Forest Ecosystem Conservation and Habitat Quality in Selected Municipal Parks and Private Lands, North Saanich, BC

For: The Friends of North Saanich Parks

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Introduction

In 2023, the BC Provincial Government introduced a framework for biodiversity and ecosystem conservation prompted by the negative impacts of: habitat loss and fragmentation, climate change, pollution, unsustainable resource use, and invasive species. Over the years, a growing number of BC municipalities have adopted habitat and/or biodiversity conservation policies. As early as 2006, the Greater Vancouver Region developed a planner's guide for biodiversity protection. Other municipal biodiversity conservation strategies include Surrey (Diamond Head Consulting 2014), and the District of Saanich (Diamond Head Consulting 2024).

The North Saanich Official Community Plan (2025) recommends that forest canopy be protected. However, from an ecological perspective, the canopy is only one element within North Saanich ecosystems together with soil properties, herbaceous plants, shrubs, terrain features, and moisture regimes among other entities. Local ecological organizations as well as members of the North Saanich general public believe municipal ecosystems should be protected for flora and fauna (A North Saanich Ecosystem Conservation Strategy Survey Results 2025). Several land trust organizations in Greater Victoria work with governments and nonprofits to protect BC terrestrial and marine ecosystems.

Forest habitat quality assessments depend on what characteristics are chosen for measurement and how those results are rated. One goal of this project was to examine various North Saanich forest stand characteristics for their effectiveness as good forest habitat descriptors and to combine these descriptors with some physical measures of potential habitat quality within local parks and private lands. The combination of both sets of attributes should create an effective habitat assessment tool. Another goal was to explore options for private forest land conservation since canopied municipal parks alone might not prove adequate for essential municipal ecosystem conservation. A more in-depth treatment of administrative options and incentives for North Saanich forest land conservation can be found in Goodarzin (2025).

The majority of the North Saanich municipal parks were the result of development agreements, public easements, or donations to the municipality. Many parks are targeted for specific purposes such as adult and children's sports, beach access, dog walking, picnics and/or agricultural interests. As a result, only a small number of municipal parks can be described as canopied environments with true potential for ecological preservation.

With respect to North Saanich's private lands, most forested properties are not under ecological conservation agreements and some large lots have been disturbed to the point that they might take decades to restore. However, special permit areas in North Saanich do restrict activities on privately owned sensitive sites. The Friends of North Saanich Parks (FNSP), in responding to a lack of knowledge about potential for habitat conservation, decided to examine select habitat characteristics for a group of canopied municipal parks compared to a few forested private parcels.

North Saanich Forest Ecosystems

North Saanich lies within the Coastal Douglas fir Zone (CDF) that covers the east coast of Vancouver Island, the southern Gulf Islands and the Fraser Valley. The CDF is the smallest Zone in BC comprising 0.3% of BC's total area. It is home to the highest diversity of plants in BC as well as the highest diversity of overwintering birds. The CDF is the least protected zone in BC, with the lowest number of large (>250 ha) protected areas. Zonal vegetative ecosystems are typified by Douglas-fir

(*Pseudotsuga menziesii* var. *menziesii*) and salal (*Gaultheria shallon*). Drier rocky ecosystems are often represented by an association of Douglas-fir and Arbutus (*Arbutus menziesii*). In North Saanich, this type, as elsewhere within the Zone, is designated as a rare vegetation association. Garry Oak (*Quercus garryana*) is often included as a minor species in the canopy and only small Garry oak meadows exist in the municipality, usually on rocky knolls. Oceanspray is a common indicator of drier Douglas-fir sites. On these drier sites, herbaceous cover is usually low.

North Saanich forest ecosystems are relatively young, developed largely after clearing for agriculture during European settlement and continuing into the 1920s. A second wave of forest removal took place directly after World War II due to residential population growth. Only a few areas of forested old growth currently exist, such as groves found in the provincial John Dean Park, and in the municipal parks of Pavelic and RO Bull. RO Bull Park has been registered as a National Historic Site since 2009. The majority of North Saanich forested municipal parks are 2 hectares (ha) or less in size, located among residential lots. The remaining forested lands are either privately owned within the Agricultural Land Reserve, or residential lots of roughly 5ha or less.

Forest Connectivity and Stand Attributes

A number of studies have addressed forest fragmentation and its detrimental effects on ecosystems. Hadid et al. (2015) found that about 70% of the world forests are close to areas of human activity and could be threatened by development. The authors concluded that habitat fragmentation reduced biodiversity by 13-75% and its effects magnify with time. De Matos et al. (2019) investigated forest fragmentation in tropical environments. Some specific objectives of that study were: a) to create a forest sustainability index; and b) to apply the index to identify priority areas of concern. They found their index effective.

