

**Salish View Nature Reserve  
Management Plan  
Lasqueti Island, BC**



***Photo 1. View from the summit of Salish View Nature Reserve.***

PREPARED FOR  
Islands Trust Conservancy



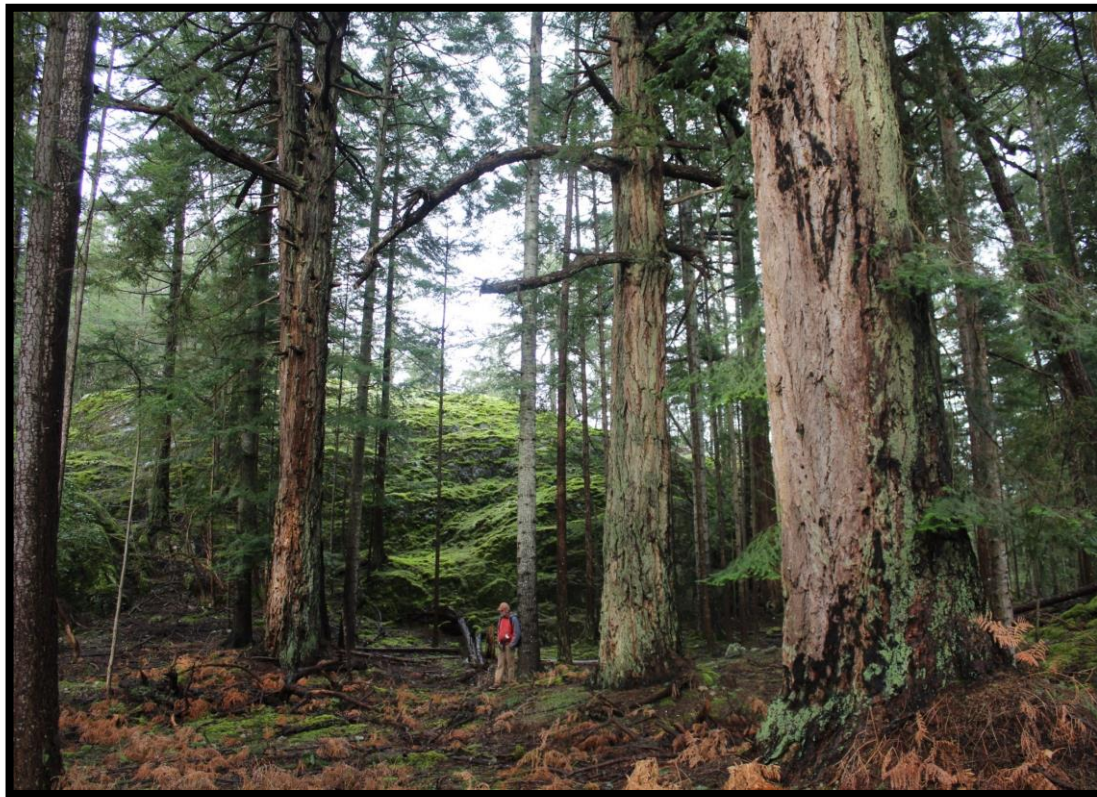
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Islands Trust Conservancy Board on February 13, 2020  
Lasqueti Island Nature Conservancy Board on March 4, 2020  
Nanaimo & Area Land Trust Board on March 4, 2020

## i. Executive Summary

Islands Trust Conservancy acknowledges and respects that Lasqueti Island is within the traditional territory of multiple Coast Salish peoples, whose historical relationship to the land, culture, and spirit of this place continues to this day. Islands Trust Conservancy is committed to honouring the rich history of Indigenous stewardship in the lands and waters of the Islands Trust Area and to building mutually respectful relationships between Indigenous and non-Indigenous partners in conservation. Therefore, this Management Plan for Salish View Nature Reserve is a living document that will evolve as opportunities for knowledge sharing arise and understanding grows.

In August 2019, the Islands Trust Conservancy acquired the 11.5-hectare (28 acre) Salish View Nature Reserve on Lasqueti Island, BC. The purchase of the property was made possible by a successful community fundraising effort led by the Islands Trust Conservancy (ITC) and the Lasqueti Island Nature Conservancy (LINC), and by a substantial donation off the appraised property value by the landholders. A Section 219 conservation covenant was registered for the property at the time of title transfer naming Lasqueti Island Nature Conservancy (LINC) and Nanaimo & Area Land Trust (NALT) as Covenant Holders.



*Photo 2. Gordon Scott (LINC) with large veteran Douglas-fir trees.*



Salish View Nature Reserve is located on the southeast corner of Lasqueti Island, directly adjacent to, and northwest of, Squitty Bay Provincial Park (12 hectares). The property rises above Lasqueti Island's rocky southern coastline to a prominent ridgetop with a stunning 270-degree vista of the Salish Sea. The reserve consists of forested areas, including remnant old growth forest, 20 metre-high rocky bluffs, deep, narrow valleys, small wetland pools and moss-covered outcroppings within the Coastal



**Photo 3. Steep rock outcrops and cliffs are found throughout the**

Douglas-fir biogeoclimatic zone. The elevation ranges from 40 to 160 metres. The property possesses significant watershed values and includes four sensitive and provincially red- or blue-listed ecological communities. To date, six species at risk have been noted in or next to the reserve: Little Brown Myotis (*Myotis lucifugus*), Northern Red-legged Frog (*Rana aurora*), Common Nighthawk (*Chordeiles minor*), Olive-sided Flycatcher (*Contopus cooperi*), batwing vinyl lichen (*Leptogium platynum*) and leafless wintergreen (*Pyrola aphylla*).

This management plan is intended to guide long-term management of Salish View Nature Reserve based on site history and ecological features, in accordance with the goals, policies and objectives of ITC. The management objectives for Salish View Nature Reserve are to:

- preserve and protect the natural ecosystems, biological diversity and natural values of the site;
- restore plant and animal communities and ecological process at the site;
- support ongoing inventory, mapping and monitoring to guide management;
- manage invasive plant species throughout the reserve; and
- allow natural forest succession and natural ecological processes and functions to proceed unimpeded without human intervention, except in the case of wildfire or other exceptional situations where remediation is considered imperative.

Key management recommendations are to delineate and sign official authorized trails, enhance habitat around a dug pond, and manage invasive species. Further inventories for species at risk would provide a clearer picture of the ecology of the reserve and guide future management.

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### iii. Acknowledgements

**Table 1. Acknowledgement of thanks.**

<b>Name</b>	<b>Position/Affiliation</b>	<b>Professional Accreditation or subject expertise</b>	<b>Contribution</b>
Carrina Maslovat	Botanist/Contractor	R.P. Bio.	Primary Author, field data collection
Laura Matthias	Species at Risk Biologist/Subcontractor		Secondary Author, field data collection
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Jemma Green	Acting Property Management Specialist/Islands Trust Conservancy		Document review
Gordon Scott	President/Lasqueti Island Nature Conservancy		Background knowledge of acquisition and Conservation Proposal details
Wayne Bright	Former landholder		Background knowledge of site

## 1.0 Introduction

Lasqueti Island is situated within the traditional territory of the Coast Salish peoples, who share a rich history of stewardship in the lands and waters of the Islands Trust Area that inspires the work of Islands Trust Conservancy and its partners. Salish View Nature Reserve (SVNR) was acquired by the Islands Trust Conservancy (ITC) on July 31, 2019. The 11.5 hectare/28 acre-property on southeastern Lasqueti Island was part of a community fundraising effort led by the Lasqueti Island Nature Conservancy (LINC) and the Islands Trust Conservancy (ITC). Two landholders, Wayne Bright and Jennifer McGown, supported the acquisition process by offering the property at a reduced cost.

The Lasqueti Island Nature Conservancy and the Nanaimo & Area Land Trust (NALT) co-hold the conservation covenant on the land that was registered at the time of the acquisition.

### 1.1 Islands Trust Conservancy

Since time immemorial, the lands and waters between Vancouver Island and mainland British Columbia have been home to the Coast Salish people, whose ecological, cultural, and spiritual connections to this place continue to this day. In 1974, the Province of British Columbia recognized this region as a special place within the province where the unique beauty, rural character and diverse ecosystems should be protected for future generations. Through the Islands Trust Act, the province established the Islands Trust, a local government, with the following mandate (known as the Object of the Islands Trust):

*To preserve and protect the trust area and its unique amenities and environment for the benefit of the residents of the trust area and of British Columbia generally, in cooperation with municipalities, regional districts, improvement districts, other persons and organizations and the government of British Columbia. (Islands Trust 2018a)*

In 1990, through the enactment of a section of the Islands Trust Act, the Islands Trust Conservancy (originally called the Islands Trust Fund) was established as a conservation land trust to assist in carrying out the “preserve and protect” mandate. Part 6 of the Islands Trust Act establishes the corporate status, responsibilities, and governance structure of the Islands Trust Conservancy. The Islands Trust Conservancy is one of fifteen corporate entities charged to uphold the Object of the Islands Trust and has, since 1990, protected over 1,267 hectares (3,130 acres) of land as nature reserves, nature sanctuaries and conservation covenants.

The vision of the Islands Trust Conservancy is that the islands and waters of the Strait of Georgia and Howe Sound will be a vibrant tapestry of culture and ecology where humans live and work in harmony with the natural world. This special place will have a network of protected areas that preserve in perpetuity the native species and natural systems of the islands. Engaged residents and conservation partners will work together to protect large natural areas and key wildlife habitat. Viable ecosystems will flourish alongside healthy island communities.

The mission of the Islands Trust Conservancy is to protect special places by encouraging, undertaking and assisting in voluntary conservation initiatives within the Islands Trust Area. Islands Trust Conservancy nature reserves are managed to maintain, preserve and protect the natural features and values of ecosystems. This level of protection is similar to the International Union for Conservation of Nature (IUCN) protected area Category 1B: Wilderness area:

*Large area of unmodified or slightly modified land and/or sea; retaining its natural character and influence, without permanent or significant habitation, which is protected and managed in order to preserve its natural condition. (Lockwood 2006)*

## 1.2 Purpose of Islands Trust Conservancy Management Plans

ITC management plans provide background information and set out the direction of property management as follows:

- Provide general and descriptive information on the property, including location, history, and land use.
- Set out the conservation goals and objectives for the property.
- Identify the property's ecological and/or cultural values and features.
- Describe the management issues associated with the property.
- Provide short, medium and long-term management recommendations (action items or tasks) on issues such as: species at risk protection, ecological restoration, public access, educational and research opportunities, invasive species management, and signage needs.
- Preserve and protect cultural, spiritual, and sacred locations.

Once the management plan is developed, the ITC will work to carry out the management actions or strategies identified in the plan, as resources allow. Following general practice and as outlined in the conservation covenant and statutory right of way, the ITC will revise the Management Plan every ten years.

## 1.3 Scope of Islands Trust Conservancy Management Plans

Consistent with the Islands Trust Reconciliation Declaration (Islands Trust 2019), ITC recognizes that its nature reserves may be places of great cultural and spiritual significance to First Nations. Cooperative management of these protected places will provide opportunities to establish and maintain mutually respectful relationships between the Islands Trust Conservancy and First Nations. Relationship-building, knowledge-sharing, healing, and establishment of trust are long-term processes that do not necessarily conform to the timeline required for many management activities (e.g. protecting species at risk, maintaining trails and signage, controlling invasive species, etc.); therefore, Islands Trust Conservancy is committed to developing a parallel *Management Plan for Areas of Cultural Heritage and Sacred Significance* with a flexible timeline. This parallel Management Plan sets out guiding principles for cooperative collaboration between ITC and those First Nations with historical and cultural interests in the area defined by one or more nature reserves. Moreover, the Management Plan defines the



common vision, objectives, policies, and best management practices for the nature reserve(s) to ensure that its natural values and cultural and sacred heritage are maintained for future generations.

#### 1.4 Protected Area Purpose

The purpose of the SVNR is to preserve and protect the representative natural ecosystems and natural values of the site (including rare and endangered plant and animal species), and to maintain the biodiversity of the site for the benefit of the flora and fauna of the reserve, the residents of the island and the province generally. The site is to be protected in accordance with the objectives of the ITC and the Islands Trust.

#### 1.5 Protected Area Objectives

The objectives for the Salish View Nature Reserve are to:

1. Preserve and protect the natural ecosystems, biological diversity and natural values of the Salish View Nature Reserve;
2. Restore plant and animal communities and ecological process where necessary;
3. Allow informal low-impact pedestrian access. Trails may be developed in accordance with the conservation covenant and care should be taken to avoid sensitive and dangerous habitats where possible;
4. Support and enhance continued use of areas of sacred and cultural significance by First Nations where such uses are compatible with protection of ecological values;
5. Support ongoing inventory, mapping and monitoring to guide management;
6. Allow natural forest succession and natural ecological processes and functions to proceed unimpeded without human intervention, except in the case of wildfire or other exceptional situations where remediation is considered imperative; and
7. Remove invasive species throughout the reserve where they compromise natural values.

## 2.0 Property Information

Salish View Nature Reserve is 11.5 hectares (28 acres) in size. The Reserve shares 165 metres of its eastern boundary with Squitty Bay Provincial Park.

### 2.1 Location

Lasqueti Island can be accessed by way of the walk-on passenger-only ferry (no vehicles) that sails between French Creek Harbour on Vancouver Island and False Bay on Lasqueti Island. The ferry is run by Western Pacific Marine for BC Ferries.

There is a publicly accessible dock located in Squitty Bay Provincial Park, but there is no ferry service to that dock.

## 2.2 Legal description

SVNR is legally described as PID: 004-248-481, That Part of North West 1/4 of Section 3, Lasqueti Island, Nanaimo District Shown as Lot 1 on Plan EPP81731. A conservation covenant covers the entire property.

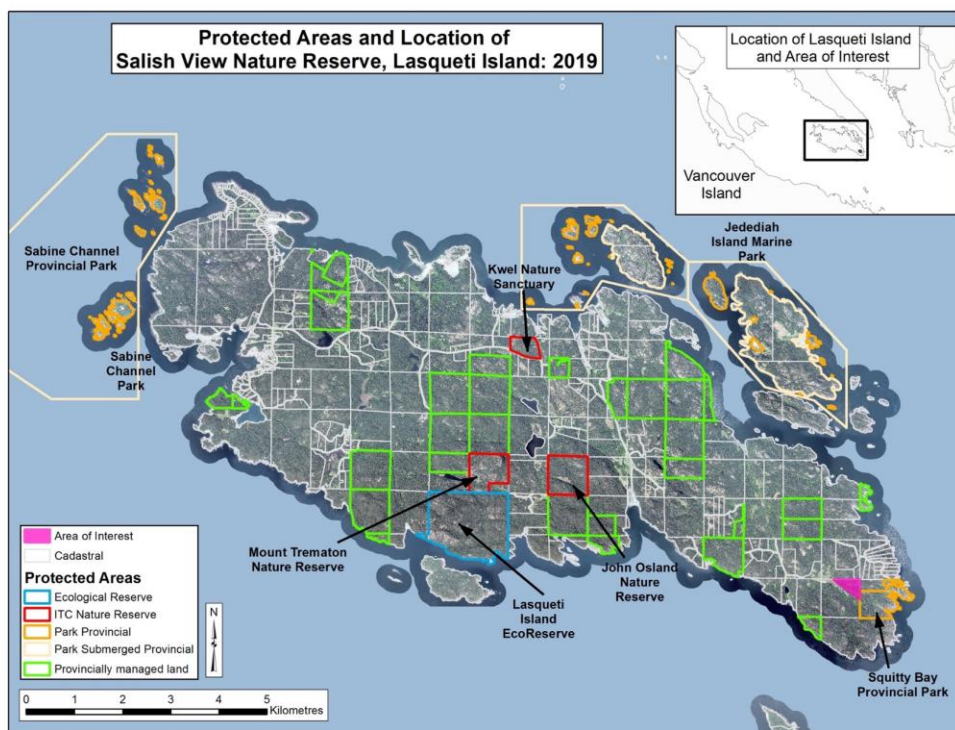
## 2.3 Legal Access

Legal access to SVNR is off Main Road, which runs along the southwest boundary of the property. Main Road is a section 42 road under the BC Transportation Act and is designated as a minor rural road under a Ministry of Transportation and Infrastructure (MOTI) agreement with Islands Trust (MOTH 1992).

