Appendix 3: Environmental Assessment Report

590 Seedtree Road Environmental Overview Assessment

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Down to Earth Biology

AUTHORSHIP

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1 INTRODUCTION

EDI Environmental Dynamics Inc. (EDI) was retained by 0906978 BC Ltd. (the Owner) to conduct an environmental assessment (EA) for a proposed development at 590 Seedtree Road in East Sooke. Portions of this lot are within Sensitive Ecosystem Development Permit Areas due to the presence of mapped Older Second Growth Forest ecosystems. The Owner is seeking to rezone the property and to receive a Development Permit (DP) for a strata development to construct three homes along with ancillary developments. A site assessment was made to review specific development plans and identify environmental issues and/or potential environmental constraints at each of the three house sites. The goal of this EA report is to satisfy local government (Capital Regional District) information requirements to support the rezoning and DP applications.

2 METHODS

A background information review was completed prior to conducting the on-site field survey. The field survey was completed by EDI (Pablo Jost R.P.Bio) on September 26, 2018.

2.1 BACKGROUND INFORMATION REVIEW

Background information was gathered for fish, wildlife and vegetation, including invasive species, using data available through several online databases and literature review. Through the use of these databases, preliminary lists were developed for ecosystem types, known species occurrence records, and potential for species at risk. The databases that were queried included:

- CDC iMap: Mapped Known Locations of Species and Ecological Communities at Risk (http://maps.gov.bc.ca/ess/sv/cdc/)
- Ministry of Environment BC Species and Ecosystem Explorer (http://a100.gov.bc.ca/pub/eswp/)
- EcoCat (Provincial Ecological Reports Catalogue) (http://www.env.gov.bc.ca/ecocat/)
- Wildlife Tree Stewardship Atlas (http://wildlifetree.ca/atlas.html)
- Ministry of Environment HabitatWizard (http://www.env.gov.bc.ca/habwiz/)

2.2 FIELD ASSESSMENT

The field assessment focused on identifying aquatic and terrestrial environmentally sensitive features at the anticipated sites of new development as well as adjacent sensitive features that could be affected by the project. Each proposed development site was visited with the Owner to determine the nature and extent of all planned developments.

Vegetation inventories, including invasive species, were completed and ecosystems were documented and characterized according to the Biogeoclimatic Ecosystem Classification (BEC) system (Green and Klinka 1994).

Evidence of wildlife utilization observed was recorded including direct observations, vocalizations, tracks, game trails, scat, browsed vegetation, bones, feathers and nests. Utilization was deduced from an analysis of habitat features, observations and evidence of utilization. Habitat types were assessed with a focus on determining suitability for species at risk potentially occurring on site.

An overview level assessment of the forested areas adjacent to the study area was also conducted to determine the potential for significant features that could be disrupted, disturbed or otherwise adversely impacted by development (i.e. raptor nests, watercourses and riparian areas).

3 RESULTS

3.1 GENERAL DESCRIPTION

The property is located within the Coastal Western Hemlock Eastern Very Dry Maritime (CWHxm1) biogeoclimatic (BGC) unit less than 1.5 km north of the ocean (Beecher Bay). The property has a generally steep topography. The south end, adjacent to Seedtree Road is flat but quickly rises to a greater than 30% slope to the top of the lot. The lot has a south to south easterly exposure. The three planned buildings are shown in the Appendix A site plan. For this report the three strata lots are called SL 2, SL 3 and SL 4 which is consistent with the site plan. An existing house is located on the south west corner of the lot which will not be developed further and is designated as SL 1.

3.2 BACKGROUND INFORMATION REVIEW

3.2.1 SENSITIVE ECOSYSTEM INVENTORY POLYGONS

As referenced by the East Sooke Official Community Plan (OCP), Schedule E map indicates that there is a Sensitive Ecosystem polygon that overlaps with the subject property (Appendix C). The polygon shown is Older Second Growth Forest, which was originally mapped by the provincial Sensitive Ecosystem Inventory (East Vancouver Island & Gulf Islands project). Sensitive Ecosystem Inventory (SEI) polygons were typically mapped at scales of 1:10,000 or 1:15,000.