Work in southern Ontario concluded that the assessment of forest fragmentation could be based on area size, fragment number, fragment proximity, connectedness and integrity (mrcaslick.altervista.org). According to Hilty (2024), connected, protected, and conserved areas are stronger, and ecological corridors are a major component in successfully fighting fragmentation and strengthening biodiversity. These physical links are one of the most important ways to ensure species are able to move between protected areas and maintain genetic strength.

Certain forest stand attributes are considered indicators of ecosystem sustainability and desirable habitats:

a) Widely ranging stand ages which reflect a continual cycle of regeneration (Gao 2014);

b) Multi-level vertical stand structure that provides various niches in which biota can flourish (*Ibid*);

c) The relative numbers of plant species as a measure of biodiversity (Marr 2025); and,

d) Abundant coarse woody debris.

Coarse woody debris has an important role in forest stands since it provides habitat for many plant and animal species, aids site moisture retention, assists in erosion control, and provides nutrients to litter layers and mineral soil.

The presence of endangered vegetation associations is also a strong incentive for ecological conservation in North Saanich and within the CDF Zone in its entirety. As a result, we believe in identifying such associations as part of an assessment process.

The presence of snags or standing dead trees is normally considered an indicator of desirable habitat. However, in North Saanich due to climate change, almost all current forest stands contain some dead standing Western Redcedar, Grand fir, and in some cases Douglas fir. As a result, this trait was not considered useful in distinguishing good, moderate or poor forest habitat in North Saanich.

Research Objectives

Objective 1: To examine 21 North Saanich municipal parks for habitat quality using five stand characteristics as well as net park size, ecological corridor presence, ecological corridor width, and park proximity. The total sum was compared to an assigned numeric rating for poor, moderate, and good quality habitat. Objective 2: To examine four private ownership holdings containing six total parcels for stand structural attributes, size, and forest proximity. Habitat ratings were applied to private land holdings in the same manner as the municipal park habitat ratings. Objective 3: If some of the private holdings had satisfactory habitat ratings, to further explore private landowner agreements or covenants in a preliminary fashion as a way of extending ecosystem conservation. Examining this aspect in more detail requires a separate report.

Methods

Only canopied parks were chosen for sampling. In terms of stand attributes, each park was assessed for stand structure, age, species richness, the presence of endangered vegetation associations and woody debris levels. Ratings for overall habitat quality for each park or private parcel were considered the numeric sum of the selected physical (size, proximity, ecological corridors) and stand attributes.

The Downy woodpecker, a non-seed eater, has a forage territory of 4ha (Inventory Methods for Woodpeckers 1999). We chose 4ha as a target size for desirable North Saanich forest habitat. Secondly, the seed- eating Red crossbill has a foraging distance during nesting of 500m or further (BC Conservation Data Centre Species Summary 1996). Distance between suitable habitats controls the chance for plant species seed dispersal and faunal movement. Using the canopied park system, we chose 400m (a somewhat smaller figure than the foraging distance) as the maximum desirable distance from one municipal park to another.

Low, moderate and high levels of woody debris levels for the North Saanich parks and private holdings were based on amounts found in the Friends of North Saanich report by Chiswell (2024). Species richness classes were based on species amounts found in individual parks compared to the total species number in 20 North Saanich parks (Marr 2025) as well as general assessments by Williams (2021). Where tree ages did not already exist from prior research conducted by the Friends of North Saanich Parks, ages were determined by coring two selected representative trees within each respective park, and on the six private forest parcels. Young, mature and “old growth” age classes followed Hope (2024), a forest stand report that examined a number of North Saanich parks.

Endangered or rare vegetation associations were found on the BC government website; each association received one point. Net size was defined as the canopied size of the park or parcel with removal of such areas as grass fields, driveways, domestic gardens, development, parking lots and edge effects. The proximity of forested private lands to other canopied private parcels was established as < 100m or contiguous. Once the selection of the most appropriate stand attributes and physical measures was completed, we established the limits for good, moderate and poor habitat classes.

The 21 selected parks consisted of: Quarry, Gulf View, Reay Creek, Pavelic, RO Bull, Denham Till, Highview South, Quatsino, Bluebell, Woodcreek, Sumac, Readings, Green Park North, Green Park South, Heather/Clayton, Queen Mary Bay, Prentice Pond, HMS Plumper, Nymph Point, Sycamore, and Lillian Hoffar. This list corresponds closely to the list of nature parks in the North Saanich Parks Master Plan (2025). There were, however, some exceptions in the park selection for this study. Kanishay Park listed in the Parks Master Plan, was excluded from the study because the canopy is dominantly invasive Hawthorne which requires complete removal in order to restore the park with appropriate natural vegetation.

Moreover, Pachena Park was rejected as having insufficient canopy. Pavelic Park is approximately 8 ha in size but only about 4.5 ha contains conifer canopy cover because the remaining eastern section was logged in the past and currently contains a dense deciduous shrub cover.

Certain private forest parcels were selected to determine if the assessment process would be successful when applied to forested sites other than the municipal parks as well as to determine other potential conservation areas.