## 2.4 Landscape Context

Lasqueti Island is located at the northern end of the Strait of Georgia, approximately 15 kilometres east of Vancouver Island and 20 kilometres west of the mainland. Lasqueti Island is an isolated, rural Gulf Island governed by the Islands Trust and falls within the Powell River Regional District (see Figure 1 for location and protected area context).

SVNR is located on the southeast side of Lasqueti Island (Figure 1). To the north of the SVNR is a 60.7-hectare (150 acre) tract of forested land with a small homestead. To the northeast are rural, 4.0-hectare (10 acre), forested residential lots and one 12.1-hectare (30 acre) lot in various stages of low-impact development. To the west, southwest and south of the property is the 52.6-hectare (130 acre) parent parcel, a forested tract with a small house and about 4 hectares (10 acres) of cleared agricultural land (boundary photos in Appendix A).



**Figure 1. Lasqueti Island and protected areas surrounding the SVNR (reserve highlighted in pink).**

The 12-hectare (29.7 acres) Squitty Bay Provincial Park directly abuts SVNR along 165 metres of its eastern boundary. The Purpose Statement for Squitty Bay Provincial Park states under “Management Considerations- Vulnerability” that the small size of the Park limits the ability to protect the rare ecosection and biogeoclimatic variants (BC Parks 2002). The acquisition of SVNR aids in addressing BC Parks’ concern by conserving adjacent lands: the protection of SVNR effectively doubles the area of protected contiguous Coastal Douglas-fir forest (CDFmm) and buffers the rare vegetation types found in the Provincial Park.

## 2.5 Site History<sup>1</sup>

Lasqueti Island is within the traditional territory of multiple Coast Salish First Nations who have called this place home since time immemorial. The Coast Salish peoples maintained a vital, dynamic, and sustainable connection to their territory and developed rich cultural, spiritual, and traditional ecological knowledge. However, cultural heritage and sacred sites of Lasqueti Island and the greater Islands Trust Area were negatively impacted by European settlement. Past archeological activities, vandalism, and land use have disturbed sites of cultural and spiritual importance. Nevertheless, the land and the greater territory remains an embodiment of the stories, oral history, and culture of these First Nations. Recent archaeological work has shown that there were permanent longhouse settlements along the coastal areas with high-value marine resources; fish traps and clam gardens provide evidence of a long history of settlement (Hopwood 2017). Some archaeological artifacts on Lasqueti date back thousands of years (Lasqueti Island Internet Access Society 2012 in EBB 2012).

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<sup>1</sup> The Islands Trust Conservancy recognizes that the language commonly used to refer to land may be disrespectful to First Nations. For example, notions of ‘private’ and ‘Crown’ land do not appropriately recognize aboriginal title. The words “provincially-managed land” or “federally managed land” will be used in place of “Crown”. “Privately managed” will be used in place of “private” and “land holder” instead of “land owner”.



Lasqueti Island was named in 1791 after Juan Maria Lasqueti, a prominent Spanish naval officer (Akrigg and Akrigg 1988). European settlers arrived on the island in the 1860s and raised sheep which were taken to market in Naniamo (Gulf Islands Guide 2019). Much of the island was logged prior to the 1950s (Gulf Islands Guide 2019).

Many of the older veteran Douglas-fir trees on the reserve have fire scars on their bark. A fire is believed to have spread through this part of Lasqueti Island in the 1920s (Scott pers. comm. 2019).



*Photo 4. Small dug pond*

## 2.6 Anthropogenic Features

There is a small, human-made pond located near the centre of the property that was dug by the former landholder (Photo 4). An old roadway accesses this pond from the southeast and a primitive foot trail currently exists through portions of the site. Some of the trails have been enhanced by neighbouring landholders (e.g. switchback trails, a bike bridge and rock walls built for a mountain bike trail leading to a bordering property to the north of SVNR). Several caged trees line the roadside boundary (Photo 5). There is no other infrastructure on the property.



*Photo 5. Caged tree along roadside.*

An archeological survey has not been completed for SVNR.

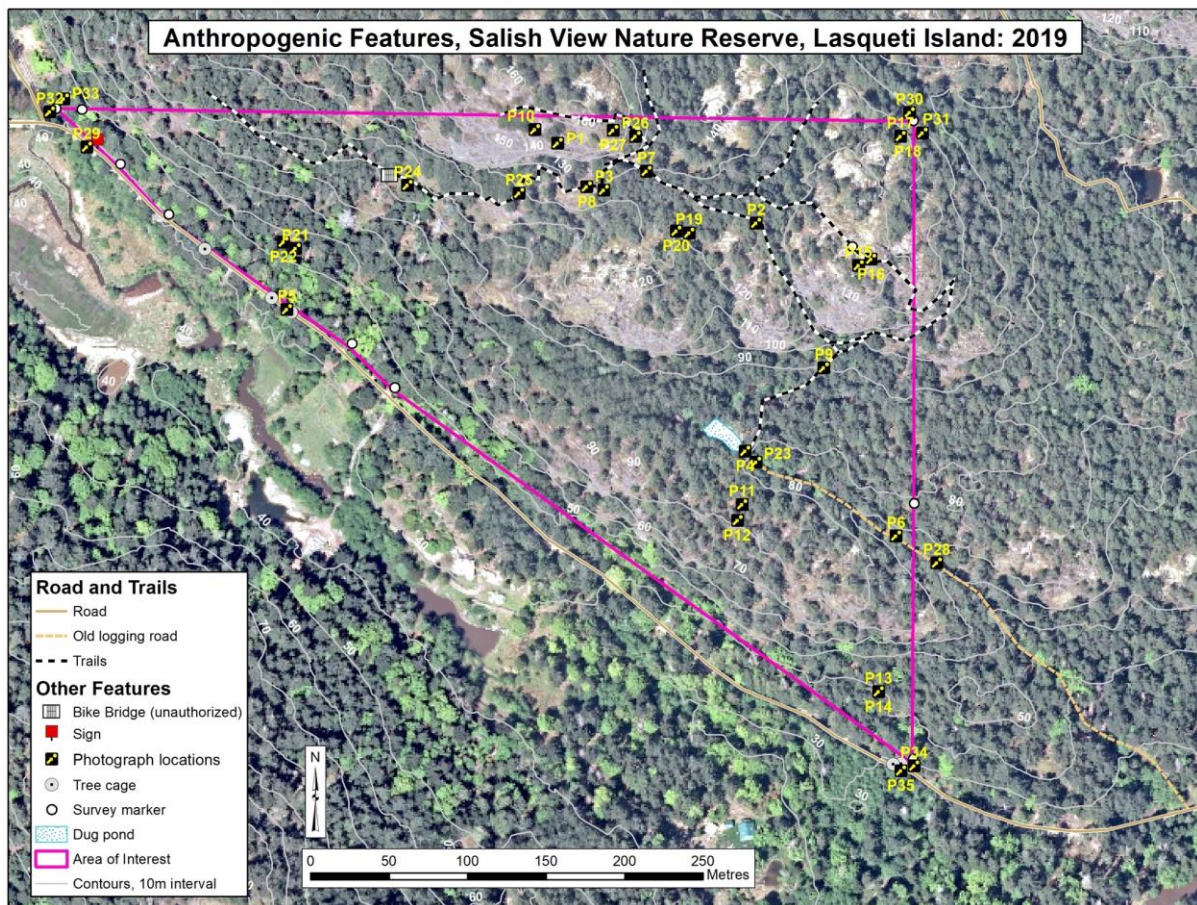
**Table 2. Anthropogenic features in SVNR.**

Anthropogenic Feature	Description	Condition	Photopoint Location
Dug pond	Human-made pond built by former landholder for fire suppression, steep sides	Fair	P4
Caging	Caged grand fir trees on roadside	Fair	P5

Wooden bridge	Wooden bridge: part of unauthorized mountain bike trail leading to north end of SVNR	Fair	P24
Mountain bike trails	Unauthorized mountain bike trails leading to property north of SVNR, rock walls built on sides of many small switchbacks	Fair	P25
Trail	Unauthorized trail leading to private property to north of SVNR	Fair	P26
Sign	Unofficial painted wooden roadside sign ("No Hunting or Shooting").	Poor	P29

## 2.7 Undersurface Rights

There are no undersurface rights associated with this reserve.



**Figure 2. Anthropogenic features and photopoint stations within SVNR.**



## 2.8 Notations, Charges, Liens and Interests

There are no water licenses, tenancies or other agreements on the SVNR.

A Section 219 Conservation Covenant (Registration Number: CA7658688) and Section 218 Statutory Right of Way (Registration Number: CA7658689) were registered over the lands in 2019 at the time of acquisition in favour of Lasqueti Island Nature Conservancy (LINC) and Nanaimo & Area Land Trust (NALT).

The general intent of the covenant agreement is:

- (a) to protect, preserve, conserve, maintain, enhance and, if applicable from time to time restore, the natural state of the Land and the Amenities as described in the Report (baseline documentation); and
- (b) to prevent any occupation or use of the Land that will impair or interfere with the natural state of the Land and the Amenities as described in the Report.

The Statutory Right of Way outlines permitted access and activities for the Covenant Holders.

## 2.9 Local Planning Designations

The Lasqueti Island Local Trust Committee, consisting of two locally elected officials and one Islands Trust Executive Committee Member, governs the local land use planning on Lasqueti Island (EBB 2012). The Lasqueti Island Official Community Plan outlines broad community goals, objectives, and policies regarding future land use and development on the island (Islands Trust 2011). The SVNR is designated as Land Based (LB) in the Lasqueti Island Official Community Plan No. 77 (OCP) and is zoned Land Based (LB) in the Lasqueti Island Land Use Bylaw No. 78 (LUB) (EBB 2012).

There are no development permit areas or other zoned areas within the SVNR. The LB designation allows for residential, agriculture, forestry, and home enterprise uses as well as buildings and other structures. A new zoning designation of Watershed Protection 1 (WP1) may be considered by ITC as a more appropriate zoning and land use category for the SVNR.



**Photo 6. Pink ribbon delineates SVNR boundary along connector trail through Squitty Bay Provincial Park.**



## 2.10 Existing Public and Other Use

Salish View Nature Reserve falls within the territory of multiple First Nations, and as such has been a site of cultural activity for thousands of years. There is knowledge and oral history relating to this site that may or may not be shared outside of the membership of a First Nation. As a first step toward strengthening cultural connections to the land that were negatively impacted by European settlement, ITC is exploring the potential of a Management Plan for Areas of Cultural Heritage and Sacred Significance that will support and enhance the continued use of the site by First Nations.



**Photo 7. Trail braiding visible on some steep terrain in the reserve.**

There are currently several primitive, unauthorized, unsigned trails through the reserve (Figure 2), some of which were developed by adjacent landholders (Scott pers. comm. 2019). There is an extensive built mountain bike trail with terraced rock walls and a wooden bridge leading to a private property to the north. There are several areas where trail braiding is occurring. There is an access trail that leads through Squitty Bay Provincial Park off Main Road that follows an old logging road and there is evidence of erosion, primarily within the provincial park, during times of heavy precipitation. Feral sheep and native Black-tailed Deer (*Odocoileus hemionus*) are also prevalent in the reserve and they may create other trails that lead to unauthorized public use. In the future, trails should be clearly delineated for public use to reduce erosion and trail braiding.



**Photo 8. Rocky cliffs and outcrops next to existing trail.**

### 3.0 Inventory by Ecological Community

#### 3.1 Ecological Significance

SVNR contains a complex mixture of rocky ridges, 20-meter high bluffs, deep, narrow valleys, shallow wetland pools, and open, moss covered bluffs. Shore pine, western redcedar, arbutus and Douglas-fir, some at least 350 years old, occupy the site.

During site visits from January 11-13, 2019, one Northern Red-legged Frog (*Rana aurora*) was observed. Species at risk surveys from July 8-10<sup>th</sup> found two Northern Red-legged frogs next to the dug pond (Maslovat and Matthias 2019). Common Nighthawk (*Chordeiles minor*) was heard and seen calling and displaying above Salish View and Olive-sided Flycatcher (*Contopus cooperi*) was heard in the adjacent Squitty Bay Provincial Park (Maslovat and Matthias 2019). Many patches of batwing vinyl (*Leptogium platynum*) were noted on rock faces with spring seepage during this survey (Maslovat and Matthias 2019). There is a record of leafless wintergreen (*Pyrola aphylla*) in the reserve on iNaturalist (iNaturalist 2019) that was not seen during 2019 surveys.

An Anabat Express detector was installed for two nights (January 11 and 12, 2019) at the dug pond, but no bats were recorded at that time. Surveys on July 8<sup>th</sup> and 9<sup>th</sup> with the Anabat Express next to the dug pond recorded five bat species. The most abundant species were the Little Brown Bat (*Myotis lucifugus*) and Western Long-eared Myotis (*Myotis evotis*) (Maslovat and Matthias 2019).

In the Conservation Proposal for SVNR from LINC as part of the acquisition campaign, Peregrine Falcon (*Falco peregrinus*), and western toad (*Anaxyrus boreas*) were also noted although it is not clear whether these species were verified on the reserve or on Lasqueti Island in general.

**Table 3. Species at Risk in SVNR.**

Species Name		Status				
English	Scientific	Provincial	BC List	COSEWIC	SARA	Global
Little Brown Myotis	<i>Myotis lucifugus</i>	S4 (2015)	Yellow	E (2013)	1-E (2014)	G3
Northern Red-legged Frog	<i>Rana aurora</i>	S3 (2016)	Blue	SC (2015)	1-SC (2005)	G4
Common Nighthawk	<i>Chordeiles minor</i>	S4B (2015)	Yellow	SC (2018)	1-T (2010)	G5
Olive-sided Flycatcher	<i>Contopus cooperi</i>	S2S4B (2015)	Blue	SC (2018)	1-T (2010)	G4
Batwing Vinyl	<i>Leptogium platynum</i>	S3S4 (2018)	Yellow	E (2011)	1-E (2011)	G3G4
Leafless Wintergreen	<i>Pyrola aphylla</i>	S3 (2019)	Blue			

SVNR is located in the Coastal Douglas-fir Biogeoclimatic Zone (CDFmm), one of the most biologically diverse and threatened ecosystems in British Columbia. Three red-listed and one blue-listed ecological communities have been documented on the reserve (Table 4). The rugged and diverse topography, including rocky outcrops, cliffs, wet depressions, vernal pools, and multiple exposures create many unique habitats harboring a range of plant and animal species not found on more uniform properties. A grove of veteran Douglas-fir trees occupies an isolated ledge on the property.