The Older Second Growth Forest polygon (C0988-R1 SG:co/HT:ro) is identified as having second growth coniferous forest as the primary ecosystem type (SG:co) and terrestrial herbaceous with rock outcrops as the secondary ecosystem type (HT:ro). The SEI program describes second growth forest as "large stands of conifer dominated forest between 60 and 100 years old". These areas were included in the SEI due to their "general biodiversity and wildlife habitat values." The SEI summarizes: "older Second Growth Forests are the most common forested ecosystem in the SEI study area. They function as both essential habitat areas for many wildlife species, and as primary connections between ecosystems in the highly fragmented landscape of the Georgia Basin. All Second Growth Forests have been disturbed by logging or other human

disturbance since the settlement of Vancouver Island and the Gulf Islands began in the middle of the 19th century."

3.2.2 WATERCOURSES

The thirty meter riparian buffer of a mapped watercourse intersects with the small portion of the property in the southwest corner.

3.2.3 KNOWN AND HISTORIC OCCURRENCES

Known locations of all plant, fish and wildlife species and ecological communities at risk were examined using the *CDC iMap* application to determine if there are any records of listed species in the project area. This online mapping tool reports the known occurrence of provincial Red- and Blue- listed species and ecological communities. The search included all listed wildlife, vascular and non-vascular plants, fish, invertebrates and ecological communities. The *CDC iMap* showed no rare element occurrences overlapping the project area.

3.2.4 POTENTIAL FOR OCCURRENCE

A search of the *BC Species and Ecosystem Explorer* for rare plant and wildlife species indicated the potential for a number of species to occur in this general area, although the search parameters were broad in scope, to ensure that no potential species were omitted. Rare plant species were defined to include vascular and non-vascular plant species while rare wildlife species were defined to include vertebrate and invertebrate species. Rare species included those listed on Schedule 1 of the federal *Species at Risk Act* (SARA) as amended, and species on the BC Ministry of Environment's provincial Red or Blue lists. The search parameters used to obtain these results were for species occurring in the Capital Regional District for the CWH BGC zone. This list was further refined based on site-specific factors, including habitat types known to occur within the project area and species current known ranges. A search of the *BC Species and Ecosystem Explorer* was also conducted for rare ecological communities that could potentially occur in the project area within the CWHxm1. This list was also refined based on site-specific factors.

The background review identified three vascular and three non-vascular moss species at risk that have the potential to occur within the project area (Table 1).

Table 1. Plant species at risk with potential for occurrence within the project area

Common Name	Scientific Name	COSEWIC	SARA	BC List
dicranodontium moss	*Dicranodontium asperulum*	-	-	Blue
five-ranked peat moss	*Sphagnum quinquefarium*	-	-	Blue
Howell's violet	*Viola howellii*	-	-	Red
leafy mitrewort	*Mitellastra caulescens*	-	-	Blue
platyhypnidium moss	*Platyhypnidium riparioides*	-	-	Blue
Smith's fairybells	*Prosartes smithii*	-	-	Blue

The background review identified a total of 28 at risk wildlife species including three amphibian species, six avian species, six mammal species and 13 invertebrate species at risk that have the potential to occur within the project area (Table 2).

Table 2. Wildlife species at risk with potential for occurrence within the project area

