



Ecological Overview of District Lot 15

Galiano Island

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1 Summary

Keefer Ecological Services Ltd. (KES) was contracted to provide a reconnaissance-level ecological overview of Lot 'A' of District Lot 15, Galiano Island, Cowichan District, Plan 22128 to support a rezoning application (PLRZ20240003) to the Galiano Island Local Trust. On 30 January 2026, one registered professional biologist (RPBio) from KES visited District Lot 15 and completed six visual plots, confirmed previously mapped sensitive ecosystems (riparian and wetland), and walked the entirety of the property to document other ecological characteristics of the site. Prior to the site visit, ecosystem polygons and sensitive ecosystems were mapped in GIS to guide data collection in the field. Upon completion of the field visit, the collected data were used to refine the polygons and create an ecosystem map for the property. Site photos and additional information collected during the site visit are included in this report.

2 Property Location and Identification

The property is known as Lot 'A' of District Lot 15, Galiano Island, Cowichan District, Plan 22128 and is located at 48.903, -123.365 (Figure 1).

3 Indigenous Land Acknowledgement

District Lot 15 lies in the traditional territories of Penelakut, Hw'litsum, and Tsawwassen First Nations, and other Hul'qumi'num-speaking peoples.

4 Land Owner Acknowledgement

The owner hereby acknowledges and agrees that the following is an accurate description of the property, as of the reference date of this agreement.

5 General Description

Lot 'A' of District Lot 15, Galiano Island, Cowichan District, Plan 22128 ("District Lot 15") is an approximately 8.0 ha (19.7 hectare) property on the southern end of Galiano Island, British Columbia (BC). The property is bordered on the north side by a BC Hydro transmission lines and a BC Hydro substation is located to the east of the property (Figure 1).

The property has no residential dwellings and has been primarily used for fruit-farming, with an orchard located on the east side of the property, and temporary sawmilling in the south-central area of the property. A long driveway (450 m) enters the property from Galiano Way on the west. Other notable anthropogenic features include a human-made pond with associated ditches to improve drainage on site.

District Lot 15 lies within the Coastal Douglas-fir moist maritime (CDFmm) Biogeoclimatic Zone. The CDFmm is an ecoregion with a semi-Mediterranean climate that falls within the rain shadow of the Vancouver Island and Olympic mountains (Nuszdorfer et al. 1991). This ecoregion supports the highest densities of species at risk in British Columbia (Ward et al. 1998, Floberg et al. 2004). The CDF zone occurs at low elevations and is heavily influenced by the Pacific Ocean. It is restricted to the southeast of

Vancouver Island and areas in the southwest of the Lower Mainland (Madrone Environmental Services Ltd. 2008).

District Lot 15 is currently zoned as Rural 2. It is bordered by Utility on the east edge, Rural Residential on the north edge, and Forest 1 on the south edge.

6 Property Access

District Lot 15 can be accessed from Galiano Way at 48.9028792, -123.3704751, just south of the intersection of Galiano Way and Georgia View Rd. (Figure 1). It is approximately 5.2 km from the Sturdies Bay ferry terminal on Galiano Island, British Columbia.

7 Methods

7.1 Terrestrial Ecosystem Mapping

Terrestrial ecosystem mapping (TEM) stratifies a landscape into map polygons based on ecological variables such as climate, vegetation, physiography, surficial material, bedrock geology, and soil (Resource Inventory Committee 1998). Based on the Biogeoclimatic Ecosystem Classification (BEC) system, which was first developed to classify and manage forested ecosystems of British Columbia, the TEM methodology is currently applied to map a range of forested and non-forested communities, supporting ecosystem-based land management of a diverse range of landscapes throughout BC.

Ecological inventory and mapping of District Lot 15 first entailed the interpretation of satellite imagery and existing geospatial data to divide the landscape into recognizably distinct areas, which were circumscribed as polygons in a geographic information system (GIS). Field work was then conducted by qualified personnel (Kiirsti Owen, RPBio) with expertise in terrestrial ecosystem mapping and the ecology and biodiversity of the CDF Zone. The purpose of the field visit was to validate and classify the ecological communities represented on the landscape. Preliminary terrestrial ecosystem mapping was then refined based on field data using GIS spatial analysis tools to improve the delineation of polygons and ascribe attributes to each community.