Douglas-fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), western redcedar (*Thuja plicata*), arbutus (*Arbutus menziesii*), shore pine (*Pinus contorta* var. *contorta*), bigleaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), bitter cherry (*Prunus emarginata*), and seaside juniper (*Juniperus maritima*) are all found on the reserve. Although trees on the lower slopes of the property have been logged over the years, there is little evidence of logging on the upper slopes and there are no residual stumps. Several large veteran Douglas-fir trees located in deep pocket soils have been aged at over 350 years by auger cores (Scott pers. comm. 2019).

**Table 4. Ecological Communities in SVNR.**

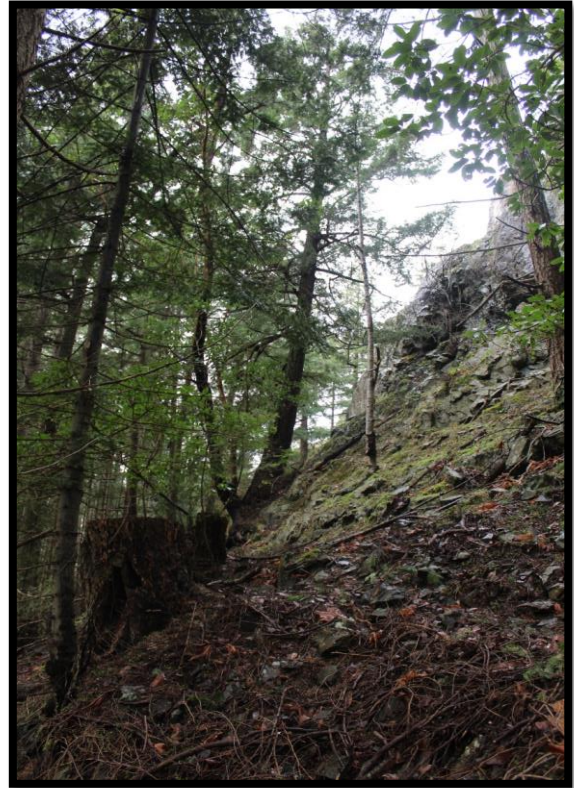
Ecological Community Name		Status		
English	Scientific	Provincial	BC List	Global
Douglas-fir/Dull Oregon-grape (CDFmm01)	<i>Pseudotsuga menziesii</i> / <i>Berberis nervosa</i>	S1 (2018)	Red	G2
Douglas-fir/Arbutus (CDFmm02)	<i>Pseudotsuga menziesii</i> / <i>Arbutus menziesii</i>	S2 (2004)	Red	GNR
Wallace's Selaginella/Reindeer Lichens (CDFmm)	<i>Selaginella wallacei</i> / <i>Cladina</i> spp.	S3 (2012)	Blue	GNR
Grand Fir/Dull Oregon-grape (CDFmm04)	<i>Abies grandis</i> / <i>Berberis nervosa</i>	S1 (2009)	Red	G1



Islands Trust Conservancy acknowledges that there is a wealth of traditional ecological knowledge and a long history of ecosystem stewardship among the First Nations whose territory encompasses Salish View Nature Reserve. ITC will strive to work with First Nations knowledge holders to deepen its understanding, improve its stewardship practices, and, ultimately, support the transfer of traditional ecological knowledge to younger generations within First Nations communities to ensure that it is not lost. At this time, the ecological information presented in this management plan was formed using systems that are based in foundations of Western science.

### 3.2 Climate

The northern Gulf Islands, which include Lasqueti Island, have a climate pattern of warm, dry summers and mild, wet winters. The Islands are influenced by the rain shadow effect of the Vancouver Island and Olympic mountain ranges. The maritime influence moderates the effect of elevation, latitude, and aspect on local temperature and precipitation.



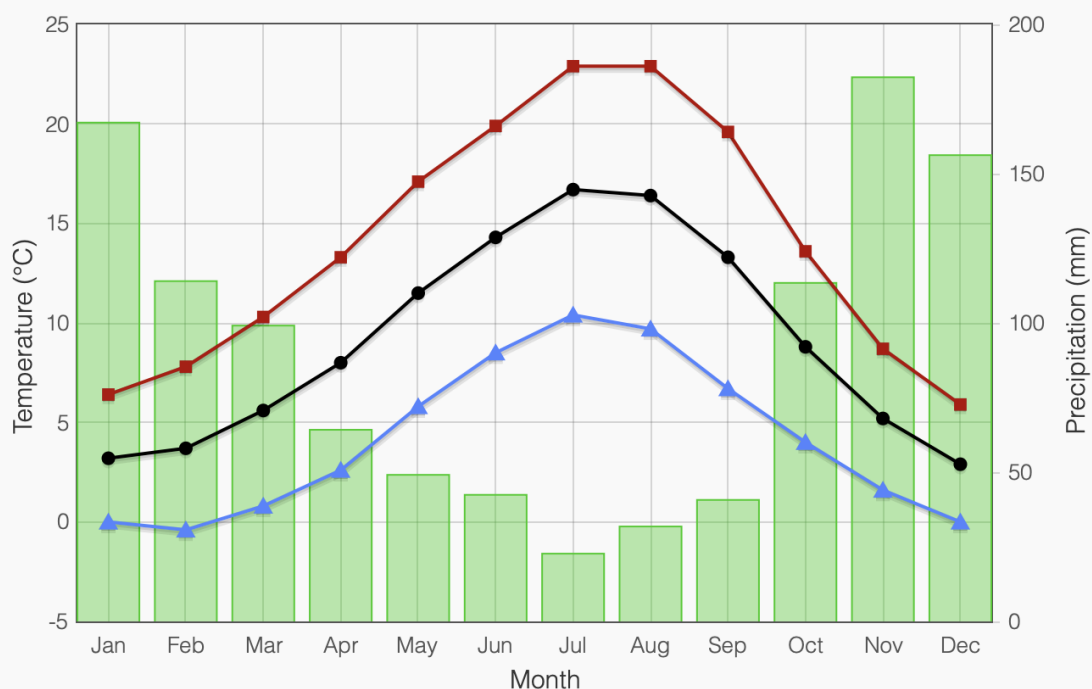
***Photo 9. Evidence of previous logging with stumps in areas of the reserve.***

Nuszdorfer et al. (1991) report Lasqueti Island's average annual precipitation as approximately 1000 mm with less than 5% falling as snow. More recent annual precipitation estimates are available for Qualicum Beach, the nearest weather station located 17 km to the west on Vancouver Island, which experiences 1047.8 mm of rainfall and 35.2 mm of snowfall annually (Government of Canada 2019). Average daily temperatures peak in the summer months (July and August) at 16.4-16.7°C and are lowest in the winter at 3°C (December and January) (Government of Canada 2019) (Figure 3). The reverse is true for precipitation, with the winter months from November to January having the highest rainfall (averaging 150-177 mm) and July and August being the driest months (23-32 mm) (Government of Canada 2019).

The future impacts of climate change are unknown, although a summer drying trend and an increase in frequency and intensity of storm events are predicted (Mauger et al. 2015). More powerful storms may increase erosion. Drier summers may impact the wetlands and riparian hydrology and may shift vegetation communities. Higher temperatures and less precipitation in summer months may lead to localized stress on trees and plants. Maintaining habitat connectivity, biodiversity and ecosystem resilience should assist the Reserve's flora and fauna in adapting to climate change stresses.

■	Daily Maximum Temperature (°C)
●	Daily Average Temperature (°C)
▲	Daily Minimum Temperature (°C)
■	Precipitation (mm)

### Temperature and Precipitation Graph for 1981 to 2010 Canadian Climate Normals LITTLE QUALICUM HATCHERY



**Figure 3. Canadian climate normals for temperature and precipitation at Little Qualicum Hatchery weather station, British Columbia (Government of Canada 2019).**

### 3.3 Geology and Physiology

The SVNR is underlain by marine pillow basalt identified as the Vancouver Group of Triassic age. Outcrops of this material can be highly friable as well as capable of forming moderately high cliff faces (BC LRDW 2012 in EBB 2012).



Glacial scouring and glacial runoff, along with tectonic uplift, are the primary forces shaping the landscape on Lasqueti Island and the SVNR. The reserve is a cliff and coulee-dominated tract of land that rises from 40 to 160 meters in elevation over less than 95 meters horizontal distance. Steep rock ridges bounding narrow draws lead uphill to areas of level ground with drainages falling off in numerous directions. This indicates a relatively young landscape with multiple drainage patterns associated with retreating continental glaciers. The result is a topography with a highly varied mix of features that provide a diversity of habitats for plants and animals, including cliffs; rocky, moss-covered rock outcrops; dark, narrow ravines; vernal pools; dry, south-facing bluffs; and conifer-dominated pockets with deep soils adjacent to open, herbaceous areas. As a result of this diversity, there is a large amount of natural edge, or ecotone, habitat favorable to many bird species (LINC 2018).



**Photo 10. Small ephemeral pool near summit.**

### 3.4 Hydrology

A small, human-made pond is located near the centre of the reserve, which collects precipitation and storm-water runoff. Small areas of moist soils and small forest wetland pools are located in flat areas between rock outcrops (Photos 10, 11 and 12). Short-lived vernal pools occur after rainstorms but quickly evaporate on the dry, south-facing site. There are no naturally occurring creeks or streams in the reserve although there is water flow down the main access road, which is causing some erosion.



**Photo 11. Small ephemeral pool.**

The SVNR lies above the Wamer Creek watershed, which has received stream restoration and salmon enhancement efforts over the last 15 years (LINC 2018). In its undeveloped state, Salish View provides stormwater buffering and natural nutrient loading to Wamer Creek.



**Photo 12. Naturally occurring forested wetland pool.**

### 3.5 Soils

As with many of the Gulf Islands, Lasqueti Island has a rugged landscape containing mainly well-drained, shallow soils over bedrock substrate with pockets of deeper soils. Hopwood (2017) notes:

*The Gulf (Strait) of Georgia region was covered by glaciers from about 29,000 to about 12,000 years ago. The weight of the ice depressed the land surface so that Lasqueti Island was below sea level. As the glaciers retreated and the land rebounded, marine and coastal processes eroded loose materials from the higher and steeper parts of the island and laid down finer-textured soil parent materials on many of the lower-lying and more gently sloping areas. Soils on the sides and tops of the hills vary from bare rock to morainal deposits (mixed material deposited by the glaciers), typically shallow and rapidly drained. Soils are somewhat deeper in the narrow steep valleys, and deepest, with the most water-holding capacity, in the broader lowland valleys and coastal plains.*

Moss and lichen-covered rocky outcrops with little to no soils limit tree growth in many areas of the SVNR. In areas where pockets of soil collect at the base of cliffs or depressions, it is likely low in nutrients and contains loose, rocky fragments.

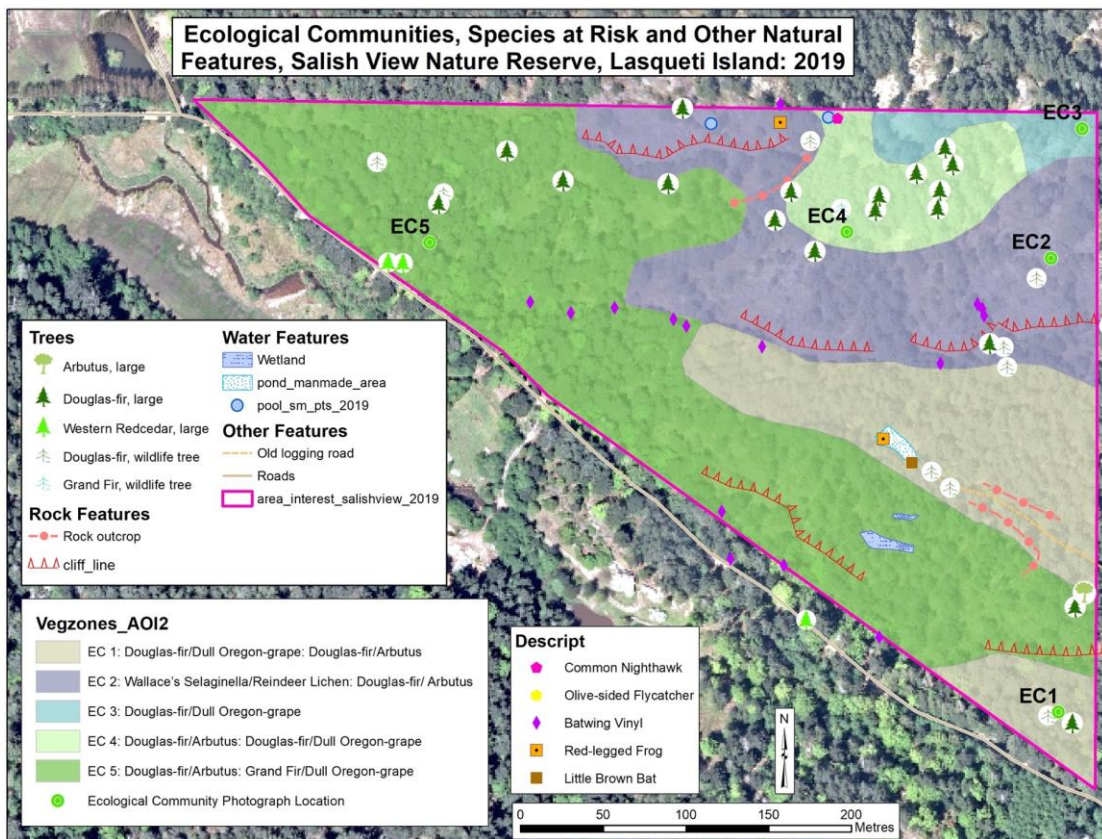


### 3.6 Ecological Classifications

The SVNR area is within the Moist Maritime subzone (mm) of the Coastal Douglas-fir Biogeoclimatic Zone (CDF) (Green and Klinka 1994). Climatic factors, in conjunction with soil conditions and herbivory, result in limited tree regeneration and sparse shrub or forb understory.

### 3.7 Ecological Communities and Site Series

Five ecological communities are delineated based on Terrestrial Ecosystem Mapping (TEM) (Islands Trust 2019b). The ecological descriptions were collected from January 11-13<sup>th</sup>, 2019 (Figure 3). Site series were identified using *A Field Guide for Site Identification and Interpretation for the Vancouver Forest Region* (Green and Klinka 1994; Figure 3). Structural stage was defined using *Standards for Terrestrial Ecosystems Mapping in British Columbia* (RIC 1998). A list of all plant species observed is included in Appendix B. Locations of photopoints and other photograph locations are given in Appendix C, and Figure 2 identifies the locations of all photopoints.



**Figure 4. Ecological Communities in SVNR identifying vegetation plots and other natural features.**

\*Not all large trees present have been identified in this map



**Ecological Community 1. Douglas-fir/Dull Oregon-grape (*Pseudotsuga menziesii*/*Berberis nervosa*): Douglas-fir/Arbutus (*Pseudotsuga menziesii*/*Arbutus menziesii*)**

This site consists of a mature Douglas-fir/Dull Oregon-grape ecological community, with several very large (150-300+ years) veteran Douglas-fir trees. The site is south-facing with pockets of exposed bedrock and soil accumulations in flat areas and depressions. The slope is variable with undulating terrain. The area is moisture-receiving, at the base of a cliff. Understory vegetation is sparse with a small amount of salal (*Gaultheria shallon*) and moss cover, and open, unvegetated areas with leaf litter. Extreme browse pressure from feral sheep and native Black-tailed Deer limits understory plant recruitment.

In slightly higher-elevation portions of the ecological community, soils are thinner and drier as the community transitions to more arbutus with less western redcedar (*Thuja plicata*) and bigleaf maple (*Acer macrophyllum*).



