clearing and maintaining an opening in an early seral stage changes the conditions (e.g., temperature, humidity) in adjacent plant communities; however, the development area is very close to the road corridor and therefore the impact is expected to be minimal.

Reduced habitat effectiveness can occur as a result from the creation of habitat edges, habitat fragmentation, or sensory disturbance (e.g., noise, artificial light, proximity to facilities and infrastructure, human activity and traffic). The effectiveness of wildlife habitat may be affected by sensory disturbance such as noise associated with tree clearing and construction. Due to the proximity to the road, these impacts are expected to be minimal.

Wildlife mortality has the potential to occur due to loss or disruption of habitat (e.g., clearing and soil handling has potential to destroy nests, dens, overwintering sites) and sensory disturbance (i.e., nest abandonment). Given the implementation of the mitigation measures recommended in Section 4, these impacts will be avoided or reduced.

The environmental disturbance on the property will be short-term, spatially-localized, located in an area of moderate habitat value, and is close to existing disturbance and is therefore determined to be non-significant. The project impacts are not expected to affect vegetation or wildlife populations such that the objectives of the Sensitive Ecosystem DPA (Mature forest) may not be attainable.



4 RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES

Corvidae recommends the implementation of mitigation measures to avoid, minimize, restore and offset the impacts of the proposed development.

Activities that have the potential to impact the environment are removal of vegetation and trees, ground disturbance activities during clearing and construction, and construction debris being improperly disposed of or left in vegetated areas. The following table provides the environmental protection measures for clearing and building in the proposed development area:

Table 3. Recommended mitigation measures for proposed development

Component	Mitigation Measures
Erosion and Sediment Control	<p>To minimize erosion from wind and water an Erosion and Sediment Control Plan, to be provided prior to construction, will be implemented.</p> <ul style="list-style-type: none"> Silt fencing placed in all areas with the potential to drain sediments into streams, ditches or drainages, including the downslope edge of proposed development area.
Vegetation and Invasive Plants	<ul style="list-style-type: none"> Cleared areas, especially those where clearing is required for extra work space, will be revegetated or landscaped with native and horticultural species to stabilize soil from wind and water erosion and to prevent establishment of weed species. To control and minimize the spread of invasive weeds on the site, all machinery should be clean before arrival onto the site to ensure that weed seeds and other propagules (e.g. pieces of root) are not brought into the project area. To offset the removal of trees in the Mature Forest Sensitive Ecosystem Area, the landowner will undertake to remove invasive plants in other locations where they occur on the property (e.g., scotch broom on the rocky outcrop adjacent to the development area).
Wildlife and Wildlife Habitat	<ul style="list-style-type: none"> Clearing and grading activities are recommended outside of the general nesting period for breeding birds from March 25 to August 10 (Government of Canada 2018). For some species, specific timing restrictions for sensitive nesting periods apply and should be considered. The breeding window for raptors, such as eagles and osprey, extends from January to September (Ministry of Environment 2014). If this is not possible, a Qualified Environmental Professional (QEP) must conduct pre-construction surveys (a minimum of three) to identify any nesting activity within the footprint and recommend appropriate mitigation. If vegetation clearing or construction is scheduled within the sensitive time period for breeding birds, a QEP should conduct nest search surveys a maximum of 7 days prior to the start of activities. The search will include the project footprint and adjacent areas to coincide with recommended wildlife setback distances, where land access allows. If an active nest is discovered during nest searched or clearing activities, the nest will be subject to site-specific mitigation measures (e.g. protective buffer around the nest or unobtrusive monitoring) until the young have naturally fledged/left the area. The results of a nest search are valid for 7 days. If construction activities are



Component	Mitigation Measures
	<p>initiated 7 days or more since clearing or completion of a nest search, an additional nest search is required before activities commence.</p> <ul style="list-style-type: none">• Boundaries of clearing should be clearly marked and tree clearing should be limited to the trees identified for clearing.• In the event any additional wildlife habitat features (e.g., active dens, snake hibernacula) are identified prior to or during construction they will be subject to site-specific mitigation measures that will be developed in consultation with the appropriate regulators.

Report Prepared By:



Jessica Harvey, R.P.Biol., M.Sc.,
Environmental Planner/Wildlife Biologist
Corvidae Environmental Consulting Inc.



5 REFERENCES

- British Columbia Conservation Data Centre: CDC iMap [web application]. 2018. Victoria, British Columbia, Canada. Available: <http://maps.gov.bc.ca/ess/sv/cdc/> (Accessed September 2018).
- British Columbia Ministry of Environment. 2014. Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia. Available at: <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-standards-and-guidance/best-management-practices/develop-with-care>.
- Capital Regional District (CRD). 2017. *Shirely - Jordan River Official Community Plan, Bylaw No. 4001*
- Capital Regional District (CRD). 2018. CRD Regional Mapping. Victoria, British Columbia, Canada. Available at: <https://maps.crd.bc.ca/Html5Viewer/?viewer=public> (Accessed September 2018).
- Environmental Canada. 2018. General nesting periods of migratory birds. Available at: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html#_01_2 (accessed March 24, 2018).
- Pojar, J., K. Klinka, and D.A. Demarchi. 1991. Coastal Western Hemlock Zone. In *Ecosystems of British Columbia*. D. Meidinger and J. Pojar (editors). B.C. Ministry of Forestry, Victoria, B.C. Spec. Rep. Ser 6. Pp 95-111.



APPENDIX A – SITE PHOTOGRAPHS

Photo 1. Photo of the steep terrain on the property from northeast corner looking toward the highway. September 19, 2018.



Photo 2. 9908 West Coast Road from the highway. Note the rocky outcrop to the left of the driveway. September 19, 2018.



Photo 3. Area for proposed cabin. September 19, 2018.



Photo 4. Area for proposed septic. September 19, 2018.