Terrestrial ecosystem mapping of District Lot 15 was developed according to RISC standards (Resource Inventory Committee 1998), meeting the requirements of survey intensity level 1, which is appropriate for an area at the scale of this property. Ecosystem attribution includes sites series, structural stage, and site modifiers.

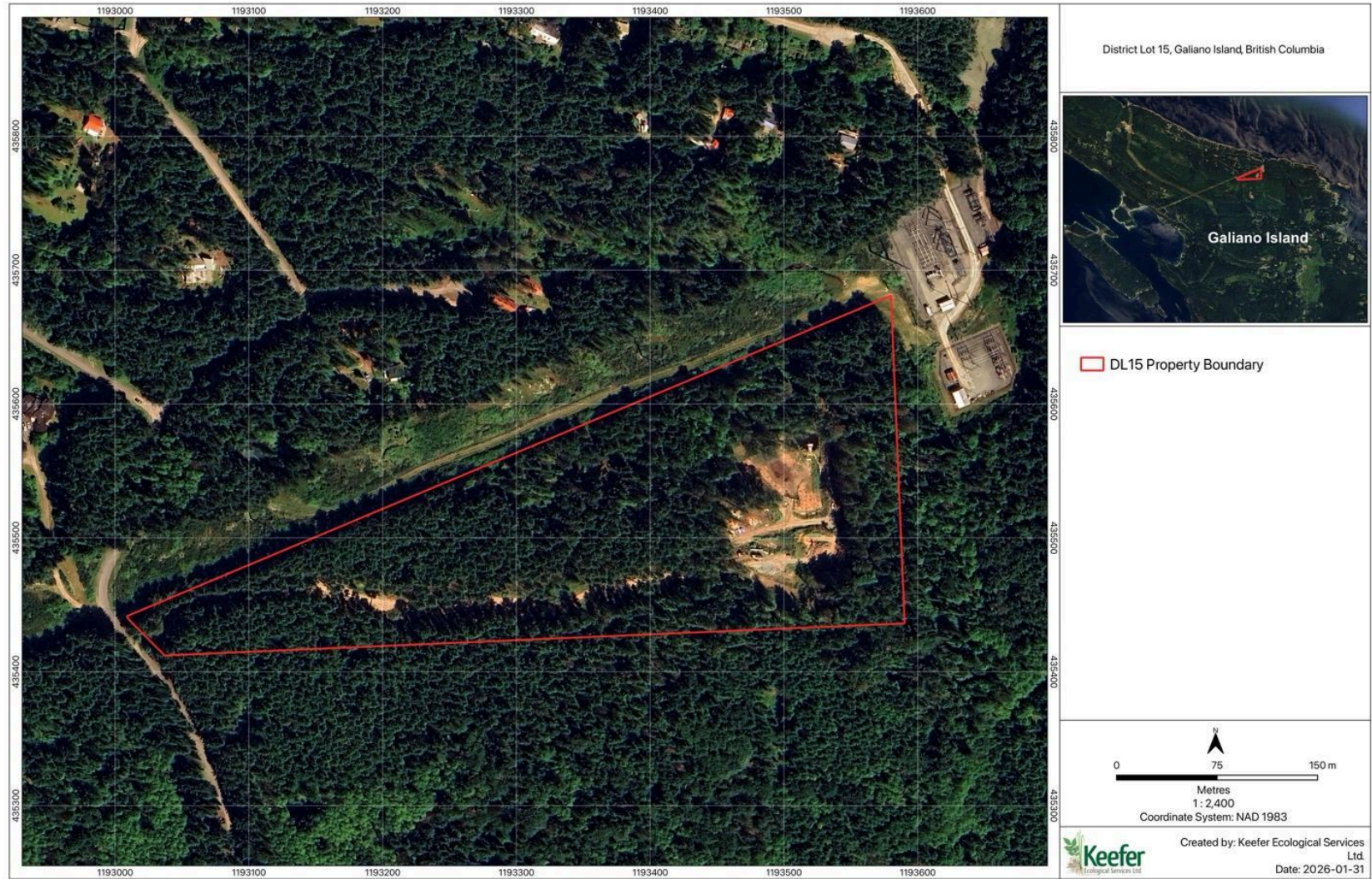


Figure 1. Property boundaries of District Lot 15 (DL15) on Galiano Island, British Columbia.