Common Name	Scientific Name	COSEWIC*	SARA*	BC List
American Water Shrew, *brooksi* subspecies	*Sorex palustris brooksi*	-	-	Red
Autumn Meadowhawk	*Sympetrum vicinum*	-	-	Blue
Band-tailed Pigeon	*Patagioenas fasciata*	SC (Nov 2008)	1-SC (Feb 2011)	Blue
Barn Swallow	*Hirundo rustica*	T (May 2011)	-	Blue
Blue Dasher	*Pachydiplax longipennis*	-	-	Blue
Broadwhorl Tightcoil	*Pristiloma johnsoni*	-	-	Blue
Common Nighthawk	*Chordeiles minor*	T (Apr 2007)	1-T (Feb 2010)	Yellow
Dromedary Jumping-slug	*Hemphillia dromedarius*	T (May 2014)	1-T (Jan 2005)	Red
Edwards' Beach Moth	*Anarta edwardsii*	E (Apr 2009)	1-E (Feb 2011)	Red
Ermine, *anguinae* subspecies	*Mustela erminea anguinae*			Blue
Great Blue Heron, *fannini* subspecies	*Ardea herodias fannini*	SC (Mar 2008)	1-SC (Feb 2010)	Blue
Johnson's Hairstreak	*Callophrys johnsoni*			Red
Keen's Myotis	*Myotis keenii*	DD (Nov 2003)	3 (Mar 2005)	Blue
Little Brown Myotis	*Myotis lucifugus*	E (Nov 2013)	1-E (Dec 2014)	Yellow
Meadow Rams-horn	*Planorbula campestris*			Blue
Monarch	*Danaus plexippus*	SC (Apr 2010)	1-SC (Jun 2003)	Blue
Northern Pygmy-Owl, *swarthi* subspecies	*Glaucidium gnoma swarthi*			Blue
Northern Red-legged Frog	*Rana aurora*	SC (May 2015)	1-SC (Jan 2005)	Blue
Olive-sided Flycatcher	*Contopus cooperi*	T (Nov 2007)	1-T (Feb 2010)	Blue
Prairie Fossaria	*Galba bulimoides*			Blue
Roosevelt Elk	*Cervus elaphus roosevelti*			Blue
Sunset Physa	*Physella virginea*			Blue
Townsend's Big-eared Bat	*Corynorhinus townsendii*			Blue
Wandering Salamander	*Aneides vagrans*	SC (May 2014)		Blue
Warty Jumping-slug	*Hemphillia glandulosa*	SC (Apr 2013)	1-SC (Jan 2005)	Red
Western Thorn	*Carychium occidentale*			Blue
Western Toad	*Anaxyrus boreas*	SC (Nov 2012)	1-SC (Jan 2005)	Blue
Zerene Fritillary, bremnerii subspecies	*Speyeria zerene bremnerii*	T (May 2014)	1-T (Jan 2005)	Red

* COSEWIC/SARA Codes: SC: Special Concern; T: Threatened; NAR: Not at Risk; E: Endangered.

The background review identified a total of 5 at risk forested ecological communities that have the potential to occur within the project area (Table 3). Dry/Mesic forests were included in the search parameters due to the known site-specific characteristics of the project area. It should be noted that an occurrence of the listed site series does not indicate an occurrence of the associated ecological community; rather, it identifies the potential for that ecological community to occur there, which typically occurs at the climax state. In forested ecosystems, this is represented by old forest stands.

Table 3. Ecological communities at risk with potential for occurrence within the project area

Common Name	Scientific Name	BC List	BGC Unit	Ecosystem Group
western hemlock - Douglas-fir / Oregon beaked-moss	*Tsuga heterophylla - Pseudotsuga menziesii / Eurhynchium oreganum*	Red	CWHxm1/01	Terrestrial - Forest: Coniferous - mesic
arbutus / hairy manzanita	*Arbutus menziesii / Arctostaphylos columbiana*	Red	CWHxm1/00	Terrestrial - Forest: Broadleaf - dry
Douglas-fir - lodgepole pine / grey rock-moss	*Pseudotsuga menziesii - Pinus contorta / Racomitrium canescens*	Red	CWHxm1/02	Terrestrial - Forest: Coniferous - dry
Douglas-fir - western hemlock / salal Dry Maritime	*Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon Dry Maritime*	Blue	CWHxm1/03	Terrestrial - Forest: Coniferous - dry
Douglas-fir / sword fern	*Pseudotsuga menziesii / Polystichum munitum*	Blue	CWHxm1/04	Terrestrial - Forest: Coniferous - dry

3.3 FIELD RESULTS

The field survey included verification of ecological communities, current wildlife values, wildlife uses, plant species and aquatic habitat values.

