Management Plan for Lower Mount Erskine Nature Reserve, Salt Spring Island

with notes on the Mount Erskine Crown Lands

prepared for

Islands Trust Fund Board
1627 Fort Street
Victoria, B.C.
V8R 1H8

by

Joel Ussery
Victoria, B.C.
V8X 1C9

Approved by Trust Fund Board
(Resolution #TFB 94/12)
February 1994

Revised January 2005
By Chris Ferris

2005 Revision Approved by the Trust Fund Board
Resolution No. 05/749, March 29, 2005

Table of Contents

Island Trust Fund Board Management Plan for
Lower Mount Erskine Reserve on Salt Spring Island
with notes on the Mount Erskine Crown Lands

A. INTRODUCTION

A.1 Trust Fund Vision

The object of the Islands Trust is

"*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."*

The *Islands Trust Act (Act)* establishes an Islands Trust Fund (ITF), "for the purposes of carrying out the object of the Trust." The Act also establishes a Trust Fund Board, "to administer the trust fund and to manage the real and personal property assets of the trust fund." The Board is authorized to acquire and hold money, land, and interests in land within the trust area for purposes of carrying out the object of the Islands Trust. The Trust Fund Plan, prepared by the Board and approved by the Minister of Community, Aboriginal and Women's Services in accordance with the requirements of Section 37 of the *Islands Trust Act*, outlines the vision, priorities, goals, and policies of the Board and actions which will be taken to support the object of the Islands Trust.

The vision of the Trust Fund Board is to create a legacy of special places, protecting both natural and cultural features in perpetuity, in order to help sustain the unique character and environment of the Islands Trust Area

The mission of the Islands Trust Fund, as an active regional land trust, is to protect special places by encouraging, undertaking, and assisting in voluntary conservation initiatives within the Islands Trust Area. These voluntary conservation initiatives include:

- conservation education,
- land donations and acquisitions to create protected areas, and
- private land stewardship through conservation covenants and similar tools.

Lands with characteristics of interest to the Trust Fund Board have areas or features representative of the Islands Trust Area natural or cultural heritage. Lands of interest to the Trust Fund Board must contain one or more of the following features of significance:

- rare, threatened, vulnerable, exceptional or representative plants and plant communities;
- Garry oak, Arbutus, Douglas-fir and Western hemlock woodlands or forests;
- wildlife habitat or corridors;
- streams, lakes, wetlands, marshes or land associated with a body of fresh water;
- watershed or groundwater recharge values;
- shorelines, including beaches, rock outcrops and islets;
- coastal and inland cliffs;
- buffer areas adjacent or in close proximity to protected lands;

- unusual features or anomalies within the Islands Trust Area archaeological sites;
- historic or cultural landscapes of significance;
- mixed rural landscapes such as farms or other rural areas that contain a mix of woodlands, creeks, wetlands;
- heritage orchards and cleared lands;
- opportunity for nature study or nature education programs;
- opportunity for low intensity, low-impact nature-related recreation; or
- scenic amenities or outstanding views.

Management plans will be prepared for properties owned by the Trust Fund Board (ITFB 2002). These plans will vary according to the specific characteristics, needs, and proposed use(s) of the property. Generally, management plans will address the following matters:

- purpose and objectives for the site,
- background information including the site history and local and regional context,
- environmental inventory,
- management issues such as the extent and nature of protection required, appropriate uses and level of use, research guidelines, risk management, special needs at the site, and
- strategies and actions to achieve the purpose and objectives for the site and to address management issues and needs.

This document presents a management plan for the Lower Mount Erskine Reserve and a brief description of the adjacent Mount Erskine Crown lands and relevant management considerations.

A.2 Background Summary

Project History

The Lower Mount Erskine Reserve was given to the Province of British Columbia in 1976 by Dr. J.H. Fisher, subject to use only as park and greenbelt land, with the intention that when the Islands Trust Fund was empowered to accept land, the property would be transferred to them. In 1990, through the enactment of a section of the Islands Trust Act, the Islands Trust Fund was established as a conservation land trust to assist in carrying out the "preserve and protect" mandate of the Islands Trust. In 1996, the title to the Lower Mount Erskine Reserve was transferred and it is now held by the Islands Trust Fund Board. The Reserve protects a valuable natural area, particularly when considered with adjacent Crown Lands, and provides trail access to the Mount Erskine Crown lands from the Collins Road trail head.