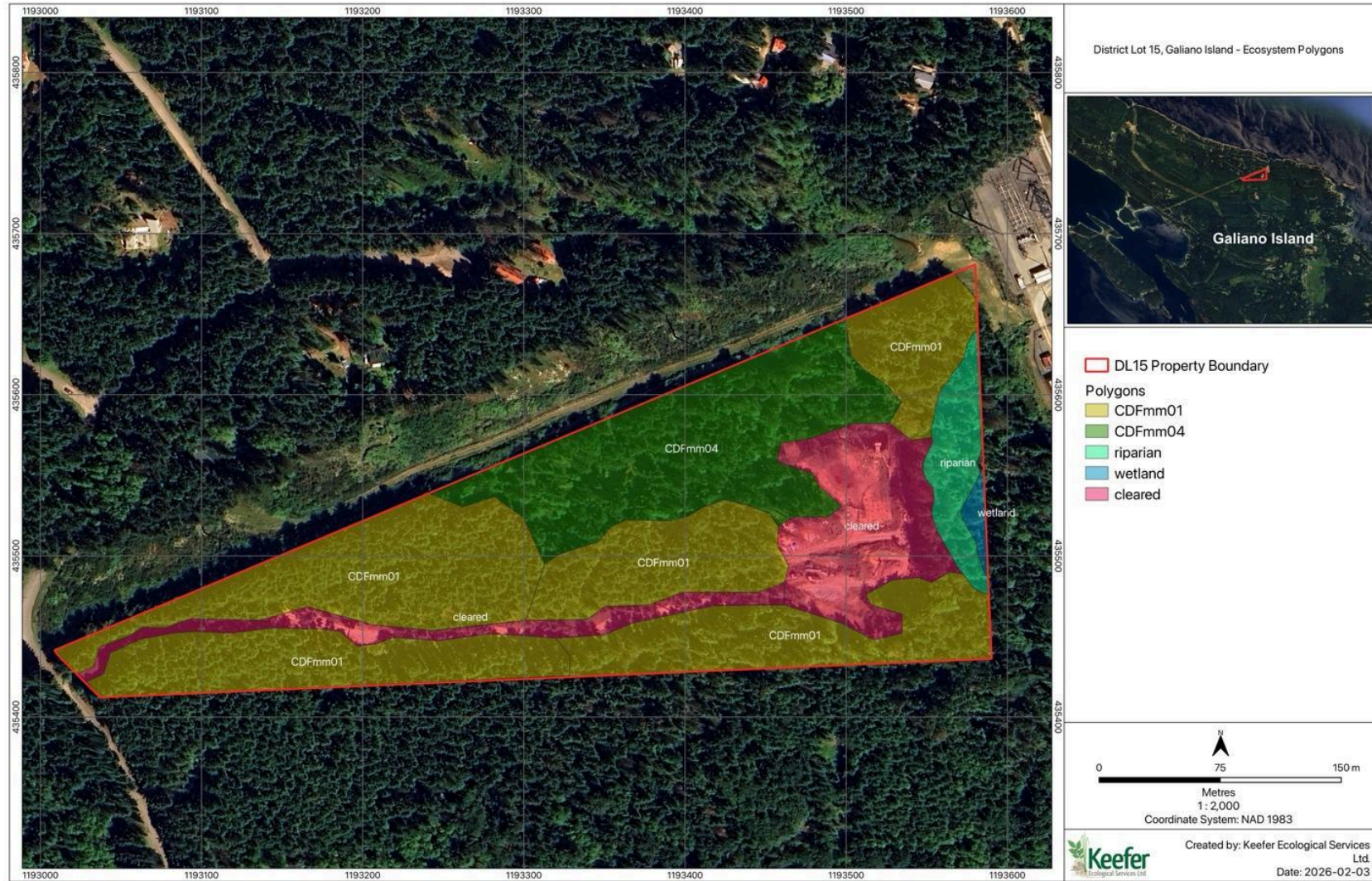


Figure 2. Map showing polygon delineations for different ecosystems represented within the property boundaries, including CDFmm/01, CDFmm/04, anthropogenic or cleared areas, and sensitive ecosystems (riparian and wetland).