**Photo 13. Ecological Community 1 with veteran Douglas-fir in foreground.**



**Photo 14. Ecological Community 1 showing smaller western redcedar, Douglas-fir and salal.**

**Table 5. Description of Ecological Community 1.**

Polygon ID:	Ecological Community 1
Ecological Community:	Douglas-fir/Dull Oregon-grape ( <i>Pseudotsuga menziesii</i> / <i>Berberis nervosa</i> ): Douglas-fir/Arbutus ( <i>Pseudotsuga menziesii</i> / <i>Arbutus menziesii</i> )
Classification:	CDFmm01
Structural Stage:	6-Mature Forest
Status (BC List):	Red-listed
Photopoint(s):	P13-14
Ecological Community Description:	Remnant mature Douglas-fir/Dull Oregon-grape forest with large veteran Douglas-fir trees (over 150 years old) with fire scars. Lower slope below cliff face, at base of rocky outcrop. South-facing, aspect 200°, slope 25° with rock outcrops. Extremely large wildlife tree and another veteran Douglas-fir tree with crown broken off. Pileated Woodpecker holes in veteran trees that provide excellent habitat for cavity-nesters. Patches of exposed bedrock with soil pockets in small depressions across undulating terrain.
Disturbance Notes:	Fire scars on old veteran trees. No logging visible in plot. Some of the secondary canopy young Douglas-fir have died, possibly due to competition from established veteran trees.
Anticipated Change/Succession:	Minor changes expected. Development of gaps by natural mortality and windthrow may occur.
Wildlife observations:	Visual: Two Pileated Woodpeckers on site, holes in Douglas-fir veteran trees will provide good habitat. Feral sheep feces. Beaded lancetooth ( <i>Ancotrema sportella</i> ) in soil litter. Feather on site (possibly Varied Thrush or American Robin).



**Table 6. Vegetation Species in Ecological Community 1.**

VEGETATION SPECIES	PERCENT COVER (%)						NOTES
	Main Canopy	Secondary Canopy	Shrub Layer	Herb Layer	Moss, Lichen Layer	Non-natives	
<i>Pseudotsuga menziesii</i> (Douglas-fir) veteran trees	30						MC: 150-300+yrs, Ht: 20-30m, DBH: 80-130cm. Four old Douglas-fir vets with fire scars in plot.
<i>Pseudotsuga menziesii</i> (Douglas-fir)	30	1					MC: 30-80yrs, Ht: 20-30m, DBH: 25-50cm. SC: 15-20yrs, Ht: 3-4m, DBH: 10cm
<i>Thuja plicata</i> (western redcedar)	5	T					MC: 30-50yrs, Ht: 15-20m, DBH: 30-45cm SC: 15yrs, Ht: 3-4m, DBH: 10cm
<i>Acer macrophyllum</i> (bigleaf maple)	5						MC: 20-50yrs, Ht: 20m, DBH: 20-35cm
<i>Abies grandis</i> (grand fir)		1					SC: 15-25yrs, Ht: 10m, DBH: 15cm
<i>Gaultheria shallon</i> (salal)			5				
<i>Holodiscus discolor</i> (oceanspray)			1				
<i>Lonicera ciliosa</i> (orange honeysuckle)			1				
<i>Berberis nervosa</i> (dull Oregon-grape)			T				
<i>Lonicera hispidula</i> (hairy honeysuckle)			T				
<i>Rosa gymnocarpa</i> (balhip rose)			T				
<i>Vaccinium parvifolium</i> (red huckleberry)			T				
<i>Polystichum munitum</i> (sword fern)				1			
<i>Galium triflorum</i> (sweet-scented bedstraw)				T			
<i>Mycelus muralis</i> (wall lettuce)						T	
<b>Moss and Lichen Layer</b>							<b>Total Moss Layer: 15%</b>
<i>Eurhynchium oreganum</i>					15		
<i>Dicranum sp.</i>					T		
<i>Isothecium sp.</i>					T		
<b>Cover by Layer (%)</b>	<b>70</b>	<b>2</b>	<b>7</b>	<b>1</b>	<b>15</b>		<b>Total Canopy Cover: 70%</b>

**Ecological Community 2. Rock Outcrop, Wallace's Selaginella/Reindeer Lichens (*Selaginella wallacei*/*Cladina* spp.): Douglas-fir/Arbutus (*Pseudotsuga menziesii*/*Arbutus menziesii*)**

This ecological community is a complex of steep, sparsely vegetated rock outcrops and bluffs with shallow soils having a dominant cover of mosses, reindeer lichen and some exposed rock. The tree canopy includes Douglas-fir, arbutus and shore pine in areas with soil pockets. This community is found predominantly on the higher-elevation ridge tops, allowing for diverse aspects and varying slopes up to 20 degrees.



**Photo 15. Ecological Community 2 showing rock outcrop and trees in soil pockets.**



**Photo 16. Ecological Community 2 showing stunning views from rock outcrops.**

**Table 7. Description of Ecological Community 2.**

Polygon ID:	Ecological Community 2
Ecological Community:	Rock Outcrop, Wallace's Selaginella/Reindeer Lichen ( <i>Selaginella wallacei</i> / <i>Cladina</i> spp.): Douglas-fir/Arbutus ( <i>Pseudotsuga menziesii</i> /Arbutus <i>menziesii</i> )
Classification:	CDFmm/CDFmm02
Structural Stage:	1- Sparse Bryoid and 5-Young Forest
Status (BC List):	Blue-listed and Red-listed
Photopoint(s):	P15-16
Ecological Community Description:	Predominantly rocky outcrops with mosses, reindeer lichen and exposed rock. Extremely thin soils with soil pockets in hollows that support sparse trees.
Disturbance Notes:	Older Douglas-fir with broken crown; some young shore pine struggling, likely due to droughty soils. Fragile habitat sensitive to disturbance.
Anticipated Change/Succession:	Low regeneration due to steep terrain, shallow soils, and deer and sheep browsing. May be impacted in event of future wildfire. Minor changes expected.
Wildlife observations:	Visual: Black-tailed Deer ( <i>Odocoileus hemionus</i> ) and feral sheep droppings. There are perching sites for raptors and seeds for birds and small mammals. Northern Red-legged Frog seen near summit at base of large arbutus tree. One wildlife tree in plot.

**Table 8. Vegetation Species in Ecological Community 2.**

VEGETATION SPECIES	PERCENT COVER (%)						NOTES
	Main Canopy	Secondary	Shrub Layer	Herb Layer	Moss, Lichen Layer	Non-natives	
<i>Pinus contorta</i> var. <i>contorta</i> (shore pine)	5						SC: 20-60yrs, Ht: 3-5m, DBH: 15-30cm
<i>Arbutus menziesii</i> (arbutus)	4	T					MC: 20-60yrs, Ht: 2-3m, DBH: 10-25cm SC: 10-15yrs, Ht: 1-2m, DBH: 5cm
<i>Pseudotsuga menziesii</i> (Douglas-fir)	4	T					MC: 20-150yrs, Ht: 10-15m, DBH: 20-80cm SC: 5-10yrs, Ht: 2m, DBH: 6cm
<i>Cardamine</i> sp.				T			
<i>Claytonia</i> sp.				T			
<i>Festuca occidentalis</i> (western fescue)				T			
<i>Galium triflorum</i> (sweet-scented bedstraw)				T			
<i>Erythranthe</i> sp. (Monkey-flower)				T			
<i>Anisocarpus madioides</i> (woodland tarweed)				T			
<i>Aira praecox</i> (early hairgrass)						T	
<i>Aphanes arvensis</i> (field parslsey-piert)						T	
<i>Anthoxanthum odoratum</i> (sweet vernalgrass)						T	
<i>Cerastium glomeratum</i> (sticky chickweed)						T	
<i>Digitalis purpurea</i> (foxglove)						T	
<i>Hypochaeris radicata</i> (hairy cat's-ear)						T	
<i>Juncus effusus</i> (western rush)						T	
<i>Rumex acetosella</i> (sheep sorrel)						T	
<i>Trifolium dubium</i> (small hop-clover)						T	
<b>Moss and Lichen Layer</b>							<b>Total Moss Layer: 76%</b>
<i>Racomitrium</i> sp.					60		
<i>Polytrichum juniperinum</i> (juniper haircap moss)					5		
<i>Cladina portentosa</i> (reindeer lichen)					3		
<i>Dicranum</i> sp.					3		
<i>Racomitrium canescens</i> (grey rock-moss)					3		
<i>Selaginella wallacei</i> (Wallace's selaginella)					2		
<i>Cladonia</i> sp.					T		
<i>Bryum argenteum</i> (silver-moss)					T		
<b>Cover by Layer (%)</b>	<b>13</b>	<b>T</b>	<b>0</b>	<b>T</b>	<b>76</b>	<b>T</b>	<b>Total Canopy Cover: 13%</b>



**Ecological Community 3. Douglas-fir/Dull Oregon-grape (*Pseudotsuga menziesii*/*Berberis nervosa*): Wallace's Selaginella/Reindeer Lichens (*Selaginella wallacei*/*Cladina* spp.)**

The larger polygon mapped by Terrestrial Ecosystem Mapping includes a complex of 30% Douglas-fir/Arbutus, 30% Wallace's Selaginella/Reindeer Lichens and 40% Douglas-fir/Dull Oregon-grape (Islands Trust 2019b), but this corner of the polygon is dominated by Douglas-fir/Dull Oregon-grape with rock outcrops containing Wallace's Selaginella/Reindeer Lichens. This ecological community is found in the northeast corner of the property and represents a mixed forest that includes Douglas-fir, arbutus and shore pine in pockets where soil has collected, as well as open rock outcrops with mosses, reindeer lichen and exposed rocks. The site is mid-slope, with a steeply sloping cliff leading to a creek at the bottom on the bordering property to the north.



**Photo 17. Ecological Community 3 showing steeply sloping rock outcrop in forest.**





**Photo 18. Ecological Community 3 showing small ledge in steeply sloping forest.**

**Table 9. Description of Ecological Community 3.**

Polygon ID:	Ecological Community 3
Ecological Community:	Douglas-fir/Dull Oregon-grape ( <i>Pseudotsuga menziesii</i> / <i>Berberis nervosa</i> ): Wallace's Selaginella/Reindeer Lichens ( <i>Selaginella wallacei</i> / <i>Cladina</i> spp.)
Classification:	CDFmm01/CDFmm
Structural Stage:	5-Young Forest
Status (BC List):	Red-listed and Blue-listed
Photopoint(s):	P17-18
Ecological Community Description:	Mixed forest including Douglas-fir, arbutus and shore pine with sparse understory vegetation in pockets where soil has collected, and areas of open rocky outcrops with mosses, Reindeer Lichen and exposed rocks. There is a steeply sloping cliff leading to a creek at the bottom on the bordering property to the north.
Disturbance Notes:	No stumps were visible in plot. Rock outcrops sensitive to disturbance.
Anticipated Change/Succession:	No significant changes anticipated. Thin soils and browse from Black-tailed Deer and feral sheep will limit tree regeneration.
Wildlife observations:	Audio: American Robin, Chestnut-backed Chickadee, Pine Siskin

**Table 10. Vegetation Species in Ecological Community 3.**

VEGETATION SPECIES	PERCENT COVER (%)						NOTES
	Main Canopy	Secondary Canopy	Shrub Layer	Herb Layer	Moss, Lichen Layer	Non-natives	
<i>Pseudotsuga menziesii</i> (Douglas-fir)	10	T					MC: 30-80yrs, Ht: 10-15m, DBH: 25-60cm. SC: 10-15yrs, Ht: 2m, DBH: 5cm
<i>Pinus contorta</i> var. <i>contorta</i> (shore pine)	2	T					MC: 50+yrs, Ht: 12m, DBH: 40cm SC: 30yrs, Ht: 5m, DBH: 10-17cm
<i>Arbutus menziesii</i> (arbutus)	T	1					MC: 30-60yrs, Ht: 15m, DBH: 30cm SC: 20-25yrs, Ht: 5-10m, DBH: 19cm
<i>Holodiscus discolor</i> (oceanspray)			T				
<i>Lonicera hispidula</i> (hairy honeysuckle)			T				
<i>Rosa nutkana</i> (Nootka rose)			T				
<i>Claytonia sibirica</i> (Siberian Miner's-lettuce)				T			
<i>Collinsia parviflora</i> (small-flowered blue-eyed Mary)				T			
<i>Elymus glaucus</i> (blue wildrye)				T			
<i>Galium triflorum</i> (sweet-scented bedstraw)				T			
<i>Goodyera oblongifolium</i> (rattlesnake plantain)				T			
<i>Heuchera micrantha</i> var. <i>diversifolia</i> (small-flowered alumroot)				T			
<i>Erythranthe</i> sp. (monkey-flower sp.)				T			
<i>Plectritis</i> sp. (sea blush)							
<i>Polystichum munitum</i> (sword fern)				T			
<i>Sedum spathulifolium</i> (broad-leaved stonecrop)				T			
<i>Anisocarpus madioides</i> (woodland tarweed)				T			
<i>Aira caryophyllea</i> (silver hairgrass)						T	
<i>Aira praecox</i> (early hairgrass)						T	
<i>Aphanes arvensis</i> (field parsley-piert)						T	
<i>Anthoxanthum odoratum</i> (sweet vernalgrass)						T	

<i>Cardamine</i> sp.						T	
<i>Cerastium glomeratum</i> (sticky chickweed)						T	
<i>Cirsium vulgare</i> (bull thistle)						T	
<i>Digitalis purpurea</i> (foxglove)						T	
<i>Mycelis muralis</i> (wall lettuce)						T	
<b>Moss and Lichen Layer</b>							<b>Total Moss Layer: 14%</b>
<i>Cladina portentosa</i> (reindeer lichen)					5		
<i>Dicranum</i> sp.					5		
<i>Eurhynchium oregonum</i> (Oregon beaked-moss)					2		
<i>Polytrichum juniperinum</i> (juniper haircap moss)					1		
<i>Rhytidiadelphus loreus</i> (lanky moss)					1		
<i>Homalothecium pinnatifidum</i> (golden earring moss)					T		
<i>Selaginella wallacei</i> (Wallace's selaginella)					T		
<b>Cover by Layer (%)</b>	<b>12</b>	<b>1</b>	<b>T</b>	<b>T</b>	<b>14</b>	<b>T</b>	<b>Total Canopy Cover: 12%</b>

#### Ecological Community 4. Douglas-fir/Arbutus (*Pseudotsuga menziesii*/Arbutus *menziesii*):

##### Douglas-fir/Dull Oregon-grape (*Pseudotsuga menziesii*/Berberis *nervosa*)

This ecological community is a complex of steep, thin-soiled, rock outcrops interspersed with narrow, moisture-receiving draws where soils accumulate and can support trees. The dominant tree canopy is Douglas-fir with shore pine and arbutus, as well as some grand fir and seaside juniper. Most residual trees are immature, but a few patches of mature and older veteran trees (300+ yrs) were left unlogged. There are small areas that retain moisture with standing water in the winter. The aspect is primarily to the south (160°) with slope varying from 2-5° with steeper rock outcrops.