3.3.1 WATERCOURSES AND FISH HABITAT

No unmapped watercourses were observed on the property. The only watercourse near the property is the small, ditched stream that is within 30 m of the southwest corner of the property. The stream drains from a wetland that is located further east along Seedtree Road. The wetland is on the south side of the road and the small stream crosses the road through a culvert and flows into the uppermost extent of the mapped portion of the stream (therefore, the mapped stream does not terminate at near the subject property). There are no planned developments within 30 m of the small, ditched stream so it was not assessed in greater detail.

3.3.2 VEGETATION AND ECOLOGICAL COMMUNITIES

The overall project area is located in the Coastal Western Hemlock Very Dry Maritime (CWHxm1) BGC unit. Dry mature mixed forest was the dominant ecosystem throughout the property. The terrestrial herbaceous with rock outcrops as the secondary ecosystem type (HT:ro) within the SEI polygon was not encountered on the property. Access to the three planned strata lots is along an existing access road, which will be altered in some areas to minimize the steepness of the grade. The SL 2 site is in the northwest portion of the lot and is on a flat knoll and consist of younger second growth with a single large Douglas fir veteran. This site is classified as Douglas-fir - western hemlock / salal Dry Maritime (CWHxm1-03) consisting of Douglas fir and Western Hemlock overstory and lacks arbutus. The understory is primarily salal and dull-Oregon grape. SL 3 is on the northern edge of the lot east of SL 2 and is currently disturbed site with some regenerating conifers and two larger Douglas firs. In this area the dry Douglas-fir - lodgepole pine / grey rock-moss Very Dry Maritime (CWHxm1-02) ecosystem occurs. The vegetation in the

CWHxm1-02 consisted of Douglas-fir, lodgepole pine and arbutus with salal, dull Oregon-grape, baldhip rose, ocean-spray, sword fern and step moss in the understory. SL 4 is a predominantly open, disturbed dry site in the northeast portion of the lot. In this area the dry Douglas-fir - lodgepole pine / grey rock-moss Very Dry Maritime (CWHxm1-02) ecosystem occurs in a Pole/Sapling stage of structural development. In a climax state (typically old forest), these ecosystems are provincially Red-listed; however, as these are not old, mature forested ecosystems, they do not meet the criteria for listed ecological communities.

There were no federally listed (Species at Risk Act) or provincially listed plant species observed during the survey; however, a rare plant survey was not attempted as it is late in the year (a rare plant survey is not warranted or required for this site).

The invasive species observed included Scotch broom, Common Foxglove and thistle spp along the existing driveway access to Strata lots 2, 3 and 4, on the disturbed portions of the lot. No noxious weeds, listed and managed under the *BC Weed Control Act* (1996) were observed.

Several large, older veteran Douglas fir trees were observed throughout the site; however, the majority of larger trees were likely in the 70-100 year range which confirms the SEI's mapping of Older Second Growth Forest in the area. The majority of the snags encountered consisted of medium to large Douglas fir snags with varying wildlife values for foraging, roosting and cavity nest building.

3.3.3 WILDLIFE

Limited sign or observations of wildlife, other than bird species including Red-breasted Nuthatch, Pileated Woodpecker, Red Crossbill, American Robin, Pacific Wren, Band-tailed Pigeon, Turvey Vulture, Hairy Woodpecker, Dark-eyed Junco, Golden-crowned Kinglet, Purple Finch, Chestnut-baked Chickadee and Northern Flicker, occurred during the field assessment. No game trails were observed.

No raptors nests or songbird nests were noted in or adjacent to the project area. A few snags and trees with evidence of sapsucker and woodpecker foraging as well as cavities occurred throughout the forested areas in the larger snags.

A large flock of approximately thirty of the provincially Blue-listed Band-tailed Pigeon were observed flying above the property.

4 DISCUSSION

The planned strata development includes construction of three houses and ancillary developments, all of which are shown in their approximate locations on the site plan (Appendix A) including septic areas, driveways, access corridors, and wells. Each house site will contain a small yard area immediately surrounding the house. The nature and extent of planned development within the property is very limited to relatively small, isolated areas. The vast majority of the property will remain intact and undisturbed. The proponent is seeking to retain the natural values, aesthetics and privacy that the forested areas provide. The driveway to the sites is located along an existing shared driveway.