8 Description of Ecosystems and Land Types

The entirety of the property lies within the Coastal Douglas Fir Moist Maritime (CDFmm) biogeoclimatic zone, and was classified as CDFmm/01 or CDFmm/04 site series based on plant communities, which are determined by soil moisture and soil nutrient availability. Additionally, sensitive ecosystems, including a wetland, a riparian area, and anthropogenic areas, including an orchard, human-made pond and ditches, and driveway, were mapped on the property (Figure 2).

The terrain is predominantly sloped rather than level, with moderate to steep gradients across most of the property and localized slopes exceeding 30%. Elevations range from approximately 25 m in the northeast corner of the property to 80 m at the highest point on the west point of the property near Galiano Way.

8.1 Coastal Douglas Fir Moist Maritime – Salal (CDFmm01)

The majority of the forested ecosystems on the property were classified as CDFmm01: Coastal Douglas Fir (CDF) biogeoclimatic zone, moist-maritime (mm) subzone, and 01 - Fd - Salal site series. This site series has very poor to medium soil nutrients and xeric to submesic soil moisture. Four of the six visual plots completed on the property were determined to be CDFmm01 (Figure 2). Plots were completed on slopes (16-35%). These forests were dominated by coastal Douglas fir (*Pseudotsuga menziesii* var. *menziesii*), with some arbutus (*Arbutus menziesii*), and often Western red cedar (*Thuja plicata*) in the sub-canopy. The shrub layer was dominated by salal (*Gaultheria shallon*) and often included a small amount of evergreen huckleberry (*Vaccinium ovatum*). The herb layer was limited, but it is important to note that because the field visit was completed in January, there may have been some herbs not present. The site series was still easily determined by the vegetation that was present. A limited amount of sword fern (*Polystichum munitum*) was present at most sites. The dominant moss species were Oregon beaked moss (*Kinbergia oregana*) and stairstep moss (*Hylocomium splendens*).

This ecosystem was represented in five polygons separated by age or successional stage or by cleared areas, such as the driveway. All polygons represented second-growth forest, but some appeared to be younger climax forest (average diameter at breast height <30 cm; Figures 3 and 4), and others appeared to be entering the mature climax successional stage with larger trees (e.g., diameter at breast height up to 66 cm; Figure 5).



Figure 3. Photo from one of the visual plots that was classified as CDFmm01 with a mixed of younger aged coastal Douglas fir, arbutus and Western red cedar.



Figure 4. An area of the property that was classified as CDFmm01 dominated by relatively young coastal Douglas Fir with some arbutus and Western red cedar.



Figure 5. An area of the property that was classified as CDFmm01 dominated by slightly older coastal Douglas Fir with some arbutus and Western red cedar.

8.2 Coastal Douglas Fir Moist Maritime – Oregon Grape (CDFmm/04)

Two plots (formed into one polygon) were determined to be CDFmm/04: Coastal Douglas Fir (CDF) biogeoclimatic zone, moist-maritime (mm) subzone, and 04 - FdBg - Oregon Grape site series. This site series is characterized as having richer soil nutrients than CDFmm01. It lacks arbutus and has more sword fern than CDFmm/01 (Figure 6). This site also included a subcanopy layer of Western hemlock (*Tsuga heterophylla*) and Western red cedar. There was a limited shrub layer that included salal and a small amount of whitebark raspberry (*Rubus leucodermis*). The herb layer was dominated by sword fern, and the moss layer was dominated by stairstep moss and Oregon beaked moss. This ecosystem was represented in a single polygon (Figure 2) that covers 1.79 ha (22%) of the property.



Figure 6. An area of the property that was classified as CDFmm04 with coastal Douglas fir and Western red cedar. Sword fern dominates the understory.

8.3 Sensitive Ecosystems - Riparian and Wetland

A wetland has been mapped by the Galiano Island Trust on the east side of the property, and was confirmed on the site visit. The majority of the wetland is outside the property boundary but extends to a small extent (0.05 ha) into the property. A 30-meter-wide riparian buffer enters District Lot 15, with approximately 0.4 ha of riparian and wetland area occurring within the property (Table 1, Figure 2).