The private parcels were:

1) Eagle Ridge VIS 1579 on Wain Road. This strata has a total size of 30.4ha and has formed a forest committee that removes invasive species. It has two smaller forest parcels with intact ecosystems on the east and west side of the development.
2) The strata 768, surrounding Woodcreek Road, has one forest common property area of 16.36ha, that shares an eastern boundary with Kanishay Park. It is a Douglas fir–Salal type. This strata also has formed a forest stewardship committee. Other smaller forested common areas exist.
3) A six member strata on Oceanspray Drive, has two small parcels of common property. A couple within the strata have built an informal trail through one of the parcels.
4) Russell Nursery, a commercial venture, has a lot with approximately 4 ha of forest. The property is located on Wain Road close to the Eagle Ridge Estates. There has been no modification to the forested area since the owners bought the property. However, the prior owners cleared the understory from a portion of the forested section.

The selected forest within Strata 768 (16ha) is much larger than the other parcels. The tract was divided into four sections to account for variability and then the results were summed.

Several parameters, e.g., net forest size, corridor width if a corridor existed, nearest forest proximity and nearest park proximity, were measured using GIS or in a few cases, estimated by observation. Two of the GIS images accompanying this report illustrate the location of parks and private parcels, together with their respective habitat rating.

Results and Discussion-Municipal Parks

According to our assessment with the suite of chosen attributes (both physical and descriptive), only four municipal parks have good habitat characteristics. These parks are: Quarry, Sumac, RO Bull and Pavelic. Both RO Bull and Pavelic Parks have old growth characteristics which are reflected in the vegetation measures. Sumac has several different vegetation types as well as varying terrain features contributing to an overall rich biodiversity. The park lies in a protected moisture-receiving site with good growth potential. Quarry has varied terrain leading to the presence of many different plant species. These parks are not large, relatively speaking, but their stand characteristics are good to excellent.

As might be expected, the small size of the majority of parks, and their isolation in some cases

(such as Nymph Point, Denham Till and Reay Creek), their lack of ecological corridors, and the degree of past or current disturbance, all contributed to the overall moderate to poor habitat ratings. Pavelic Park has many fine stand attributes but the severity of invasive species present in the park threatens its ecosystem. The park requires immediate attention, in terms of invasive plant species removal.

We did not measure the nature of contiguous forest adjacent to the selected parks because residences, domestic grass areas or lawns and roads surround the majority of the selected canopied parks. The following parks, for example, have surrounding development features: Denham Till, RO Bull, Reay Creek (on three sides), Gulf View, Quarry (on three sides), Green Park North and South, Highview South, Queen Mary Bay, Nymph Point, Bluebell, Lillian Hoffar, Woodcreek, Heather/Clayton, Prentice Pond, and HMS Plumper. These features create barriers to the point that no further contiguous forest habitat could be created without major funding to expand each area.

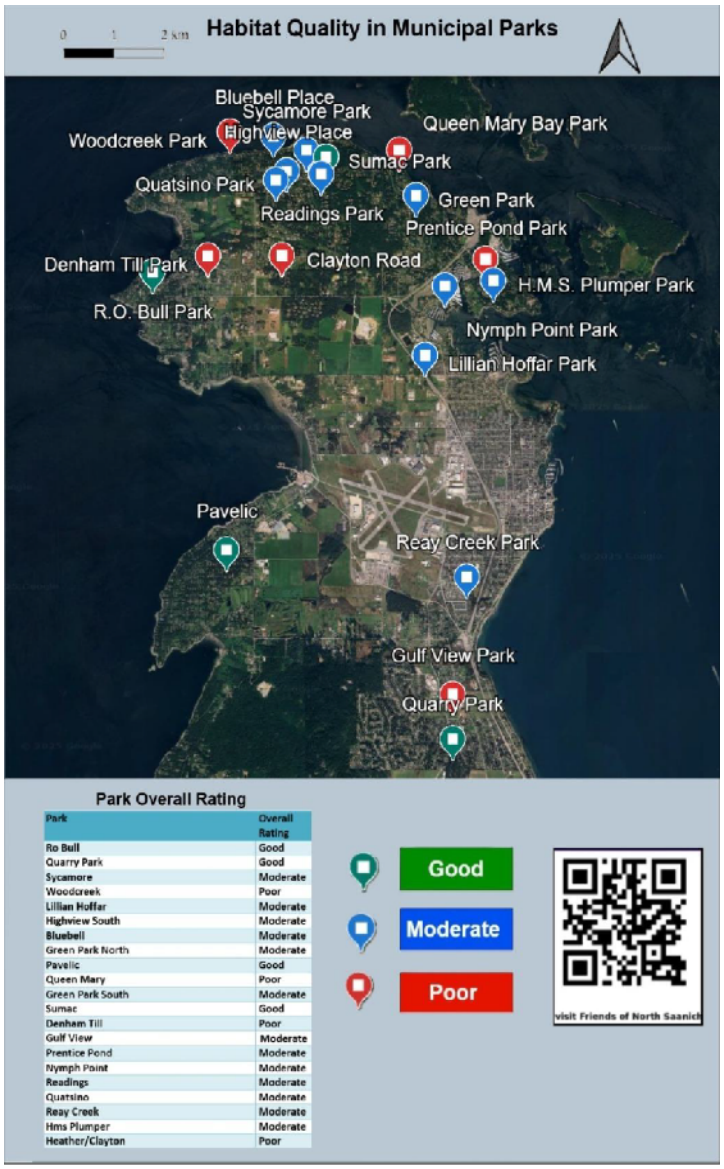
Ecological literature often mentions that the proximity of undisturbed forested areas is beneficial for flora and fauna dispersal but we found that few of the parks studied are 400m or closer to each other. The exceptions were: Readings and Sumac, Sycamore, Highview South and Quatsino, as well as Green Park North and Green Park South.