The planned developments overlap with the mapped Older Second Growth SEI polygon and it was confirmed in the field that some older trees are present throughout the subject property, but this in itself is not considered to be a substantial ecological concern. The SEI program considers Older Second Growth forest as "large stands of conifer dominated forest between 60 and 100 years old". These areas were not mapped due to their fragility or rarity; rather, they were included in the SEI due to their "general biodiversity and wildlife habitat values." The SEI summarizes: "older Second Growth Forests are the most common forested ecosystem in the SEI study area. They function as both essential habitat areas for many wildlife species, and as primary connections between ecosystems in the highly fragmented landscape of the Georgia Basin. All Second Growth Forests have been disturbed by logging or other human disturbance since the settlement of Vancouver Island and the Gulf Islands began in the middle of the 19th century." The terrestrial herbaceous with rock outcrops as the secondary ecosystem type (HT:ro) was not encountered on the property.

In a climax state (typically old forest), the identified ecosystems within the Project area are provincially Red-listed; however, as these are not mature forested ecosystems, they do not meet the criteria for listed ecological communities.

Few larger trees and no substantial, large veteran trees are going to be removed. Much of the property is to be left intact. The Owner has constructed similar strata developments within East Sooke at the end of Cole Road and Seedtree Road, which required DPs due to the presence of Older Second Growth SEI polygons. These developments were all planned around retaining the natural forest environment as much as possible for aesthetics and privacy and resulted in a minimized impact to the natural environments.

As no rare species except for the Band-tailed Pigeon (a blue-listed bird) were observed on the site and as the planned developments minimizes disturbance to forested ecosystems, the planned developments are not expected to result in significant environmental impacts. It is our opinion that the current planned developments are appropriate in terms of minimizing impacts and retaining ecological values of the site.

5 RECOMMENDATIONS

The primary objectives for construction of the proposed development with respect to terrestrial, aquatic and wildlife habitat are to minimize the potential for negative impacts to sensitive ecosystem and habitat features, minimize the clearing of natural vegetation and avoiding encroachment into riparian areas.

The following list of recommendations has been provided to ensure the negative impacts to sensitive ecosystems, important habitat features and wildlife does not occur:

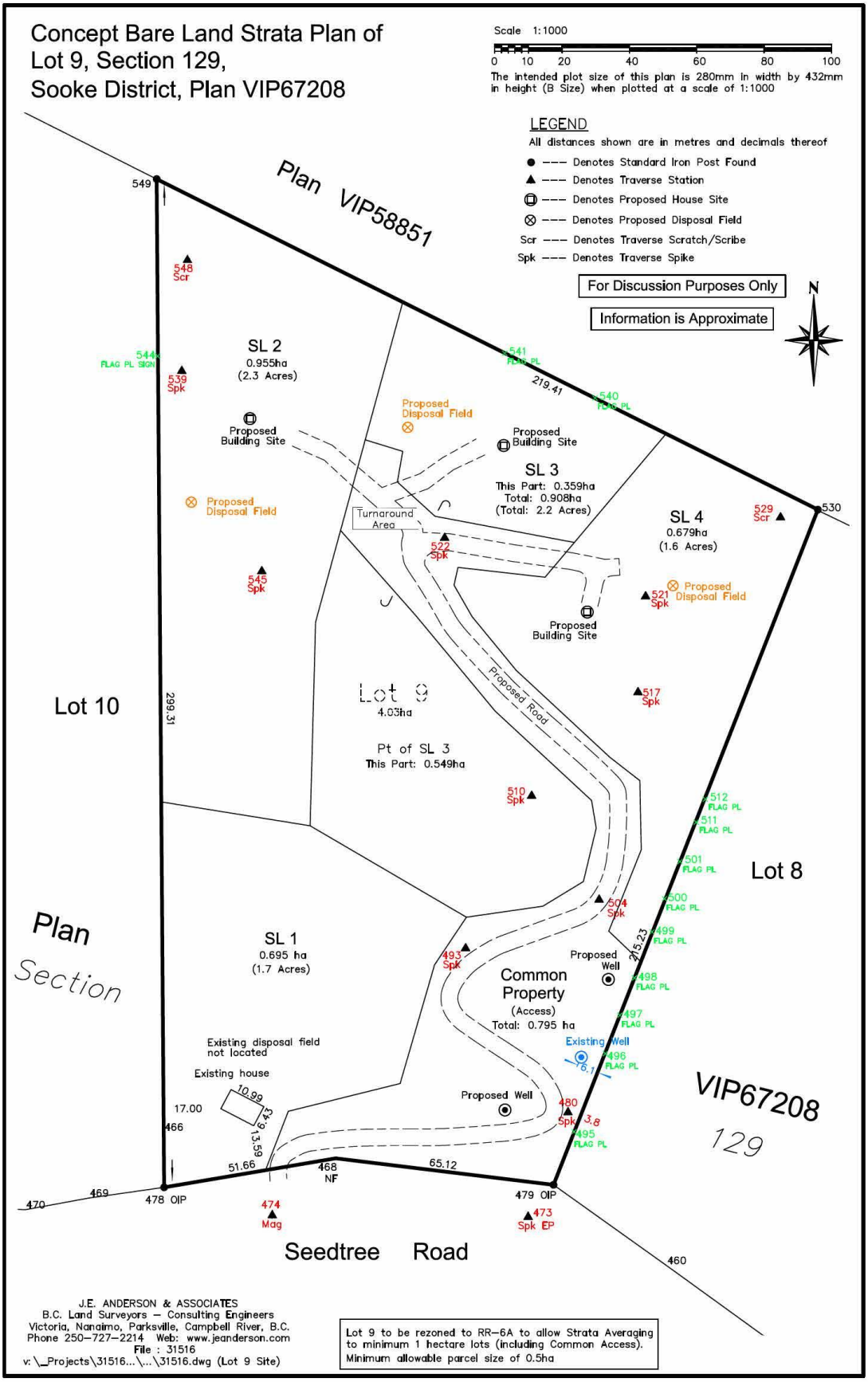
- Section 34(c) of the *Wildlife Act* prohibits the disturbance of a bird, egg, or nest while the nest is occupied. In addition, the Migratory Birds Convention Act prohibits disturbance or destruction of the nest of a migratory bird. If possible, any clearing should be conducted outside of the typical bird breeding period of March 1st to August 31st to prevent the need for a bird nest survey and the incidental loss of any unidentified nests.

- If any clearing of potential nesting vegetation is undertaken during the typical bird breeding period (March 1st to August 31st) it should be immediately preceded by a bird nest site survey of the area to be cleared. Active nest sites should be identified and flagged so that nest sites can be left undisturbed until the young birds have fledged and left the nest. If clearing cannot be completed within 5 days of the initial nest survey, an additional survey will be required to identify any new nests that may have been created.
- Standard measures should also be implemented throughout the site on an as-needed basis to prevent erosion and the introduction of sediment into riparian areas:
    - Driveway improvements and/or earthworks in the vicinity (50 m) of the ditched stream should not be conducted during heavy rainfall events.
    - During construction, exposed slopes or stockpiled soils shall be protected from erosion during significant rainfall events by covering with poly, tarps or straw mulch or by containing with silt fencing.
    - Upon completion of construction, exposed soils, including driveway embankments shall be immediately protected from erosion (gravel, grass seed and straw mulch, landscaping, erosion control blankets etc.).
    - The driveway surfaces and parking areas shall consist of clean, coarse gravel material.
    - During construction, runoff should be managed to prevent sediment laden runoff from entering the ditched stream.
- Any trees and shrubs used for landscaping should consist of species native to Vancouver Island. Recommended species include fruit, seed or berry producing shrub and tree species which provide food sources for many wildlife species.
- Care should be taken during construction to avoid unnecessary damage to adjacent vegetation and tree roots. No vegetation removal or other development shall occur within 30 m of the ditched stream.
- Planned construction provides and opportunity to remove invasive species (Scotch broom, Common Foxglove and thistle) is this is encouraged wherever such species are encountered. Refer to the fact sheets found here for appropriate mechanical removal methods and disposal: https://bcinvasives.ca/resources/tips/.