Two parcels adjacent to the reserve and owned by the Crown, Lot 28 and the West ½ of Lot 27, are of interest to the ITF for their natural and recreational values. Acquisition of these parcels by the ITF, or designation as protected areas by the Province of British Columbia, would enhance the conservation and recreational values of the Lower Mount Erskine Reserve and policies in the Salt Spring Island Official Community Plan support such an acquisition or designation. ITF has expressed this interest to the Province on several occasions.

General Visual Description

The Lower Mount Erskine Reserve is approximately 22 hectares (55 acres) in size and encompasses the lower portion of a ridge rising south east toward the summit of Mount Erskine. The property is densely forested with second growth conifers, although mixed forest, with some older trees, occurs in both very moist and very dry areas. Bedrock outcroppings are common.

The Crown land parcels make up a portion of the northern and eastern slopes of Mount Erskine. The northwestern portion of the Crown land contains a cliff which drops very steeply to the lower western slopes of Mount Erskine.

Value to the Community and Province

Lower Mount Erskine Reserve and the Mount Erskine Crown lands are the only large recreation lands within close proximity of Ganges, Vesuvius and the northern portion of Salt Spring Island. The Salt Spring Trail and Nature Club has developed trails through the Reserve and the Crown Lands to the summit of Mount Erskine, which is on private land (Flook 1993). These trails are very popular with island residents and visitors. Mount Erskine is the highest point of land in the northern portion of the Island (Adams 1990). The entire area possesses excellent views to the north and west, interesting bedrock formations, and good examples of upland forest (CRD Parks 1990).

Currently the Crown Lands adjacent to the Reserve are not protected as natural areas. If in future these lands are given protected status, the Mount Erskine Reserve will contribute a valuable component to an area with rich and diverse natural and recreational features.

B. PROJECT DESCRIPTION

B.1 Purpose

To protect in perpetuity the natural values of the Lower Mount Erskine Reserve for the benefit of the residents of the island and the province generally.

B.2 Goals

The goals for management of Lower Mount Erskine Reserve include:

- preservation of the Reserve as a natural area;
- protection of the natural vegetation of the site;
- stewardship of a component of an important recreation area;
- allowing natural biological processes to continue;
- allowing low-impact, passive, recreational use; and
- ensuring recreational uses are consistent with protection of natural values of the site

B.3 Reserve Management

Local community groups may be requested to enter into management agreements with the Trust Fund Board regarding management operations and responsibilities on Board properties.

The Salt Spring Island Trail and Nature Club has agreed to manage the Reserve and has entered into a management agreement with the ITF Board. This management agreement is in effect from 2001 – 2026.

B.4 Conservation Partners

A conservation covenant held by Nature Conservancy of Canada and Habitat Acquisition Trust is registered on the title of the Lower Mount Erskine Reserve.

B.5 Limitations

This management plan was developed in 1994 with information and input from a review of existing information, conversations with Islands Trust representatives and staff, and one site visit accompanied by a member of the Salt Spring Island Trail and Nature Club.

The revision of this plan in 2005 was developed with information from the existing plan, several site visits done for annual monitoring purposes, conversations with Islands Trust staff and members of the Salt Spring Island Trail and Nature Club, the Salt Spring Island Official Community Plan (Bylaw No. 345, 1998) and the Nature Conservancy of Canada Monitoring Report prepared in 2003.

C. PHYSICAL AND NATURAL FEATURES DESCRIPTION

C.1 Location

Lower Mount Erskine Reserve and the adjacent Mount Erskine Crown land parcels are located on Salt Spring Island, one of the Gulf Islands in the Strait of Georgia just to the north of the Saanich Peninsula on southeastern Vancouver Island. The properties are located just to the south of Booth Inlet at Booth Bay in the northwestern portion of the Island, approximately eight kilometers west of Ganges.

C.1.1 Legal Description

Lower Mount Erskine Reserve is approximately 22 hectares (55 acres) in size and is described in the land registry as:

> Lot 3 Section 2, Range 1and 2 West, North Salt Spring Island, Cowichan District, Plan 29481

The Mount Erskine Crown lands are approximately 88 hectares (220 acres) in size and are described as:

> Lot 28, North Salt Spring Island, Cowichan District and the
> Western 1/2 of Lot 27, North Salt Spring Island, Cowichan District.