In the Saanich biodiversity report (2024), the authors recommend a size of > 10ha for ecological conservation purposes but since only one of the selected North Saanich municipal parks in this study approached this size, it seemed unrealistic to set the forest parcel size criterion to 10ha.

In the same 2024 Saanich report, it was suggested that larger parks, which could be CRD or provincial or national parks, could provide a hub to link other smaller canopied parks and, as a result, create a network of potential quality habitat. This could be a viable option for North Saanich to explore in that Readings and Sumac are positioned for such a plan because the larger CRD Horth Hill Park is close by.

The provincial John Dean Park might be a viable hub; the north side of the park has forest tracts in private hands. The North Saanich national park coverage is relatively small and specifically purposed for camping, a bird sanctuary and a botanic garden. Marr (2025) presents a strong case for preserving habitat in the existing North Saanich canopied parks studied here, stating that many of these parks may have a wide range of desirable native plant species. In some of the parks, the organization Friends of North Saanich Parks has been planting native species and removing invasive plants for up to 8 years. As a result, the ecological condition of some of the canopied municipal parks in this study has greatly improved. These small parks do provide ecological havens and should not be dismissed, but in terms of addressing present and future concerns for providing forest ecosystem conservation only a few are ideal contributors.

Figure 1. Map of Selected North Saanich Parks With Combined Descriptive Attributes and Physical Characteristics Ratings. Map created by UVic Sustainability Scholar Shukooh Goodzarinezhad.



Park	Overall Rating
Ro Bull	Good
Quarry Park	Good
Sycamore	Moderate
Woodcreek	Poor
Lillian Hoffar	Moderate
Highview South	Moderate
Bluebell	Moderate
Green Park North	Moderate
Pavelic	Good
Queen Mary	Poor
Green Park South	Moderate
Sumac	Good
Denham Till	Poor
Gulf View	Moderate
Prentice Pond	Moderate
Nymph Point	Moderate
Readings	Moderate
Quatsino	Moderate
Reay Creek	Moderate
Hms Plumper	Moderate
Heather/Clayton	Poor

Table 1: Attribute Ratings for 21 Selected North Saanich Parks. Physical characteristic ratings changed overall ratings only in a few cases. Points are displayed in brackets.

Park	**Tree Age**	**Stand Structure Down Woody Debris**	**Down Woody Debris Down Woody Debris**	**Sign. Veg Assoc.**	**Biodiversity**	**Attribute Sum/ Park (total 14-15)**
RO Bull	375, 275, 175 (3)	three (3)	Good (3)	DF-Oregon grape; Garry oak (2)	High (3)	14
Quarry Park	78, 65, 143, 110 (2)	Two (2)	Good (3)	DF-Oregon grape; Garry oak (2)	High (3)	12

Lillian Hoffar	128 (2)	Two (2)	Low (1)	DF-Oregon grape (1), Alder -slough sedge(1)	Mod (2)	9
Green Park North	85, 100 (2)	Two (2)	Mod (2)	None (0)	.5 small area of potential high	6.5
Green Park South	38, 41 (1)	Single (1)	Low (1)	None (0)	Mod (2)	5
Gulf View	98, 119 (2)	Single (1)	Low (1)	Garry oak (1)	Mod (2)	7
Nymph Point	189, 216, 301 (3)	Two (2)	Low (1)	Garry Oak(1) DF –Arbutus (1)	Mod (2)	10
Denham Till	98, 119 (2)	Single (1)	Low (1)	DF-Salal (0)	Low (1)	5
Queen Mary	98, 119 (2)	Two (2)	Low (1)	very few Oregon Grape; DF/ Arbutus (1)	Low (1)	6
Bluebell	69, 66 (1)	Two (2)	Low (1)	DF-(Oceanspray (.5)	Low (1)	5.5
Wood Creek	37, 44 (1)	Two (2)	Mod (2)	Douglas fir /Salal (0)	Mod (2)	7
Sycamore	39, 44 (1)	Two (2)	Low (1)	DF-Oceanspray (.5)	Mod (2)	6.5
High View South	78, 80 (1)	Two (2)	Mod (2)	DF/Salal (0)	Mod (2)	7
Quatsino	92, 93 (1)	Two (2)	Low (1)	DF/Oceanspray (.5)	Low (1)	6.5
Pavelic	190, 198 (3)	Three (3)	Mod (2)	DF-Salal (0)	High (3)	12 (bonus point for mound and pit topo.).
Sumac	84, 79, 113 (2)	Two (2)	High (3)	WRC skunk cabbage/DF salal /DF Oregon grape (1) Grand fir /Foamflower (1)	High (3)	12
Prentice Pond	86, 63 (1)	Two (2)	Low (1)	Alder-slough sedge (1) DF-Salal (0)	Mod (2)	7
Readings	37, 39 (1)	Two (2)	Mod (2)	No Significant Types	Low (1)	6