The wetland boundary was fairly obvious due to the presence of hydrophilic plant species, such as sedges (*Scripus* sp.; Figure 7).



*Figure 7. Wetland area that extends into the property. This wetland was previously mapped as a sensitive ecosystem and was confirmed to match that area during the site visit on January 30, 2026. Note the presence of sedges (*Scripus* sp.).*

8.4 Anthropogenic Areas

Anthropogenic areas include the driveway that enters the property from Galiano Way (Figure 8) and extends to a large, cleared area (0.76 ha; Figure 9). This area is used for fruit farming and temporary sawmilling. There is also a human-made pond with associated ditches. The anthropogenic areas do not overlap with the mapped sensitive ecosystems (riparian and wetland). The total footprint of currently cleared (anthropogenic) areas is 1.4 ha or 18% of the property.



Figure 8. Unpaved driveway from Galiano Way into the larger cleared area on the property.



Figure 9. Cleared area with fenced orchard bordered by forest.

Table 1. Ecosystem polygons including biogeoclimatic ecosystem classification zones, subzones, and site series, area of each polygon in hectares and the proportion of the property of each ecosystem type.

| Ecological Community | BEC Zone – Subzone | Site Series | Area (ha) | Area (%) of property |
|--|--------------------|-------------|-------------|----------------------|
| Coastal Douglas fir - salal | CDFmm | 01 | 4.39 | 55% |
| Young forest | | | 2.95 | 37% |
| Mature second-growth forest | | | 1.44 | 18% |
| Mature second-growth Coastal Douglas fir – Oregon grape | CDFmm | 04 | 1.79 | 22% |
| Anthropogenic/cleared | CDFmm | 00 | 1.40 | 18% |
| Wetland and riparian | CDFmm | 00 | 0.39 | 5% |

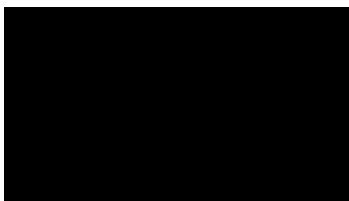
9 Recommended Mitigation Measures

It is recommended that the property owner avoid encroaching on the sensitive ecosystems classified as riparian and wetland. Presently, the cleared area is directly adjacent to the riparian area, therefore, no further clearing should occur on the east side of the currently cleared area where the orchard and sawmill site are located. The property owner should be aware of the presence of invasive plant species that may easily spread from the anthropogenically disturbed areas (driveway, cleared areas) into the sensitive ecosystems and should take measures to reduce spread. For example, the property owner should consider manual removal of invasive species along the eastern edge of the orchard and cleared area to reduce the likelihood of those species spreading into the sensitive ecosystems. The property has a highpoint on the western edge near Galiano Way and slopes down towards the northeast corner where the riparian and wetland areas occur. Therefore, the property owner should consider the potential for runoff to flow from the property into sensitive ecosystems. Surface flow from the property may pick up pollutants and sediment from anthropogenically disturbed areas, therefore, the property owner should ensure that vehicles and equipment on site do not leak fuel or other pollutants that could end up in the sensitive ecosystems, and clean up any spills if they do occur. Similarly, waste, fuel, or chemicals should be disposed of properly so that they do not end up contaminating surface runoff that flows into these sensitive ecosystems.

Wildlife activity was noted on the property during the site visit, including woodpecker foraging activity and black-tailed deer (*Odocoileus hemionus sitkensis*) scat and tracks. Wildlife species detected on the property during the site visit include Common Raven (*Corvus corax*), Chestnut-backed Chickadee (*Poecile rufescens*), Golden-crowned Kinglet (*Regulus satrapa*), Dark-eyed Junco (*Junco hyemalis*), Pacific Wren (*Troglodytes pacificus*), Northern Flicker (*Colaptes auratus*), and Pacific Chorus Frog (*Pseudacris regilla*). These wildlife species are all typical of CDFmm ecosystems. No species at risk or protected habitat features were observed during the site visit. It is recommended that the property owner be mindful of wildlife on the property and consider ways to reduce disturbance (e.g., avoid clearing during breeding bird season).

10 Authorship

Prepared by:



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Wildlife Biologist

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