C.1.2 Map Location

Map sheets 92B 083 and 094 (1:20,000) and 92B/13 (1:50,000).

Latitude: 48^{o} 51' Longitude: 123^{o} 33'

Aerial Photo Line BC 85011 Photo Numbers 4 and 5.

C.1.3 Directions to Site

From the ferry landing at Fulford Harbour, follow the main Fulford-Ganges Road to Ganges. Turn left on Lower Ganges Road and left again onto Rainbow Road which turns into Collins Road. A pulloff at the right shoulder of the road is directly opposite the trail head for the Reserve. Parking is limited to the road shoulder and a small pull out . From Vesuvius, follow Vesuvius Bay Road, turn right onto North End Road and follow it around to the right (west) until it turns into Collins Road.

Lower Mount Erskine Reserve can be legally accessed from Collins Road and from the Mount Erskine Crown lands. The Mount Erskine Crown lands can also be physically accessed from the BC Hydro right of way which passes close to the southeast corner of the Crown lands.

C.2 Site Description

C.2.1 Climate

The climate of the Gulf Islands has been described by Kerr (1951) and Chiltern (1975) and reviewed by Eis and Craigdallie (1980) and van Vliet *et al.* (1987). While there is some minor local variation, climatic averages are relatively consistent throughout the area. Since Gulf Island weather stations record only temperature and precipitation, the similar but more comprehensive records from Victoria International Airport are used to describe the climate of the region.

Climate in the southern portion of the Straight of Georgia exhibits a characteristic pattern of warm dry summers and mild wet winters. The maritime influence tends to moderate the effects of elevation, latitude, and aspect on local temperature and precipitation.

Temperature can range from 35°C to -15°C but is generally much more moderate. The mean temperature of the warmest month is about 16°C and in the coldest month is about 3°C. The frost free period is just over 200 days.

Annual precipitation is approximately 870 mm. Precipitation generally increases from sea level to hilltops, and about 80 percent falls between October and March. Less than six percent of winter precipitation falls as snow, which rarely lasts more than a few days on the ground. July is the driest month.

Warm temperatures and low precipitation in the summer months lead to a pronounced drought or moisture deficit. Moisture deficits are influenced by aspect, slope, vegetation cover, and the ability of the soil to retain moisture. The moisture deficit usually begins in May and ends with the autumn rains in October or November.

C.2.2 Physiography

At 441 meters above sea level (asl), Mount Erskine is the highest point in the northern portion of Salt Spring Island. Mount Erskine is an oval-shaped peak oriented generally northwest and southeast. A steep escarpment (slope greater than 80%) lies to the west and south below the summit. Lower Mount Erskine Reserve rises approximately 220 meters on the north slope of Mount Erskine. The land rises gently from the 60 meter elevation at Collins Road (6-15% slope), and then rises steadily and slightly more steeply to Lot 28. The summit ridge is relatively broad and gently sloping in Lot 27.

C.2.3 Geology and Soils

Mount Erskine is an outcrop of hard, erosion-resistant sedimentary rock primarily composed of conglomerates, dating from 80 million years before present (van Vliet *et al.* 1987). Lower slopes are made up of sandstones and shales. Adjacent valleys have eroded from less resistant mudstones and shales, likely along fault lines. On slopes, soils have developed from glacial till and rock fall. Erosion has exposed bedrock outcroppings. Due to sea level changes after the last glaciation, marine deposits may be found below 100 meters asl.

Four soil types are found on the Reserve (van Vliet *et al.* 1987). These soils are moderately to rapidly drained sandy loams. The primary distinction between soil types is the depth of underlying glacial till and the exact character of the bedrock. Soils on lower slopes typically have between 20% and 50% coarse fragment content and are moist in the winter but subject to summer drought. Soils on upper slopes are very shallow with depth to bedrock of less than 50 cm. Rocky outcrops are common throughout the property.

Relatively steep slopes and poorly developed soils reduce the range of uses the property is able to support. Soil erosion potential is considered high (Adams 1990) and forestry potential marginal (Blom 1989). Generally, well-drained sandy loams with a coarse fragment content below 50% present little impediment to either concentrated or dispersed recreational use (Block and Hignett 1982). However, steep slopes and a higher percentage of coarse fragments and shallow soil makes trail construction difficult. Vegetation on rock outcrops is quite susceptible to damage from recreational use, but once vegetation cover is destroyed these sites can handle high use levels.