Reay Creek	81, 99, 99, 92 , 47, 21 (2)	Single (1)	Mod (2)	Black cottonwood -red osier dogwood. Redcedar/ June plum (1)	mod (2)	8
HMS Plumper	89 (2)	Two (2)	Mod (2)	DF-Salal (0)	Low (1)	7
Heather/ Clayton	32,37(1)	Single (1)	Low (1)	DF-swordfern/ DF-Salal (0)	Low (1)	4

Legend:

Tree age: 1-80 =1, 81-175=2, >175=3
Stand structure stage: single=1, two=2, three=3
Down woody debris: low=1, mod =2 and high =3
Significant veg association: 1 point for each significant or rare association
Biodiversity richness: (amount of plant species) low=1, mod=2 and high=3
Colours: Red=0-6.5 points; Blue 7.0-9.5; Green: 10 plus.

Results and Discussion-Private Forest Parcels

Table 2: Physical and Descriptive Traits for Six Private Forest Parcels.

Parcel Name	Tree Age	Struc. Stage	Down Woody Debris	Veg. Assoc.	Biodivers	Parcel Size	Corrid.	C. width	Forest Prox.
Oceansy Fire Road	81, 87 (2)	3 young	Low (1)	Alder-Skunk Cabbage/ lady fern (1)	Low (1)	Low (1)	No (0)	0	Yes (1)
Oceans y Swamp	59, 69 (1)	2	High (3)	Cw (Skunk Cabbage/ lady fern)	Mod (2)	Mod (2)	Yes (1)	(3) wide	Yes (1)
Eagle Ridge East	126, 118 (2)	3	Mod (2)	DF-Oregon Grape (1)	Low (1)	Good (3)	Yes (1)	(3) wide	Yes (1)
Eagle Ridge West	115, 70 (2)	2	Mod (2)	Cottonwood -red-osier (1)	Low (1)	Mod. (2)	Yes (1)	(3) Wide	No (0)
Russell Nursery	116, 84 (2)	2	Low (1)	DF-Oregon Grape (1)	Low (1)	Mod (2)	No (0)	0	No (0)
Strata 768	69, 115, 93,106, 56,48,48 , 87 (1)	2	Mod (2)	DF-Salal (0)	Mod (2)	Excellnt (4)	Yes (1)	(3) Wide	Yes (1)

Legend:

Tree age: 0-80 =1, 81-175=2, 176-indefinite=3
Parcel size: low <2 ha =1, mod-2-5 ha =2, good 5-10 ha =3, excellent >10 ha =4
Structural stage: single=1, two=2, three=3
Ec. corridor: no=0; yes=1
Ec. corridor width: 1-5m =1; 5-10m =2, >10m =3
Down woody debris: low=1, mod. =2 and high =3
Veg. association: 1 point for each red listed
Biodiversity (richness: amount of plant species) low=1, moderate=2, high=3

The Eagle Ridge Estates, an extensive strata development with homes clustered in the centre of the property, falls within the Agricultural Land Reserve. A narrow forest band on the south side of the development is quite disturbed through recent tree removal, garden and ground maintenance activities, ditching and septic fields. Moisture flowing from Horth Hill and crossing Wain road has been contained

according to an agreement with Brackenhurst Farm which lies south and east of the Eagle Ridge property. Two intact areas of forest and several small rocky Garry oak knolls also exist within the property. The small meadows on the northeast side of the development are in transition and one on the southern section of the property is largely invasive grass species with only one or two camas plants.

According to David Stinson, a Strata member (Hope, personal communication 2025), there is a Habitat Acquisition Trust (HAT) agreement for the property. However, Kevin Smith of HAT, (Hope, personal communication 2025), was not able to find the file.