6 REFERENCES

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region. Province of British Columbia, Research Branch, Ministry of Forests, Victoria, BC.

APPENDIX A. SITE PLAN


Concept Bare Land Strata Plan of
Lot 9, Section 129,
Sooke District, Plan VIP67208
Scale 1:1000
0 10 20 40 60 80 100
The intended plot size of this plan is 280mm in width by 432mm in height (B Size) when plotted at a scale of 1:1000
LEGEND
All distances shown are in metres and decimals thereof
● --- Denotes Standard Iron Post Found
▲ --- Denotes Traverse Station
--- Denotes Proposed House Site
--- Denotes Proposed Disposal Field
Scr --- Denotes Traverse Scratch/Scribe
Spk --- Denotes Traverse Spike
For Discussion Purposes Only
Information is Approximate
N
Plan VIP58851
549
548 Scr
544 FLAG PL SIGN
539 Spk
SL 2
0.955ha
(2.3 Acres)
541 FLAG PL
219.41
540 FLAG PL
Proposed Disposal Field
Proposed Building Site
Proposed Building Site
SL 3
This Part: 0.359ha
Total: 0.908ha
(Total: 2.2 Acres)
Proposed Disposal Field
Turnaround Area
522 Spk
SL 4
0.679ha
(1.6 Acres)
529 Scr
530
545 Spk
521 Spk
Proposed Disposal Field
Proposed Building Site
Lot 10
299.31
Lot 9
4.03ha
Proposed Road
517 Spk
Pt of SL 3
This Part: 0.549ha
510 Spk
512 FLAG PL
511 FLAG PL
501 FLAG PL
Lot 8
500 FLAG PL
499 FLAG PL
504 Spk
215.23
Plan
Section
SL 1
0.695 ha
(1.7 Acres)
493 Spk
Proposed Well
Common Property
(Access)
Total: 0.795 ha
498 FLAG PL
497 FLAG PL
Existing disposal field not located
Existing Well
496 FLAG PL
6.1
Existing house
10.99
17.00
466
6.42
13.59
51.66
468 NF
65.12
Proposed Well
480 Spk
3.8
495 FLAG PL
VIP67208
129
470
469
478 OIP
474 Mag
479 OIP
473 Spk EP
Seedtree Road
460
J.E. ANDERSON & ASSOCIATES
B.C. Land Surveyors – Consulting Engineers
Victoria, Nanaimo, Parksville, Campbell River, B.C.
Phone 250–727–2214 Web: www.jeanderson.com
File : 31516
v: _Projects\31516...\...\31516.dwg (Lot 9 Site)
Lot 9 to be rezoned to RR–6A to allow Strata Averaging to minimum 1 hectare lots (including Common Access).
Minimum allowable parcel size of 0.5ha

APPENDIX B. PHOTOGRAPHS

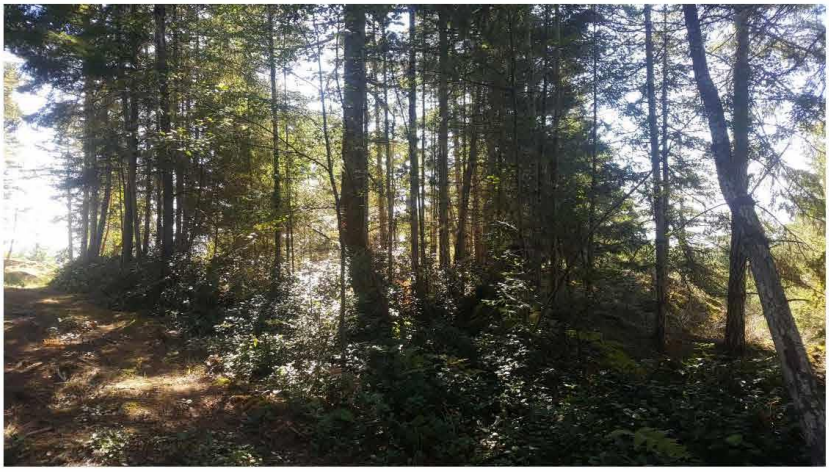


Photo 1. **Representative view of forest near SL 2.**

Photo 2. **Representative view of forest near SL 3. Pole sapling with a large Douglas fir with clearing in foreground.**