***Photo 19. Ecological Community 4 showing a mix of Douglas-fir and arbutus next to a mossy rock outcrop.***



***Photo 20. Ecological Community 4 showing Douglas-fir veteran trees with sparse understory.***



**Table 11. Description of Ecological Community 4.**

Polygon ID:	Ecological Community 4
Ecological Community:	Douglas-fir/Arbutus ( <i>Pseudotsuga menziesii</i> /Arbutus <i>menziesii</i> ): Douglas-fir/Dull Oregon-grape ( <i>Pseudotsuga menziesii</i> /Berberis <i>nervosa</i> )
Classification:	CDFmm02/CDFmm01
Structural Stage:	5-Young Forest and 6-Mature Forest with pockets of 7-Old Forest
Status (BC List):	Red-listed
Photopoint(s):	P19-20
Ecological Community Description:	Steep rock outcrops interspersed with moisture-receiving draws with soil accumulation. Mid-slope with some wildlife trees with woodpecker holes. Marginal coarse woody debris on ground and small, loose surface rocks scattered throughout.
Disturbance Notes:	Most trees are immature but a few patches of large, veteran trees with fire scars were left unlogged.
Anticipated Change/Succession:	Over time, the forest will mature and diversify, though browsing from Black-tailed Deer and feral sheep will limit recruitment.
Wildlife observations:	Veteran Douglas-fir trees will provide perching and possibly nesting habitat for raptors.

**Table 12. Vegetation Species in Ecological Community 4.**

VEGETATION SPECIES	PERCENT COVER (%)						NOTES
	Main Canopy	Secondary Canopy	Shrub Layer	Herb Layer	Moss, Lichen Layer	Non-natives	
<i>Pseudotsuga menziesii</i> (Douglas-fir)	25	1					MC: 60-100yrs, Ht: 20-25m, DBH: 50cm SC: 15-25 years, Ht: 5-7 m; DBH: 10-15cm
<i>Pseudotsuga menziesii</i> (Douglas-fir) veteran trees	5						MC: 200+yrs, Ht: 20-25m, DBH: 90-110cm
<i>Pinus contorta</i> (shore pine)	2						MC: 60-80yrs, Ht: 20-25m, DBH: 30-40cm
<i>Arbutus menziesii</i> (arbutus)	1	1					MC: 40-60yrs, Ht: 15-20m; DBH: 30cm SC: 20-30yrs, Ht: 5-10 m; DBH: 15-20cm
<i>Juniperus maritima</i> (seaside juniper)		1					SC: 20-40+yrs, Ht: 3-5m; DBH: 13-15cm
<i>Lonicera ciliosa</i> (orange honeysuckle)			T				
<i>Lonicera hispidula</i> (hairy honeysuckle)			T				

<i>Rosa gymnocarpa</i> (baldhip rose)			T				
<i>Rubus</i> sp. (seedling)			T				
<i>Pteridium aquilinum</i> (Bracken Fern)				7			
<i>Claytonia sibirica</i> (Siberian miner's-lettuce)				T			
<i>Collinsia parviflora</i> (Small-flowered Blue-eyed Mary)				T			
<i>Festuca occidentalis</i> (western fescue)				T			
<i>Galium triflorum</i> (sweet-scented bedstraw)				T			
<i>Sanicula crassicaulis</i> (Pacific sanicle)				T			
<i>Aira caryophyllea</i> (silver hairgrass)						T	
<i>Aira praecox</i> (early hairgrass)						T	
<i>Aphanes arvensis</i> (field parslsey-piert)						T	
<i>Cardamine</i> sp.						T	
<i>Cerastium glomeratum</i> (sticky chickweed)						T	
<i>Digitalis purpurea</i> (foxglove)						T	
<i>Hypochaeris radicata</i> (hairy cat's-ear)						T	
<i>Juncus effusus</i> (Western rush)						T	
<i>Myelis muralis</i> (wall lettuce)						T	
<i>Stellaria media</i> (common chickweed)						T	
<b>Moss and Lichen Layer</b>							<b>Total Moss Layer: 53%</b>
<i>Eurhynchium oregonum</i> (Oregon beaked moss)					40		
<i>Dicranum</i> sp.					5		
<i>Polytricum juniperinum</i> (juniper haircap moss)					4		
<i>Cladina portentosa</i> (reindeer lichen)					2		
<i>Homalothecium pinnatifidum</i> (golden earring moss)					1		
<i>Selaginella wallacei</i> (Wallace's selaginella)					1		
<i>Cladonia</i> sp.					T		
<b>Cover by Layer (%)</b>	<b>33</b>	<b>3</b>	<b>T</b>	<b>7</b>	<b>53</b>	<b>T</b>	<b>Total Canopy Cover: 33%</b>

**Ecological Community 5: Douglas-fir/Arbutus (*Pseudotsuga menziesii*/Arbutus menziesii):  
Grand Fir/Dull Oregon-grape (*Abies grandis*/Berberis nervosa)**

Ecological Community 5 consists of primarily Douglas-fir canopy with some veteran Douglas-fir trees, and a secondary canopy including western redcedar, Douglas-fir, grand fir, and arbutus. There is notable windfall upslope on this steep, lower-slope terrain that borders the roadside of the property. The site has shallow soils and scattered, loose small rocks on the surface. Woodpecker sign is evident on downed windthrow. There is sparse understory throughout.



**Photo 21. Ecological Community 5 showing steep slopes and Douglas-fir dominated forest.**





**Photo 22. Ecological Community 5 showing rock outcrop in steeply sloping Douglas-fir forest.**

**Table 13. Description of Ecological Community 5.**

Polygon ID:	Ecological Community 5
Ecological Community:	Douglas-fir/Arbutus ( <i>Pseudotsuga menziesii</i> /Arbutus <i>menziesii</i> ): Grand Fir/Dull Oregon-grape ( <i>Abies grandis</i> /Berberis <i>nervosa</i> )
Classification:	CDFmm02/CDFmm04
Structural Stage:	5-Young Forest and 6-Mature Forest
Status (BC List):	Red-listed
Photopoint(s):	P21-22
Ecological Community Description:	Second-growth forest on steeply sloping land with shallow rock outcrops on moist, rich lower slopes.
Disturbance Notes:	Significant windthrow on steep upper slopes, and woodpecker sign on downed trees and woody debris. Large cut trunk of Douglas-fir from a fallen tree. Secondary Douglas-fir canopy dying back.
Anticipated Change/Succession:	Changing climate may bring heavier precipitation which may cause additional windthrow on steep, shallow-soil slopes. Trees will mature with time into mature forest. Veteran trees will provide wildlife habitat. Browse from Black-tailed Deer and feral sheep will limit tree and shrub regeneration and may also impact songbird populations with reduction in breeding habitat.
Wildlife observations:	Black-tailed Deer and feral sheep scat. Auditory: Northern Pacific Treefrog, Chestnut-backed Chickadee

**Table 14. Vegetation Species in Ecological Community 5.**

VEGETATION SPECIES	PERCENT COVER (%)						NOTES
	Main Canopy	Secondary Canopy	Shrub Layer	Herb Layer+	Moss, Lichen Layer	Non-natives	
<i>Pseudotsuga menziesii</i> (Douglas-fir) veteran trees	35	1					MC: 200+yrs; Ht: 25-30+m; DBH: 95-105cm
<i>Pseudotsuga menziesii</i> (Douglas-fir)	5						MC: 30-100yrs; Ht: 15-20m; DBH: 20-60cm SC: 15-20yrs; Ht: 3-4m; DBH: 5-10cm
<i>Thuja plicata</i> (western redcedar)		1					SC: 30-40yrs; Ht: 10-15m; DBH: 25-30cm
<i>Abies grandis</i> (grand fir)		T					SC: 15-25yrs; Ht: 3-4m; DBH: 10cm
<i>Arbutus menziesii</i> (arbutus)		T					SC: 20yrs; Ht: 5-15m; DBH: 18cm
<i>Berberis nervosa</i> (dull Oregon-grape)			1				
<i>Lonicera ciliosa</i> (orange honeysuckle)			1				
<i>Holodiscus discolor</i> (oceanspray)			T				
<i>Lonicera hispidula</i> (hairy honeysuckle)			T				
<i>Polystichum munitum</i> (sword fern)			T				
<i>Rosa gymnocarpa</i> (baldhip rose)			T				
<i>Rubus ursinus</i> (trailing blackberry)			T				
<i>Vaccinium parvifolium</i> (red huckleberry)							
<i>Galium triflorum</i> (sweet-scented bedstraw)				T			
<i>Luzula parviflora</i> (small-flowered wood-rush)				T			
<i>Sanicula crassicaulis</i> (Pacific sanicle)				T			
<i>Anisocarpus madioides</i> (woodland tarweed)				T			
<i>Cardamine</i> sp.						T	
<i>Cerastium glomeratum</i> (sticky chickweed)						T	
<i>Digitalis purpurea</i> (foxglove)						T	
<i>Mycelis muralis</i> (wall lettuce)						T	
<b>Moss and Lichen Layer</b>							<b>Total Moss Layer: 60%</b>
<i>Eurhynchium oreganum</i> (Oregon beaked-moss)					60		
<i>Eurhynchium praelongum</i> (slender beaked-moss)					T		
<i>Polytricum juniperinum</i> (juniper haircap moss)					T		
<b>Cover by Layer (%)</b>	<b>40</b>	<b>2</b>	<b>2</b>	<b>T</b>	<b>60</b>	<b>T</b>	<b>Total Canopy Cover: 40%</b>

### 3.8 Wildlife Species

The open rocky bluffs and outcrops provide excellent habitat for reptiles, such as the northern alligator lizard and garter snakes, as well as potential breeding habitat for the ground-nesting Common Nighthawk. Black-tailed Deer and other mammals are found in the reserve, including feral sheep.

The reserve provides habitat for a wide range of birds, though browse pressure from native Black-tailed Deer and feral sheep limit shrub and forb understory. Understory is currently sparse throughout the reserve and likely impacts songbird breeding habitat potential (Martin et al. 2011) and pollinator diversity.

Several wetland pools and a dug pond provide potential breeding habitat for amphibians and important foraging sites for bats. There is notable windthrow in steeper areas of the reserve that will provide habitat for wildlife as it decays. There are many wildlife trees that are actively used by woodpeckers throughout the reserve and which may provide nesting sites for other cavity-nesters, such as owls.



**Photo 23. Wildlife tree with Pileated Woodpecker holes.**

**Table 15. Wildlife Species Observed in SVNR.**

Common Name	Latin Name
<b>Mammals</b>	
American Mink*	<i>Neovison vison</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Black-tailed Deer	<i>Odocoileus hemionus</i>
California Myotis	<i>Myotis californicus</i>
Deer Mouse*	<i>Peromyscus spp.</i>
Little Brown Myotis	<i>Myotis lucifugus</i>
North American River Otter*	<i>Lontra canadensis</i>
Western Long-eared Myotis	<i>Myotis evotis</i>
Yuma Myotis	<i>Myotis yumanensis</i>
Feral Sheep	
<b>Invertebrates</b>	
Beaded Lancetooth	<i>Ancotrema sportella</i>
Blue-eyed Darner	<i>Rhionaeschna multicolor</i>
Moth	<i>Hydroimena speciosata</i>
Northwest Hesperian	<i>Vespericola columbianus</i>



Pacific Bananaslug	<i>Ariolimax columbianus</i>
Pacific Sideband	<i>Monadenia fidelis</i>
Painted Lady	<i>Vanessa cardui</i>
Pygmy Oregonian	<i>Cryptomastix germana</i>
Robust Lancetooth	<i>Haplotrema vancouverense</i>
Tightcoil	<i>Pristiloma</i> sp.
Water Beetle	<i>Dytiscidae</i> family?
<b>Amphibians</b>	
Northern Pacific Treefrog	<i>Pseudacris regilla</i>
Northern Red-legged Frog	<i>Rana aurora</i>
Rough-skinned Newt**	<i>Taricha granulosa</i>
Western Toad*	<i>Anaxyrus boreas</i>
<b>Reptiles</b>	
Common Garter Snake	<i>Thamnophis sirtalis</i>
Northern Alligator Lizard*	<i>Elgaria coerulea</i>
<b>Birds</b>	
American Kestrel*	<i>Falco sparverius</i>
American Robin	<i>Turdus migratorius</i>
Anna's Hummingbird*	<i>Calypte anna</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Barred Owl	<i>Strix varia</i>
Belted Kingfisher+	<i>Megasceryle alcyon</i>
Black Headed Grosbeak+	<i>Pheucticus melanocephalus</i>
California Quail	<i>Callipepla californica</i>
Cassin's Vireo	<i>Vireo cassinii</i>
Chestnut-backed Chickadee	<i>Poecile rufescens</i>
Common Nighthawk	<i>Chordeiles minor</i>
Common Raven	<i>Corvus corax</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Downy Woodpecker*	<i>Dryobates pubescens</i>
Golden-crowned Kinglet	<i>Regulus satrapa</i>
House Wren+	<i>Troglodytes aedon</i>
Northern Flicker	<i>Colaptes auratus</i>
Northern Pygmy-owl*	<i>Glaucidium gnoma</i>
Olive-sided Flycatcher+	<i>Contopus cooperi</i>
Orange-crowned Warbler	<i>Oreothlypis celata</i>
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>
Pine Siskin	<i>Spinus pinus</i>

Purple Finch*	<i>Haemorhous purpureus</i>
Red-breasted Nuthatch	<i>Sitta canadensis</i>
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>
Red Crossbill	<i>Loxia curvirostra</i>
Red-tailed Hawk*	<i>Buteo jamaicensis</i>
Ruffed Grouse*	<i>Bonasa umbellus</i>
Rufous Hummingbird*	<i>Selasphorus rufus</i>
Sharp-shinned Hawk*	<i>Accipiter</i>
Song Sparrow	<i>Melospiza melodia</i>
Spotted Towhee+	<i>Pipilo maculatus</i>
Steller's Jay*	<i>Cyanocitta stelleri</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Turkey Vulture	<i>Cathartes aura</i>
Varied Thrush	<i>Ixoreus naevius</i>
Violet-green Swallow*	<i>Tachycineta thalassina</i>
Western Tanager	<i>Piranga ludoviciana</i>
White-crowned Sparrow+	<i>Zonotrichia leucophrys</i>
Winter Wren*	<i>Troglodytes hiemalis</i>
Yellow Rumped Warbler+	<i>Setophaga coronata</i>

\*Species noted in ITC Conservation Proposal but not observed during 2019 surveys.

\*\*Species noted by questionnaire respondent but not observed during 2019 surveys.

+ indicates observed within 100m of reserve but not within the reserve.

### 3.9 Expected Change Over Time

Forest and understory vegetation regeneration is limited by high herbivory pressure. Enhancement efforts around the human-made pond and protection from browse would assist in regeneration of some shrub and forb understory to increase biodiversity and habitat for amphibians, bats, songbirds and pollinators. Remnant veteran trees and younger conifers will continue to mature and diversify over time, providing habitat for wildlife. The hydrology of ephemeral wetland pools within the reserve may be affected by climate change.