The east parcel is on a gentle south facing slope with uniform Douglas fir-Oregon grape association, and a stand age of approximately 118-126 years. It transitions to a slightly richer site with swordfern, bigleaf maple, and Western Redcedar. There is little down woody debris and the biodiversity is moderate. However, it has a multistage stand structure. It is approximately 7.4ha in size and has contiguous forest into the eastern adjacent owner's property (Brackenhurst Farm) along the shared property line. On the whole, this is a desirable parcel for conservation.

The west parcel is slightly smaller than the east section, with a Black cottonwood-red osier dogwood association. The cottonwoods are 115-118 years of age; there are a number of dead Western Redcedar in the section. Woody debris levels are moderate and the biodiversity is moderate. Although the parcel lacks contiguous forest to the west it does have an ecological corridor (>20 m wide) to the south which leads to a large agricultural field as well as a corridor to the east, the latter paralleling Wain Road. This parcel is also a desirable one to consider for conservation. Deer frequently cross Wain Road to enter a forested tract to the north and also move south into the Strata.

Members of Strata 768 have taken a keen interest in the ecosystem health of the common area forest. On the largest parcel within the strata, maintained fire roads and a peripheral trail render access easy and members walk and maintain the trails frequently. The Strata members are vigilant about any hazard trees and attend to forest-related fire hazards. To the best of the Strata members' knowledge, there is no ecosystem conservation agreement or covenant on the forested common land.

The selected tract of about 16ha is south facing in most cases with a gentle slope but gradually turns to the northeast. Although there are small variations in vegetation types, it is a Douglas fir-salal type predominantly with scattered Arbutus. There have been a series of logging episodes that have affected the nature of the stands. The most easterly stands are two-stage in structure, aged 69-115 years, with low-moderate woody debris and fairly low biodiversity. Moving west, the centre stands are 93-106 years, multi-stage at times with moderate biodiversity, and the most western stands are younger at 48-87 years with two-stage stand structure transitioning to single stage at the most western reaches. At the most western edge of the parcel there are high woody debris levels from two historic blowdown incidents and the trees near the blowdown site have definite single stage development. The most western stands have low biodiversity. Deer frequent this forested tract and are observed in the center sections. The centre section may be slightly moister than the east or west reaches and the southern sections below the trail are wet in winter.

Because of its size, this is a highly desirable tract for ecosystem conservation and some strata members appear willing to consider this action. The stand is relatively young but it will mature with time. It has public land as an ecological corridor to the east (although with poor vegetation types in Kanishay Park) and some further noncontiguous forested common land and public easements to the north.

A six member strata on Oceanspray Drive owns two small common area parcels. The first parcel contains a short fire road on the north side of Oceanspray that transitions into two walking trails and

forms a crescent beyond the fire road. The trail moves through highly varied terrain within a short distance, covering moderate to wet and rich regimes. The Douglas fir trees lining the fire road on the north side are 87-90 years respectively. There is no evidence of an established natural vegetation association on the fire road's north side but it might become an Oregon grape type over time. The south side of the fire road has a small ephemeral stream with swordfern, alder and some Western redcedar. This common area site is small, with low woody debris levels with most of the biodiversity present because of the stream. With the exception of protecting the ephemeral stream, there seems no compelling reason to develop an ecosystem conservation area here based primarily on the parcel's small size. The total area of this piece is just over 1ha.

The second common area parcel is reached from a public trail on the south side of Oceanspray Drive. The 3.06 ha lot can be entered from an informal strata-developed trail off Peregrine Place to the southwest. The parcel consists of a steep slope on its southwest side ending in a riparian area with ladyfern, skunk cabbage and alder at the bottom of the slope. The Eugene Balin Memorial trail edges the south west border. The stand is primarily Western Redcedar, 59-69 years old, with moderate biodiversity and moderate to high woody debris. Since this piece has forested public land along one edge and the common property stand is developing well, it has potential for conservation.

The final selected piece of private forest land lies to the north end of the lot owned by the proprietors of Russell Nursery. The stand in question is Douglas fir with scattered Western Redcedar. The trees are 84-116 years; there is low woody debris. The area has had considerable disturbance in that the understory was removed from about 40% of the forested section. Debris dumping has occurred in about 30% of the area due to nursery activities. Extensive invasive species coverage occurs in the most northern half of the forested portion. The section as a whole would not be suitable for a conservation area at this time and would require considerable restoration work on behalf of the owners to render satisfactory.

Most of the private pieces described here have at least some potential for conservation and several are excellent examples. A follow up study could focus on finding additional large forested sections of private land, and explore how private owners could become stewards as well as discussing how the municipality could ensure long-term forest conservation on private lands via incentive programs. Appendix 1 shows the vegetation associations for the six parcels.

Figure 2: Overall Classification of Private Forest Parcels with Physical and Descriptive Attribute Information. Created by UVic Sustainability Scholar Shukooh Goodzarinezhad.