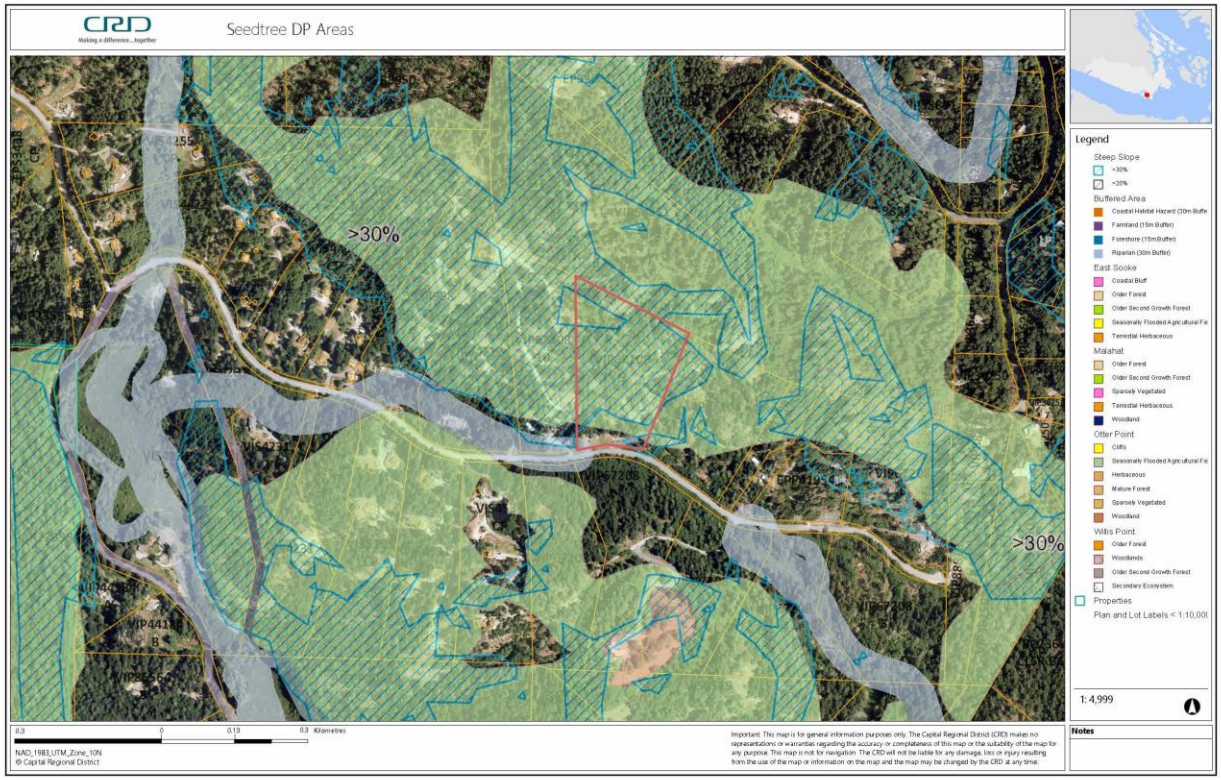
Photo 3. **Representative view of forest adjacent to SL 4 note disturbed site and invasive Scotch broom.**

Photo 4. **Representative view of access road looking downslope from SL 4 some invasive Scotch Broom in foreground.**

Photo 5. Example of invasive species (Scotch broom) observed along/near existing access road.

Photo 6. Existing access road to Strata Lots 2, 3 and 4.

APPENDIX C. CRD DEVLOPMENT PERMIT AREA


Seedtree DP Areas
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>30%
Legend
Steep Slope
Buffered Area
East Sooke
Malahat
Otter Point
Willis Point
Properties
1:4,999
Notes
NAD_1983_UTM_Zone_10N
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