## 4.0 Threats

**Table 16. Threats to Natural Values in SVNR.**

Threats	Mixed Forest	Rocky Outcrops and Bluffs	Wetlands	Overall Threat Rank
<b>Recreational Activities:</b> Hiking can impact conservation targets through wildlife disturbance and causing soil disturbance through trail braiding, vegetation trampling, and erosion. Mountain biking has similar impacts with a higher risk of erosion. With potential for increasing population and development near the protected area, pressure from recreational activities is expected to increase over time. Hiking trails in the reserve are currently not delineated and relatively primitive and there is a rough unauthorized mountain bike trail. Authorized trails should be clearly marked to reduce habitat fragmentation, trail braiding, erosion and unauthorized expansion into sensitive habitats.	Low	Medium	Low	Low
<b>Fire (Catastrophic wildfire):</b> Fire suppression results in a change of fire regime to lower-frequency and higher-intensity fires. Higher-intensity fires are also generally larger in size. A less frequent, more intense fire would potentially replace the mixed forests. Vegetation recovery after catastrophic fire is slow and invasive terrestrial species are likely to invade into areas with bare soil.	Medium	Low	Low	Low
<b>Lack of Tree and Understory Shrub Generation:</b> After over 100 years of feral sheep presence on the island, there is an extremely sparse understory. Browse pressure from both sheep and deer limits natural regeneration, dramatically altering understory vegetation structure and composition, and adversely affecting songbird populations (Martin et al. 2011).	High	Medium	Medium	Medium-High
<b>Invasive Non-Native Species:</b> The most significant threat to biodiversity second only to habitat loss (IUCN 2018). The impact on native ecosystems, habitats and species from non-native plants can be severe and often irreversible. Invasive non-native English holly ( <i>Ilex aquifolium</i> ) is noted on the adjacent Squitty Bay Provincial Park connector trail and should be monitored for spread into SVNR. Non-native grasses are evident in rocky outcrop	Medium	Low	Low	Low



habitats. Foxglove ( <i>Digitalis purpurea</i> ) is scattered throughout the reserve. The presence of feral sheep has limited understory growth.				
<b>Problematic Native Species:</b> Black-tailed Deer ( <i>Odocoileus hemionus</i> ) browse pressure can result in reduced tree and vegetation understory and lower biodiversity values.	Medium	Low	Low	Low-Medium
<b>Human Disturbance:</b> Increased human activity in adjacent private land lots may increase the potential risk of unauthorized human activities in SVNR, such as land clearing, trail building, construction or other incursions into the Nature Reserve boundaries (Carey et al. 2000).	Low	Low	Low	Low
<b>Climate Changes:</b> The trend towards longer, drier summers and droughts in the region may impact the survival of tree seedlings over time, and moisture dependent species such as batwing vinyl lichen, and impact wetland hydroperiods, which could affect amphibian breeding opportunities.	Unknown	Unknown	Unknown	Unknown
<b>Overall Threat Status for Protected Area</b>	<b>Medium</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>



**Photo 24. Rock walls built along unauthorized mountain bike trail with numerous switchbacks leading into bordering property to the north of SVNR.**

#### 4.1 Expected Change to Threats Over Time

Recreational activities and unauthorized human disturbance in the reserve are likely to increase over time given the potential for increased development on Lasqueti Island.

The threat of catastrophic high-intensity wildfire remains high in the region as climate appears to be shifting to increased drier summers and fire suppression leading to increased fuel loads remains active in the region.

Lack of native tree and understory vegetation regeneration will likely remain consistent given the ongoing threat of herbivory from native Black-tailed Deer and feral sheep populations.

Invasive species spread may increase over time. Ongoing monitoring, removal and control efforts should be considered.

## 5.0 Community Engagement

### 5.1 Adjacent Landholders

In preparation for the development of the Management Plan, letters were sent to all landholders and neighbours within a 100 m radius of the reserve. A total of nine letters were mailed on August 15, 2019 (Appendix D). The letters contained information about Salish View Nature Reserve, an invitation to a public meeting, and a questionnaire (see Appendix E).



**Photo 25. Unauthorized trail leading north to bordering property. The small wetland pool in background is just within the northern border of SVNR.**



**Photo 26. Increased encroachment of human activities from neighbouring properties could impact the SVNR. Note wooden bridge built by adjacent landholders as part of extensive unauthorized mountain bike switchback trail in SVNR.**



## 5.2 First Nations

Letters were mailed to the following nine First Nations on August 15, 2019 (Appendix F):

- Halalt First Nation
- Lake Cowichan First Nation
- Lyackson First Nation
- Penelakut Tribe
- Qualicum First Nation
- Shíshálh (Sechelt) Nation
- Snaw'Naw'As Nation
- Stz'uminus First Nation
- Tla'amin Nation

This letter provided information about the nature reserve and invited comment on the cultural significance and traditional use of the area to inform management planning. Lyackson First Nation responding by letter. The letter stated that “Lyackson First Nation had primary and secondary, fishing and marine harvesting rights/practices in this area, but not necessarily title and governing authority. As this referral is in close proximity to other First Nations’ territorial lands and marine areas, Lyackson First Nation defers to those First Nations’ whose title and governing authorities are directly affected. By deferring this referral to another First Nation, Lyackson First Nation in no way surrenders its current rights and title claims. This decision is based on knowledge available at this time. Should Lyackson First Nation identify greater interests in the future we retain the right to revise this assessment.”

## 5.3 Conservation Partners and Community Members

The Islands Trust Conservancy and Lasqueti Island Nature Conservancy held a public meeting at the Lasqueti Community Hall on August 26, 2019. People attending the meeting were asked to provide input on the draft management plan and general management planning for the reserve. Maps and photographs were presented, and residents were asked for their input at that time.

An online questionnaire was also made available from August 18 – Sept 10, 2019 and was completed by 21 people.

## 5.4 Engagement Results

The questionnaire was completed by 21 people. The respondents were primarily full-time Lasqueti residents (90%), with the remainder living on Lasqueti part-time. Most respondents (57%) have visited the reserve once a year or less and many (38%) visit the reserve a few times per year. Almost all who have visited the reserve engage in hiking/walking (95%) and many engage in wildlife viewing (68%). The most important values for respondents were protection of habitat for at-risk species (89%), conservation for the sake of the intrinsic value of nature (78%), and ecosystem services (63%). Recreational opportunities and educational and research



opportunities were each voted as an important value by 21% of respondents. Several respondents noted the threats associated with overgrazing by feral sheep.

## 6.0 Management Recommendations

The general management direction for SVNR is to allow natural successional processes. With the exception of fire, natural disturbance factors such as wind (windthrow), pest infestation, disease and wildlife use should proceed without intervention. Only the removal of invasive plant species is permitted. Trails will be delineated and developed in line with the conservation covenant, with care taken to minimize fragmentation and limit access points. Communication with adjacent property owners is required if designated trails cross onto adjacent properties. Enhancement of the dug pond and surrounding area with vegetation is recommended to improve habitat for wildlife such as amphibians, songbirds, pollinators and bats.

### 6.1 Management Roles

The Islands Trust Conservancy is the sole landholder of the SVNR but will rely on its partnership with the Lasqueti Island Nature Conservancy to assist with on-the-ground management. ITC will monitor the property annually to detect any management issues and LINC and NALT will monitor the reserve to ensure covenant compliance. Any issues will be reported to the Covenant Holders, Lasqueti Island Nature Conservancy and the Nanaimo & Area Land Trust (Table 17).

**Table 17. Conservation Partners in SVNR**

Partner	Role
Island Trust Conservancy	Landholder
Lasqueti Island Nature Conservancy	Covenant Holder
Nanaimo & Area Land Trust	Covenant Holder

### 6.2 Permitted and Prohibited Uses

The reserve is open to the public for recreational hiking and nature appreciation.

The following activities by the public are prohibited:

- Hunting
- Use of motorized vehicles
- Bicycling
- Horseback riding
- Dogs off-leash
- Camping
- Fires
- Forestry
- Livestock grazing (with the understanding that feral sheep will continue to graze unless they can be excluded)
- Tree cutting

- Collection of plants, animals, or fungi

### 6.3 Proposed Monitoring Program

Annual covenant monitoring is important to ensure there are no infractions or management issues occurring within the protected area. The main focus of covenant monitoring should be along the boundary perimeters, where unauthorized trails have been developed, in sensitive bluff habitats, and to identify areas of trail-braiding. Monitoring should determine if any prohibited uses are occurring, such as tree cutting, unauthorized trails development, and use of motorized vehicles, etc. The proposed monitoring route is along designated trails and property lines, where possible.

Species at risk surveys and monitoring are encouraged during appropriate times of year to assess which species are present. Monitoring of invasive species spread is advisable over time so that control measures can be taken as required.



**Photo 27. Northern red-legged frog in SVNR.**

### 6.4 Public Access

There is currently one public access route through a connector trail off of Main Road that leads through Squitty Bay Provincial Park. This trail is unsigned and has significant erosion issues in times of heavy rainfall, with soil, litter and woody debris piling up along the trail in areas (Photo 28). BC Parks should be consulted regarding use of this trail as an access corridor.



**Photo 28. Erosion and collection of debris on trail leading into SVNR through Squitty Bay Provincial Park.**

There is currently an informal trail that crosses over adjacent property to the north of Squitty Bay Provincial Park and to the east of SVNR. ITC, in communication with LINC and NALT, should determine appropriate, safe trail locations in the reserve and ensure that these are well signed to limit additional trail development.

Alternative access opportunities for First Nations may be established through a separate Management Plan for Areas of Cultural Heritage and Sacred Significance.

### 6.5 Signage

Signage within the SVNR should be developed and installed in accordance with the general guidelines in the Islands Trust Conservancy Acquisition and Management of Land Policy (Policy 2.3) which recommends that signage be kept to a minimum.

There is one unofficial roadside “No hunting” sign within SVNR (Photo 29; see Map 2 for location). There is currently no other signage delineating the boundaries, trails or trail access points into the reserve, and it is recommended that these be developed and installed to guide public use of the reserve. These signs should include general contact information for ITC. If development occurs on adjacent properties near the border of the nature reserve, additional boundary signage should be considered in those areas.



**Photo 29. Painted wooden sign along roadside boundary of SVNR**

### 6.6 Trail Use, Maintenance and Development

Designated low-impact trails should be clearly delineated, kept narrow, and located in areas of stable terrain where possible. Sensitive habitats such as rocky outcrops, bluffs, cliffs, and wetlands should be avoided as much as possible. Any trail development should be consistent with the conservation covenant. Trails should be maintained and monitored regularly to ensure public safety and identify any potentially problematic areas (e.g. sites of erosion or unauthorized trail development). Any unauthorized trail spurs or braiding noted in annual covenant monitoring should be prioritized for deactivation and/or restoration. Communication with BC Parks is necessary to ensure that the current connector trail through Squitty Bay Provincial Park is an authorized and accepted access point for SVNR. If the trail crosses onto adjacent private property to avoid the steep bluffs, the landholder must be consulted.

### 6.7 Protection Initiatives for Sensitive Ecosystems and Species and Ecosystems at Risk

Establishing designated trails will help contain foot traffic within authorized areas and minimize disturbance of species at risk and their habitat. Additional trails should not be developed in the sensitive rocky outcrop and bluff habitats or near wetland areas and should avoid steep and



loose terrain which will lead to erosion and increase ecological impacts through trail braiding. Planting native species next to the dug pond will help improve habitat for rare amphibians, such as the blue-listed Northern Red-legged Frog (Photo 27).

### 6.8 Ecological Restoration and Enhancement Options

Ecosystem enhancement efforts next to the dug pond would be highly beneficial to wildlife. Planting wetland plants as well as riparian shrubs and forbs around the wetland will increase biodiversity and enhance habitat for amphibians, bats, songbirds, and pollinators. Fencing would be required to restrict deer and feral sheep browsing. An enhancement plan should be developed by a biologist to outline the scope and activities involved in this work. Fortunately, the site is relatively easy to access with materials.

Restoration efforts in areas with poor regeneration of trees and native shrubs may be desirable to increase diversity, though the steep terrain in much of the reserve may limit this option. Species chosen for restoration should be those currently found within the reserve (Appendix B). Site-specific species recommendations should be made by a biologist because different microsites will support different vegetation. Interpretive and informative signage could be developed to highlight restoration efforts.

### 6.9 Scientific Research/Education Opportunities

Species at risk surveys were done in July 2019 to identify rare gastropods, amphibians, reptiles, avian species, bats, vascular plants and bryophytes. Future research could include further surveys and monitoring during peak season for specific species of interest.

### 6.10 Exotic and Invasive Species Management

Foxglove (*Digitalis purpurea*) is scattered throughout the reserve. Efforts should be made to remove this species in the winter when the first leaves have sprouted and before seed heads form, as they produce large long-lasting seedbanks and will continue to spread into adjacent habitats. English holly was noted on the adjacent Squitty Bay Provincial Park property next to the trail, and this occurrence should be monitored for spread into SVNR. Annual covenant monitoring should note the spread of invasive species and removal efforts should be prioritized if any satellite populations arise.

Established populations of feral sheep on the island have had a considerable impact on the understory flora of the reserve. Sheep droppings and evidence of browsing were noted throughout the reserve. Sheep trails may also lead to greater use by people thereby increasing trail-braiding and unwanted expansion of trails into sensitive habitats in SVNR. A notable lack of bird diversity (Scott pers. comm. 2019; Bright pers. comm. 2019) may be the result of ongoing browse pressure resulting in limited regeneration of trees and understory vegetation, which limits songbird populations (Martin et al. 2011). Installation of exclusion fencing in sensitive areas of the reserve should be considered.



### 6.11 Wildfire Risk Management

Wildfire and wildfire suppression can be extremely damaging to sensitive ecosystems. Developing a fire management plan in consultation with the Lasqueti Island Volunteer Fire Department and the BC Wildfire Service to identify optimum fire suppression techniques is recommended. This information should be provided to the province to be included in their annual fire plan. If possible, saltwater and fire retardants should not be used for fire suppression since both can damage sensitive ecosystems. There are several freshwater lakes on Lasqueti Island that should be used for bucketing in the event of a wildfire.

### 6.12 Climate Change Impacts and Management

Climate change may impact the distribution of ecosystems across the landscape and may alter vegetation patterns, hydrology, biodiversity and the frequency of pest outbreaks. There may be increased risk from natural hazards such as windstorms, storm surges and droughts (Islands Trust 2019a).

Hotter, drier summers coupled with more extreme winter rain events may lead to premature drying of wetlands, changes in groundwater recharge rates, altered water table depths and altered flow rates in the seasonal streams. There may be an increased risk of drought or flooding and changes to water quality (Islands Trust 2019a). Hotter summers may lead to an increased risk of forest fire (Islands Trust 2019a).

Biodiversity will also be impacted. Trends that may prevail in this region include up-slope migration of tree lines and ecosystem boundaries. There may be a loss of species that are unable to adapt to changing climate conditions and an increase in competition from invasive species. Climate change may lead to a loss of habitat (Islands Trust 2019a).

Ensuring ongoing protection and connectivity between large protected areas will aid the dispersal of species into new habitats and across elevations as vegetation patterns shift. These protected area matrices may act as reservoirs for species dispersal into suitable habitats in adjacent areas as climate change shifts the distribution of these ecosystem types (McCloskey et al. 2009).

## 7.0 Action Items

### 7.1 Immediate Actions (1-2 years)

1. Communicate with BC Parks to determine if the old road through Squitty Bay Provincial Park can be used as the main access to the reserve and consider alternative access points/trailhead locations.
2. Design, create and clearly delineate an official trail network within SVNR that avoids dangerous and sensitive sites, is compatible with adjacent landholders and is in accordance with the conservation covenant.
3. Remove small wooden bridge on unauthorized bike trail since it is not safe for foot traffic.

4. Develop and install appropriate signage to identify the reserve boundary at access points, describe official trail routes, inform the general public of the natural values of the site, and outline the permitted and prohibited uses.
5. Develop a wetland enhancement plan for the dug pond, including riparian planting and exclusion fencing.
6. Consider recognizing the contribution of community fundraising efforts and previous landholders in welcome signage.