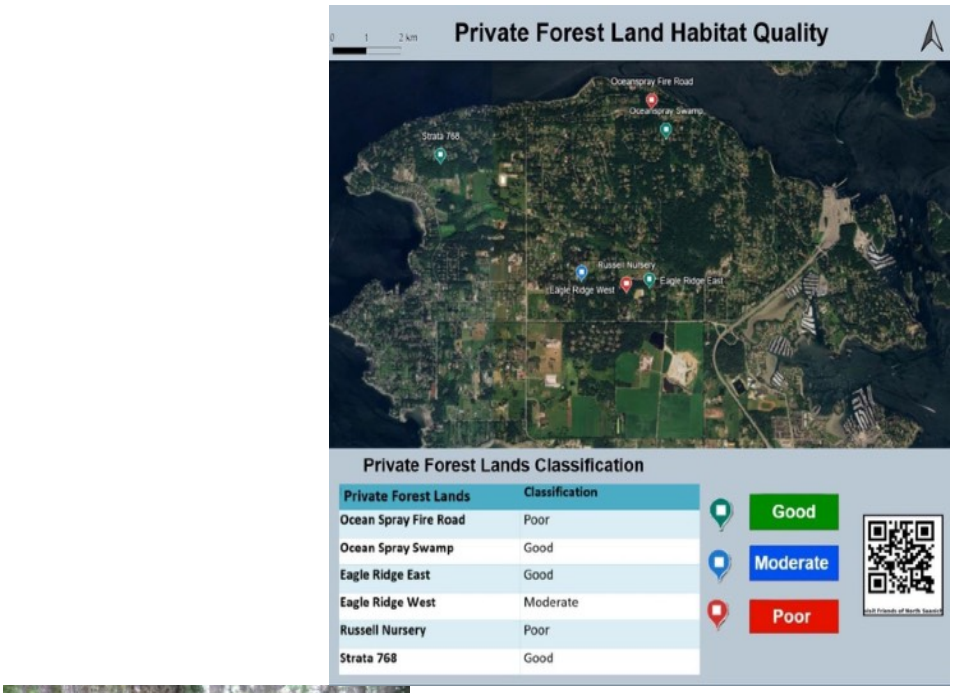


Figure 3 and 4. Left: Strata 768 common property forest in 2025. Photo: Sharon Hope. Right: Present Strata 768 taken from across Deep Cove probably in the late 1920s or early thirties. Log Cabin Archives.

Figure 5 and 6. Left: Lillian Hoffar Park 2025. Sharon Hope photo. Right: The Douglas fir dominant site believed to be the future Lillian Hoffar Park in 1898. Burial cairns in forefront. Photo taken by archeologist Harlan Smith.

Habitat Quality Attributes-An Evaluation

The traits chosen to establish desirable habitat were: stand structure stage, age range, plant biodiversity, significant vegetation associations, and levels of down woody debris. Some of these traits can be associated with old growth forests. Since North Saanich Douglas fir stands average between 60-125 years, old growth characteristics only occur in a few parks and rarely in the selected private forest lands. The biodiversity measure proposed by Marr (2025) used the number of native species in a specific park/total number of the native species documented among all parks studied. This measure, when applied alone, produced very different results than the use of the other attributes together. As a result, using multiple stand attributes and physical characteristics is strongly recommended as an appropriate approach.

In the literature, physical dimensions and proximity were significant in describing habitat, and thus for the North Saanich stands, these aspects were considered important (i.e., the size of the park or private forest [the larger were most desirable], as well as the presence of ecological corridors and/or adjacent contiguous forest). A positive rating for these attributes occurred often on private lands, but did not appear as often in measuring the parks. In moving forward with future assessments, stand characteristics are useful as quality habitat descriptors but these should be combined with at least three or four important physical descriptors to achieve a balanced picture of any forested parcel.

Private Land Conservation Agreements

In working with municipalities, trust organizations have been successful in preserving BC ecosystems. In September 2023, the City of Parksville and The Nature Trust of British Columbia, a conservation organization, partnered to protect a property along the Kw'a'luxw (Englishman) River. The Nature Conservancy of Canada has protected properties in Metchosin, Highlands, Esquimalt, View Royal and Langford (NCC: Where We Work - British Columbia - BC conservation projects by name).

A conservation covenant is a voluntary written agreement between a landowner and a conservancy or trust organization. It can cover all or a part of any desirable parcel of property. In the agreement, the landowner promises to protect the land in ways that are described in the covenant. For instance, the landowner might agree not to subdivide the land or to provide specific protection for important habitat. The conservation covenant is registered against title to the property in the BC Land Title Office. There are also non-binding Nature Stewardship programs or Good Neighbour agreements described by both the Galiano Conservancy and Habitat Acquisition Trust (Hope, personal communication, 2025).

Kevin Smith, director of Habitat Acquisition Trust (HAT), discussed a pilot project in which Saanich partnered with HAT to offer about 200 or more owners expert advice in restoration and an opportunity to explore conservation through agreements. It was funded by the Fraser Basin Council for Municipalities to Forward Biodiversity on Private Lands. HAT held two public guided walks for plant identification and visited 11 landowners to give site advice. Staff offered free invasive species removal to six landowners. Kevin Smith deemed it a most successful endeavour. However, he stated, that there is little current HAT activity in North Saanich (Hope, personal communication, 2025).