## 7.2 Short-term Actions (3-5 years)

1. Identify opportunities for cooperative management with First Nations.
2. Consider the SVNR in future ITC wildfire management planning and include evaluation of forest ecology and prevention of damage to surrounding neighbourhoods in consultation with the local and provincial fire authorities.
3. Implement wetland enhancement plan for the dug pond.
4. Communicate with BC Parks and develop an erosion control plan for the main access road.
5. Conduct further species at risk surveys at appropriate times of year to document species of concern, collect baseline data, guide future management and restoration efforts, and to provide a better understanding of the natural values of the reserve.
6. Consider fencing options to restrict feral sheep from all or part of the reserve.

## 7.3 Long term Actions (5+ years)

1. Develop a parallel Management Plan for Areas of Cultural Heritage and Sacred Significance documents with First Nations.
2. Monitor wetland area for plant survival and use by wildlife species.

## 7.4 Ongoing or Annual Action Items

1. Continue to work with the LINC and professional consultants to complete management activities as funds allow.
2. Work with First Nations towards cooperative management of the Reserve using a Management Plan for Areas of Cultural Heritage and Sacred Significance as a guide, once developed.
3. Conduct monitoring to identify management concerns, including off-trail public use, erosion and invasive species.
4. Communicate annually with Covenant Holders, LINC and NALT, to provide updates on the reserve, seek approvals for stewardship activities as necessary, and maintain compliance with the conservation covenant.
5. Conduct ongoing maintenance of signage and trails.
6. Continue to inform the general public of the natural values of the site and the permitted and prohibited uses through information placed in local publications.

## 8.0 Conclusion

The SVNR is an important protected area on Lasqueti Island, where few protected areas currently exist. Although impacted by historic logging and heavy browse pressure from feral sheep and native Black-tailed Deer, pockets of large veteran trees still remain and revegetation efforts can help enhance sensitive habitats. The site expands the network of protected areas and provincially-managed lands on Lasqueti Island, enhancing habitat connectivity for wildlife.

Islands Trust Conservancy will pursue the management action items identified in this plan to achieve the vision, objectives and purpose of the Salish View Nature Reserve. Future management issues may lead to further action items that will be identified in work plans and in future revisions of this Management Plan.

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## 10.0 Appendices

### *Appendix A. Corner property pin photos for SVNR*



*Photo 30. NE corner property pin facing 160°.*





***Photo 31. NE corner property pin facing 270°.***





***Photo 32. NW corner property pin facing 140°.***



***Photo 33. NW corner property pin facing 90°.***





***Photo 34. SE corner property pin facing 0°.***



***Photo 35. SE corner property pin facing 300°.***

**Appendix B. Plants found in SVNR during January and July 2019 field surveys**

\*Noted by questionnaire respondents

Common Name	Latin Name	Status
<i>Abies grandis</i>	Grand fir	
<i>Acer macrophyllum</i>	Bigleaf Maple	
<i>Achillea millefolium</i>	Yarrow	
<i>Adenocaulon bicolor</i>	Pathfinder	
<i>Adiantum aleuticum</i>	Western Maiden-hair Fern	
<i>Aira caryophylla</i>	Silver Hairgrass	Introduced
<i>Aira praecox</i>	Early Hairgrass	Introduced
<i>Alnus rubra</i>	Red Alder	
<i>Amelanchier alnifolia</i>	Serviceberry	
<i>Anacolia menziesii</i>	Menzies' Anacolia Moss	
<i>Anaphalis margaritacea</i>	Pearly Everlasting	
<i>Andreaea rupestris</i>	Black Rock-moss	
<i>Anisocarpus madioides</i>	Woodland Tarweed	
<i>Anthoxanthum odoratum</i>	Sweet Vernalgrass	Introduced
<i>Anthriscus caucalis</i>	Bur Chervil	
<i>Antitrichia curtipendula</i>	Hanging Wing-moss	
<i>Aphanes arvenses</i>	Field Parsley-peart	Introduced
<i>Arbutus menziesii</i>	Arbutus	
<i>Asplenium trichomanes</i>	Maidenhair Spleenwort	
<i>Berberis aquifolium</i>	Tall Oregon-grape	
<i>Berberis nervosa</i>	Dull Oregon-grape	
<i>Brachythecium frigidum</i>	Golden Short-capsuled Moss	
<i>Brodiaea coronaria</i>	Harvest Brodiaea	
<i>Bromus commutatus</i>	Meadow Brome	
<i>Bryum argenteum</i>	Silver-moss	
<i>Bryum canariense</i>	Canary Thread-moss	
<i>Bryum capillare</i>	Bryum Moss	
<i>Bucklandiella heterosticha</i>	No common name	
<i>Campanula rotundifolia</i>	Common Harebell	
<i>Candelaria pacilifa</i>	No common name	
<i>Cardamine oligosperma</i>	Little Western Bittercress	
<i>Carex exiccata</i>	Inflated Sedge	
<i>Carex leptopoda</i>	Short-scaled Sedge	
<i>Carex obnupta</i>	Slough Sedge	
<i>Cerastium glomeratum</i>	Sticky Chickweed	Introduced
<i>Chrysothrix candelaris</i>	Common Gold Dust	
<i>Chrysothrix chlorina</i>	Greenish Gold Dust	
<i>Cinna latifolia</i>	Nodding Wood-reed	
<i>Cirsium vulgare</i>	Bull Thistle	Introduced
<i>Cladonia chlorophaea</i>	Granulating Pixie-cup	

<i>Cladonia furcata</i>	Forking Pixie	
<i>Cladonia portentosa</i>	Coastal Reindeer Lichen	
<i>Cladonia squamosa</i>	Dragon Pixie	
<i>Cladonia transcendens</i>	Graduated Pixie	
<i>Cladopodium crispifolium</i>	Rough-moss	
<i>Claytonia sibirica</i>	Siberian Miner's-lettuce	
<i>Clinopodium douglasii</i>	Yerba Buena	
<i>Collinsia parviflora</i>	Small-flowered Blue-eyed Mary	
<i>Cryptogramma crista</i>	Parsley Fern	
<i>Daucus pusillus</i>	American Wild Carrot	
<i>Dermatocarpon leptophyllodes</i>	Jigsaw Stippleback	
<i>Dermatocarpon miniatum</i>	Blushing Stippleback	
<i>Deschampsia elongata</i>	Slender Hairgrass	
<i>Dicranoweisia cirrata</i>	Curly Thatch-moss	
<i>Dicranum fuscescens</i>	Curly Heron's-bill Moss	
<i>Dicranum scoparium</i>	Broom-moss	
<i>Didymodon vinealis</i>	Soft-tufted Beard-moss	
<i>Digitalis purpurea</i>	Foxglove	Introduced
<i>Diploschistes scruposus</i>	Hard Cowpie	
<i>Elymus glaucus</i>	Blue Wildrye	
<i>Erodium cicutarium</i>	Common Stork's-bill	Introduced
<i>Eryophyllum lanatum</i>	Woolly Sunflower	
<i>Erytranthe alsinoides</i>	Wingstem Monkey-flower	
<i>Erytranthe microphylla</i>	Small Leaved Monkey-flower	
<i>Erytranthe nasuta</i>	Little Yellow Monkey-flower	
<i>Eurhynchium oregonum</i>	Oregon Beaked-moss	
<i>Eurhynchium praelongum</i>	Slender Beaked-moss	
<i>Festuca occidentalis</i>	Western Fescue	
<i>Festuca rubra</i>	Red Fescue	
<i>Fissidens bryoides</i>	Lesser Pocket-moss	
<i>Fissidens crispus</i>	No common name	
<i>Fuscopannaria leucostictoides</i>	Frosted Crackers	
<i>Fuscopannaria pacifica</i>	Silver-rimmed Crackers	
<i>Galium triflorum</i>	Sweet-scented Bedstraw	
<i>Gaultheria shallon</i>	Salal	
<i>Geranium molle</i>	Dovefoot Geranium	Introduced
<i>Goodyera oblongifolia</i>	Rattlesnake Plantain	
<i>Grimmia elatior</i>	Large Grimmia	
<i>Grimmia pulvinata</i>	Grey-cushioned Grimmia	
<i>Grindelia integrifolia</i>	Entire-leaved Gumweed	
<i>Heuchera micrantha</i> var. <i>diversifolia</i>	Small-flowered Alumroot	
<i>Hieracium albiflorum</i>	White Hawkweed	
<i>Holodiscus discolor</i>	Oceanspray	
<i>Homalothecium aeneum</i>	Golden Curl-moss	
<i>Homalothecium fulgescens</i>	Yellow Curl-moss	



<i>Homalothecium nuttallii</i>	Nuttall's Homalothecium Moss	
<i>Homalothecium pinnatifidum</i>	Golden Earring Moss	
<i>Hylocomium splendens</i>	Step Moss	
<i>Hypnum circinale</i>	Coiled-leaf Claw-moss	
<i>Hypnum subimponens</i>	Curly Claw-moss	
<i>Hypocnomyce scalaris</i>	Charcoal Clamshell	
<i>Hypochaeris radicata</i>	Hairy Cat's Ear	Introduced
<i>Hypogymnia enteromorpha</i>	Inflatable Bone	
<i>Hypogymnia imshaugii</i>	Forking Bone	
<i>Hypogymnia inactiva</i>	Wish Bone	
<i>Hypogymnia physodes</i>	Monk's Hood	
<i>Isothecium cristatum</i>	Isothecium Moss	
<i>Isothecium myosuroides</i>	Variable Moss	
<i>Japewia tornoesis</i>	Outgoing Stud	
<i>Juncus effusus</i>	Common Rush	Introduced
<i>Juniperus maritima</i>	Seaside Juniper	
<i>Lecanactis megaspora</i>	No common name	
<i>Lecanora hagenii</i>	Simple Rim	
<i>Lecidea atrobrunnea</i>	Brown Tiles Dot	
<i>Lepidozia reptans</i>	Little-hands Liverwort	
<i>Lepraria finkii</i>	No common name	
<i>Lepraria jackii</i>	No common name	
<i>Lepraria torii</i>	No common name	
<i>Leptogium gelatinosm</i>	Rose-petalled Vinyl	
<i>Leptogium palmatum</i>	Antlered Vinyl	
<i>Leptogium platynum</i>	Batwing Vinyl	
<i>Leucolepsis acanthoneuron</i>	Menzies' Tree Moss	
<i>Lichenomphalia umbellifera</i>	Lichen Agaric	
<i>Lithophragma parviflora</i>	Small-flowered Fringecup	
<i>Lobaria scrobiculata</i>	No common name	
<i>Lonicera ciliosa</i>	Orange Honeysuckle	
<i>Lonicera hispidula</i>	Hairy Honeysuckle	
<i>Luzula comosa</i> var. <i>laxa</i>	Pacific Wood-rush	
<i>Luzula subsessilis</i>	Short-stalked Wood-rush	
<i>Malus fusca</i>	Pacific Crab Apple	
<i>Massalongia carnosa</i>	Moss Liver	
<i>Mentha arvensis</i>	Field Mint	
<i>Metaneckera menziesii</i>	Menzies' Neckera	
<i>Monotropa uniflora</i>	Indian-pipe	
<i>Mycelis muralis</i>	Wall Lettuce	Introduced
<i>Mycoblastus sanguinarius</i>	No common name	
<i>Myosotis laxa</i>	Small-flowered Forget-me-not	
<i>Nemophila parviflora</i>	Small-flowered Nemophila	
<i>Niphotrichum canescens</i>	No common name	
<i>Niphotrichum elongatum</i>	No common name	

<i>Ochrolechia tartarea</i>	No common name	
<i>Ochrolechia upsaliensis</i>	Picnic Donuts	
<i>Ochrolechium rupestre</i>	No common name	
<i>Osmorhiza berteroi</i>	Mountain Sweet-cicely	
<i>Paxistima myrsinites</i>	Falsebox	
<i>Peltigera leucophlebia</i>	Ruffled Pelt	
<i>Peltigera membranacea</i>	Diamond Pelt	
<i>Peltigera neopolydactyla</i>	Frog Pelt	
<i>Peltigera polydactylon</i>	Pioneer Pelt	
<i>Pentagramma triangularis</i>	Goldenback Fern	
<i>Pertusaria amara</i>	Bitter Pert	
<i>Pertusaria ophtalmiza</i>	Inactive Pert	
<i>Pertusaria subambigens</i>	Rose-bud Pert	
<i>Philadephus lewisii</i>	Mock-orange	
<i>Pilophorus acicularis</i>	No common name	
<i>Pinus contorta</i> var. <i>contorta</i>	Shore Pine	
<i>Plagiomnium insigne</i>	Badge Moss	
<i>Plagiothecium undulatum</i>	Flat-moss	
<i>Plantathera transversa</i>	Royal Rein Orchid	
<i>Platismatia glauca</i>	Ragbag	
<i>Platismatia herrei</i>	Tattered Rag	
<i>Plectritis congesta</i>	Sea Blush	
<i>Pohlia nutans</i>	Nodding Thread-moss	
<i>Polychidium muscicola</i>	No common name	
<i>Polypodium glycyrrhiza</i>	Licorice Fern	
<i>Polystichum munitum</i>	Sword Fern	
<i>Polytrichum commune</i>	Common Haircap Moss	
<i>Polytrichum juniperinum</i>	Juniper Haircap Moss	
<i>Polytrichum piliferum</i>	Awned Haircap Moss	
<i>*Populus tremuloides</i>	Trembling Aspen	
<i>Potamogeton natans</i>	Floating-leaved Pondweed	
<i>Prunella vulgaris</i>	Selfheal	
<i>Prunus emarginata</i>	Bitter Cherry	
<i>Pseudotsuga menziesii</i>	Douglas-fir	
<i>Pteridium aquilinum</i>	Bracken Fern	
<i>Pyrola aphylla</i> (not observed-iNaturalist data)	Leafless Wintergreen	
<i>Racomitrium canescens</i>	Grey Rock Moss	
<i>Ramalina farinacea</i>	Hyphenated Ribbon	
<i>Ranunculus</i> sp.	Buttercup	
<i>Ranunculus repens</i>	Creeping Buttercup	Introduced
<i>Rhizocarpon obscuratum</i>	No common name	
<i>Rhizocarpon viridiatrum</i>	Cinder Map	
<i>Rhizomnium magnifolium</i>	Hairy Lantern Moss	
<i>Rhytidiadelphus loreus</i>	Lanky Moss	

<i>Rhytidiadelphus triquetrus</i>	Electrified Cat's Tail Moss	
<i>Rosa gymnocarpa</i>	Baldhip Rose	
<i>Rosa nootkana</i>	Nootka Rose	
<i>Rubus parviflorus</i>	Thimbleberry	
<i>Rubus ursinus</i>	Trailing Blackberry	
<i>Rumex acetosella</i>	Sheep Sorrel	Introduced
<i>Rumex sp.</i>	Dock	Introduced
<i>Sambucus racemosa</i>	Red Elderberry	
<i>Sanicula crassicaulis</i>	Pacific Sanicle	
<i>Saxifraga integrifolia</i>	Grassland Saxifrage	
<i>Scleropodium obtusifolium</i>	Blunt-leaved Moss	
<i>Sedum oreganum</i>	Oregon Stonecrop	
<i>Selaginella wallacei</i>	Wallace's Selaginella	
<i>Sparganium emersum</i>	Emerald Bur-reed	
<i>Sphaerophorus globosus</i>	No common name	
<i>Stellaria media</i>	Common Chickweed	Introduced
<i>Stereocaulon intermedium</i>	No common name	
<i>Syntrichia ruralis</i>	Sidewalk Moss	
<i>Taraxacum officinale</i>	Common Dandelion	Introduced
<i>Taxus brevifolia</i>	Western Yew	
<i>Thuja plicata</i>	Western Redcedar	
<i>Trachybryum megaptium</i>	Trachybryum Moss	
<i>Trifolium dubium</i>	Small Hop-clover	Introduced
<i>Triteleia hyacinthina</i>	Fool's Onion	
<i>Tuckermannopsis chlorophylla</i>	Silver-lined Wrinkle	
<i>Umbilicaria deusta</i>	No common name	
<i>Urtica dioica</i>	Stinging Nettle	
<i>Usnea dioica</i>	No common name	
<i>Usnea filipendula</i>	Herringbone Beard	
<i>Usnia hirta</i>	Sugar-frosted Beard	
<i>Usnea pacificana</i>	Pacific Beard	
<i>Vaccinium parvifolium</i>	Red Huckleberry	
<i>Veronica officinalis</i>	Common Speedwell	Introduced
<i>Weissia controversa</i>	Green-tufted Stubble-moss	
<i>Zigadenus venenosus</i>	Death Camas	
<i>Zygodon viridissimus</i>	Green Yoke-moss	

**Appendix C. Photographic Documentation**

PHOTO STATION	LOCATION (UTM Coordinates)	DIRECTION	PHOTO-GRAPHER	DATE YYYY-MM-DD	DESCRIPTION
Anthropogenic Features as noted on Figure 3					
P4	414560; 5478352	270°	LM	2019-01-11	Dug pond for fire suppression, built by previous landholder.
P5	414268; 5478442	140°	LM	2019-01-12	Caged grand fir tree roadside.
P24	414345; 5478521	290°	LM	2019-01-12	Wooden bridge, part of unauthorized mountain bike trail leading to north of SVNR.
P25	414416; 5478516	295°	LM	2019-01-12	Unauthorized mountain bike trails leading to property north of SVNR, rockwalls built with many small switchbacks.
P26	414490; 5478552	60°	LM	2019-01-12	Unauthorized trail near small wetland along northern boundary of SVNR.
P29	414148; 5478550	140°	LM	2019-01-12	Unofficial painted wooden roadside sign (No Hunting or Shooting).
Natural Features as noted on Figure 3					
P1	414434; 5478555	300 °	LM	2019-01-13	View from Salish View summit.
P2	414567; 5478497	360°	LM	2019-01-11	Large veteran Douglas-fir trees in higher elevation grove. Fire scars from 1920s fire (Scott pers.comm. 2019)
P3	414470; 5478518	40 °	LM	2019-01-12	Rocky outcrop.
P6	414656; 5478298	290°	LM	2019-01-11	Trail entrance to SVNR from Squitty Bay Provincial park off Main Road.
P7	414497; 5478530	292°	LM	2019-01-11	Rock outcrop, trail in foreground with some trail braiding.



P8	414459; 5478520		LM	2019-01-12	Rocky cliff face.
P9	414610; 5478405	287°	LM	2019-01-11	Stump (logging evidence) and rock outcrop cliff.
P10	414434; 5478555	200°	LM	2019-01-13	Small ephemeral pool near summit, about 2x2m with <i>Juncus effusus</i> .
P11	414558; 5478318	300°	LM	2019-01-13	Small ephemeral pool with <i>Juncus effusus</i> , <6 inches deep, 2x10m.
P12	414555; 5478308	250°	LM	2019-01-13	Small forest wetland (30x8m), half in <i>Carex obnupta</i> with grazing at edges, half open water up to 2' deep. Douglas-fir, shore pine and arbutus along edges, wetland is in a rock depression. Photo shows open water half of wetland.
P13	414645; 5478199	275°	LM	2019-01-11	Centre plot Ecological Community 1: Douglas-fir veteran with fire scar, sparse salal understory.
P14	414645; 5478199	90°	LM	2019-01-11	Centre plot Ecological Community 1: Douglas-fir, western redcedar and sparse salal understory.
P15	414640; 5478474	340°	LM	2019-01-12	Centre plot Ecological Community 2: Open rock outcrop with mosses and reindeer lichen, Douglas-fir, arbutus and shore pine. Sparse vegetation.
P16	414640; 5478474	72°	LM	2019-01-12	Centre plot Ecological Community 2: Rock outcrop with mosses and reindeer lichen, Douglas-fir, arbutus. Sparse vegetation. View of Salish Sea.
P17	414659; 5478552	345°	LM	2019-01-12	Centre plot Ecological Community 3: Open rocky outcrops with mosses and

					reindeer lichen, Douglas-fir, arbutus, shore pine, and sparse understory vegetation. NE corner property.
P18	414659; 5478552	110°	LM	2019-01-12	Centre plot Ecological Community 3: Open rocky outcrops with Douglas-fir, arbutus and shore pine, sparse understory vegetation. NE corner property.
P19	414516; 5478492	140°	LM	2019-01-12	Centre plot Ecological Community 4: Douglas-fir, arbutus, sparse understory vegetation, downed woody debris.
P20	414516; 5478492	325°	LM	2019-01-12	Centre plot Ecological Community 4: Large Douglas-fir veteran, arbutus, seaside juniper.
P21	414266; 5478485	315°	LM	2019-01-12	Centre plot Ecological Community 5: Douglas-fir, sparse understory vegetation on steep slope with windthrow.
P22	414266; 5478485	90°	LM	2019-01-12	Centre plot Ecological Community 5: Douglas-fir, arbutus, sparse understory vegetation.
P23	414567; 5478345	10°	LM	2019-01-11	Western redcedar wildlife tree.
P27	414476; 5478556	200°	LM	2019-01-13	Northern red-legged frog female at base of large arbutus tree near summit, at top of very steep and slippery current trail route to summit.
P28	414682; 5478281	315°	LM	2019-01-12	Trail erosion on trail connector from Squitty Bay Provincial Park. Erosion continues about 30m into SVNR up the trail.

P30	414670; 5478562	160°	LM	2019-01-12	NE corner property pin looking along property line. Midway down steep cliff. Pin in foreground on ground.
P31	414670; 5478562	270°	LM	2019-01-12	NE corner property pin looking along property line. Midway down steep cliff. Pin in foreground on ground.
P32	414126; 5478576	140°	LM	2019-01-12	NW corner property pin looking along roadside property line.
P33	414126; 5478576	90°	LM	2019-01-12	NW corner property pin at roadside looking upslope along property line. Note second white IP border pin upslope in centre of photo. Foreground IP pin is roadside.
P34	414658; 5478153	0°	LM	2019-01-12	SE corner property pin.
P35	414658; 5478153	300°	LM	2019-01-12	SE corner property pin.

\* LM=Laura Matthias



ISLANDS TRUST CONSERVANCY

Protecting Canada's Islands in the Salish Sea

***Appendix D. Letter to Landholders***

August 15, 2019

Dear Neighbour,

The Islands Trust Conservancy is creating a management plan for the new Salish View Nature Reserve on Lasqueti Island and we are interested in hearing from you.

The Salish View Nature Reserve (PID 004-248-481, North West 1/4 of Section 3, Lasqueti Island, Nanaimo District; District Plan EPP81731) is an 11.5-hectare (28 acre) protected area located at the southeastern end of Lasqueti Island. The acquisition of the property was made possible by a community fundraising effort led by the Lasqueti Island Nature Conservancy and the Islands Trust Conservancy that involved over 130 donors who each contributed \$10-\$10,000. The purchase was also made possible thanks to substantial grants from the Sitka Foundation, the Clayden family, and Environment and Climate Change Canada, as well as the generosity of the landholder who donated 20 per cent of the property's market value. The Islands Trust Conservancy will work in partnership with the Lasqueti Island Nature Conservancy to manage the property to protect its natural values, sensitive ecosystems, and threatened species.



***Salish View Nature Reserve on southeast Lasqueti Island.***





***View from summit of Salish View Nature Reserve.***

Salish View Nature Reserve is named for its prominent ridgetop which offers a stunning 270-degree vista of the Salish Sea. The Reserve protects Coastal Douglas-fir forests, including remnant old growth forest, 20 metre-high rocky bluffs, deep, narrow valleys, small wetland pools, and moss-covered rocky outcrops. It also protects four sensitive and provincially red- or blue-listed ecological communities.

Management of Islands Trust Conservancy nature reserves focuses on protecting natural values. Development of any kind, including disturbance to native vegetation, soils, and water flow, is prohibited. There are restrictions on the use of the property, outlined in a conservation covenant that is held by the Lasqueti Island Nature Conservancy and the Nanaimo and Area Land Trust, that have been put in place to protect the native plants and animals within the Reserve. We are now developing the first management plan for the recently-acquired property.

Your input is requested for the development of the Salish View Nature Reserve Management Plan. As a neighbour of the Reserve, we would like to hear your ideas and concerns regarding the long-term management of this special place. Please complete the enclosed questionnaire, which is also available online: [www.surveymonkey.com/r/6YQXZL9](http://www.surveymonkey.com/r/6YQXZL9).

The questionnaire can be completed online or returned to me by mail by September 8, 2019, or dropped off in person at the Salish View Nature Reserve Management Plan open house. The open house will be held on Monday, August 26th from 12-2 pm at the Community Hall.

Thank you for taking the time to share your ideas regarding management of the Salish View Nature Reserve. For more information, please contact Jemma Green, A/Property Management Specialist, at 250-405-5193 or [jgreen@islandstrust.bc.ca](mailto:jgreen@islandstrust.bc.ca).

Sincerely,

Kate Emmings  
A/Manager, Islands Trust Conservancy

**Appendix E. Questionnaire Sent to Landholders and Made Available at Open House and Online**

## Salish View Nature Reserve Questionnaire

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Salish View Nature Reserve is a newly-established protected area on southeastern Lasqueti Island. The Reserve rises above Lasqueti's rocky southern coastline to a prominent ridgetop with a stunning 270-degree vista of the Salish Sea. The reserve consists of provincially rare Coastal Douglas-fir forests, including remnant old growth forest, 20 m-high rocky bluffs, deep, narrow valleys, small wetland pools, and moss-covered rocky outcrops. The property possesses significant watershed values and includes four sensitive and provincially red- or blue-listed ecological communities.

The Islands Trust Conservancy's primary goal is to protect and nurture the sensitive ecosystems and natural values on this land. The information and actions required to achieve this goal will be set out in a management plan, which will be updated every 10 years to guide the management of the property. We welcome community input on the development of this plan. Please share your thoughts on the protection and long-term management of the Salish View Nature Reserve.

**1. Would you consider visiting Salish View Nature Reserve? If so, how often?**

- ☐ No, never
- ☐ Once a year or less
- ☐ A few times per year
- ☐ Once a month or more

**2. If you were to visit Salish View Nature Reserve, what activities would you like to do there?**

- ☐ Hiking/walking
- ☐ Wildlife viewing
- ☐ Dog walking
- ☐ Other (please list):

**3. Please list any wildlife and unique plant species you have seen in the vicinity of Salish View Nature Reserve:**

4. What do you believe to be the most important values of nature reserves? (choose three)

- ☐ Protection of habitat for at-risk species
- ☐ Ecosystem services (e.g. clean water and air, erosion control, groundwater recharge, etc.)
- ☐ Recreational opportunities
- ☐ Education and research opportunities
- ☐ Tourism
- ☐ Aesthetic appeal
- ☐ Conservation for the sake of the intrinsic value of nature
- ☐ Other (please specify):

5. What activities do you believe are incompatible with the protection of natural features, and should not be allowed within Salish View Nature Reserve?

6. What do you feel could be the greatest threat to the health of this nature reserve, and should be the highest management priority for the Islands Trust Conservancy?

7. Please provide any other relevant information that will help us make the best management decisions for Salish View nature Reserve.

8. Please share with us any history you know about this property (or South Lasqueti Island) or any knowledge you have about unique cultural or other special features on the property.

9. If you would like to receive periodic updates from the Islands Trust Conservancy on this and other conservation projects on the islands, please provide your name and email address:

10. Do you live on Lasqueti Island?

- ☐ Yes, full-time.
- ☐ Yes, for part of the year.
- ☐ No, I live off-island.

Thank you for your time spent helping us plan the future of Salish View Nature Reserve.

***Appendix F. Letter Sent to First Nations***

August 15, 2019

Dear Chief and Council,

**Re: Salish View Nature Reserve**

The Islands Trust Conservancy, through its work as a land trust, is working on a draft management plan for the new Salish View Nature Reserve on Lasqueti Island.

The Islands Trust and the Islands Trust Conservancy wish to acknowledge First Nations treaty and rights within the Islands Trust Area and ensure that the direction of our management plans is reflective of both reconciliation and conservation goals. We would like to ensure that our management plans are informed by the cultural significance and traditional use of the area so that these values can also be protected—now and into the future. We understand that the cultural significance of this land may be confidential and we would work with you to ensure that the management plan reflects this significance appropriately.

The Salish View Nature Reserve (PID 004-248-481, North West 1/4 of Section 3, Lasqueti Island, Nanaimo District; District Plan EPP81731) is an 11.5-hectare (28 acre) protected area located at the southeastern end of Lasqueti Island (shown on map below). The acquisition of this land was made possible in part by a large community fundraising effort led by the Islands Trust Conservancy (ITC) and the Lasqueti Island Nature Conservancy (LINC). ITC will work in partnership with LINC to conserve the unique natural and ecological values of this land.

Salish View Nature Reserve is named for its prominent ridgetop which offers a stunning 270-degree vista of the Salish Sea. The Reserve protects Coastal Douglas-fir forests, including remnant old growth forest, 20 metre-high rocky bluffs, deep, narrow valleys, small wetland pools and moss-covered rocky outcrops. It also protects four sensitive and provincially red- or blue-listed ecological communities. The Conservancy's management of Salish View Nature Reserve will focus on protecting the natural values of the land and, if appropriate, cultural heritage. There are no registered archeological sites within the Nature Reserve; however, two registered archeological sites are located less than 750 m below the Nature Reserve along the coast of Squitty Bay Provincial Park. We welcome any information to help us better understand and manage the cultural values of Salish View Nature Reserve.

You may also be interested to know that the ITC has developed a draft management plan template that includes cultural heritage. I would be pleased to provide it to you, if you would like to comment on it.



Thank you for considering our request to ensure that the management plan for Salish View Nature Reserve is reflective of treaty, inherent rights, and the traditional territories of your Nation. Please contact me at the number or email listed below. Thank you for your kind consideration.

Sincerely,



Gemma Green  
A/ Property Management Specialist  
Covenant Management and Outreach Specialist  
Islands Trust Conservancy  
250-405-5193 | [jgreen@islandstrust.bc.ca](mailto:jgreen@islandstrust.bc.ca)

Islands Trust Conservancy's Victoria office is located in Coast Salish territory and we acknowledge with respect the BOKEĆEN, Cowichan, Halalt, Homalco, K'ómok, Klahoose, Lake Cowichan, Lekwungen, Lyackson, MÁLEXEŁ, Penelakut, Qualicum, Scia'new, selíłwitulh, SEMYOME, Shíshálh, Snaw-naw-as, Snuneymuxw, Skwxwú7mesh, SÁÁUTW, Stz'uminus, SXIMEŁEŁ, T'Sou-ke, Tla'amin, Tsawwassen, We Wai Kai, Wei Wai Kum, WJOŁEŁP, WSIKEM, and x̣məθḳəỵəm territories in which we live and work.



**Salish View Nature Reserve on southeast Lasqueti Island.**