In terms of trust organizations, those existing on Mayne and Galiano Islands could be explored as case studies since both organizations have a number of existing covenants. Some Gulf Island Conservancy groups have as much as 900ha under protection, in addition to the protection provided by local parks.

The Regional District of Bulkley-Nachako and the Nanaimo Area Land Trust have conservation covenant agreements with private landowners. The Land Trust Alliance of BC has a document listing the benefits of conservation covenants on their website. On the world stage, New Zealand, specifically the Auckland City Council, is one example of a local government promoting covenants.

Recommendations

1) Hire District credentialed staff or contractors to act as a source of ecological expertise for forest stewardship as well as working in concert with trust organizations in supplying information to the public on covenant and/or nonbinding stewardship agreements. These individuals might conduct assessments of private lands, and future public parks. Providing expert ecological knowledge to the public has also been mentioned in the paper: A North Saanich Ecosystem Conservation Strategy (2025).
2) Establish an outreach, support and information program tailored for private forest landowners with respect to advancing ecological conservation on their properties. Outreach could take the form of informational seminars, workshops, website information or site visits.
3) Nurture the formation of an informal coalition among North Saanich private forest landowners. Coalition members could brainstorm ideas for approaching invasive species removal or other challenges, form work bees, or ask for specific advice from the municipality.
4) Have discussions with HAT and other ecological conservancy or trust groups to gain knowledge about their approach, and weigh the feasibility of various agreement types.
5) Engage in a pilot project designed for North Saanich landowners in a targeted location that would be similar to the one that the District of Saanich embarked upon.
6) In terms of building upon larger parks as hubs to achieve a quality habitat network, potential private forest candidates that are strategically placed could be determined. Owners could be approached by the municipality and/or HAT as a partner.
7) As the next step from the above statement, identify large private forest landowners, particularly in the Agricultural Land Reserve (ALR), as well as additional strata properties such as Strata 804. This latter tract of common property with good stand characteristics has excellent potential for conservation, is strategically adjacent to Readings and Sumac parks, and close to Horth Hill Park.
8) Develop monetary and other incentives to attract North Saanich residents with forested land who might consider stewardship. One ALR private owner who was interested in conserving his property said there is no incentive given for forest preservation, only for agricultural production.

Closing Statement

In addition to assessing habitat quality in selected municipal parks and private forest lands, this project describes some avenues for forest ecosystem conservation throughout the municipality. Although the municipality does have a fund for purchasing lands, land purchases are costly,

And, as a result, might not be the first choice to address ecosystem conservation. In addition to the private parcels described here, the owners of Island Arabians and Violet Grove Farm could also be contacted as interested in forest ecosystem conservation. There were some limitations to this study. In order to assess private lands, owners' consent was necessary and not all those who were approached, consented.

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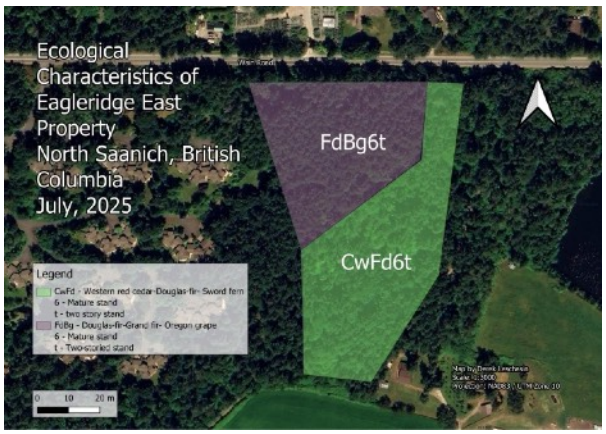
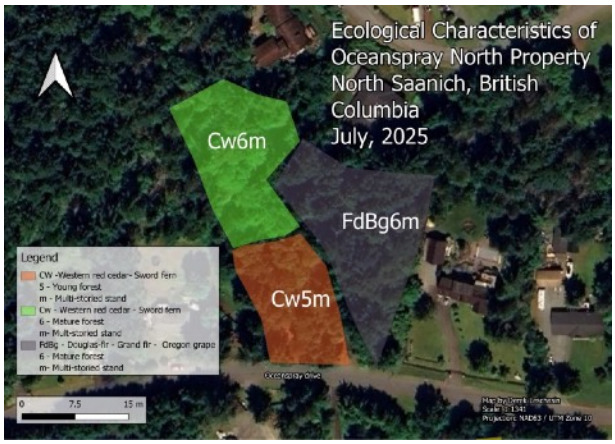
Appendix 1. Vegetation Association Maps of the Six Private Forest Parcels.





Appendix 1 (Continued).

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