C.2.4 Hydrology

Water flow on the Reserve drains north toward Booth Bay and Inlet. Drainage on the Crown Land parcels run to the north and northeast and west into Sansom Narrows. A small portion of the runoff from Lot 27 may flow south into Maxwell Creek. There are no streams on any of the properties; surface and subsurface runoff may collect in hollows and seepage areas at the base of rock faces. Groundwater recharge may occur through faults and contact zones between rock types in underlying bedrock.

C.2.5 Vegetation and Landscape Classification

Lower Mount Erskine Reserve and Mount Erskine Crown lands occur within the Coastal Douglas-fir moist maritime (CDFmm) biogeoclimatic variant (Klinka *et al.* 1979, Meidinger and Pojar 1991). This variant is characterized by forests dominated by coastal Douglas-fir (*Pseudotsuga menziesii* var *menziesii*) with a shrub understory of salal (*Gaultheria shallon*) and dull oregon grape (*Mahonia nervosa*). Vegetation communities are most strongly differentiated by available soil moisture, depth and nutrient status. Western red cedar (*Thuja plicata*), grand fir (*Abies grandis*) and red alder (*Alnus rubra*) occur on moister sites. Garry oak (*Quercus garryana*) and arbutus (*Arbutus menziesii*) are most often restricted to dry rocky sites on hilltops and along the coast.

Eis and Craigdallie (1980) have integrated topography, exposure, slope, soils, drainage and vegetation to designate eight landscape units or categories for the outer Gulf Islands. This landscape unit framework is extremely useful in assessing site activity and development limitations and can be easily applied to Salt Spring Island. There are three landscape units present on the Reserve and Mount Erskine Crown lands: solid bedrock, broken rock, and shallow soil.

C.2.6 Flora

The natural vegetation of Salt Spring Island has been mapped by Clements and van Barneveld (1985). The vegetation descriptions provided in this section are based on this map, the landscape descriptions of Eis and Craigdallie (1980) and a site visit in October 1993. The monitoring report done by the Nature Conservancy of Canada in 2003 contains a list of many of the species that occur on the Reserve. If required, a more formal vegetation inventory should be undertaken during the spring flowering period when the maximum number of herbaceous species are visible.

The logging and fires associated with human settlement of Salt Spring Island have resulted in a mosaic of different forest age classes and structures. Early logging typically removed only the most valuable and accessible Douglas-fir, although a number of later passes may have resulted in the removal of the majority of mature trees on the site. This selective or patch logging released the small Western red cedars and grand fir growing beneath the Douglas-fir canopy and provided gaps in the forest canopy to facilitate Douglas-fir regeneration. Standing dead trees (snags) and trees with broken tops or curved trunks were often left standing. Where felled trees exhibited rot or imperfections they were left on the ground. Where logging has removed Douglas-fir on shallow soils and the sites have been burned, arbutus may now make up a large proportion of the stand.

Forests on Lower Mount Ersknie Reserve and the Mount Erskine Crown lands are dominated by Douglas-fir although arbutus and shore pine (*Pinus contorta* var. *contorta*) are present in and around rock outcrops. Salal, dull oregon grape, wild rose (*Rosa* spp.), honeysuckle (*Lonicera* spp.) and ocean spray (*Holodiscus discolor*) make up the shrub layer. A wide variety of flowering forbs may be present on rock outcrops and in open forests. Bedrock outcrops are covered with mosses, lichens, and hair grasses (*Aira caryophyllea* and *A. praecox*). Other species of native and introduced grass species may also be present. Two hairy manzanita bushes (*Arctostaphylos columbiana*) are present in a forest opening on the Reserve.

A large number of cone-plant (*Hemitomes congestum*) are present adjacent to the trail around arbutus trees. Several young Scotch broom (C*ytisus scoparius*) have become established near the trail.

Pockets of the Douglas-fir forest on shallow soils are so densely stocked with young (approximately 15-45 year old) trees that understory shrub and herbaceous growth is inhibited. Where sufficient light is available, the understory is dominated by salal and dull oregon grape. In these conditions the understory plant pipsissewa (*Chimaphila umbellata*) is conspicuous.

In a few moist hollows on the lower slopes of Mount Erskine, Western red cedar, Western hemlock (*Tsuga heterophylla*) and red alder occur with sword fern (*Polystichum munitum*) and stinging nettle (*Urtica dioica*). The Western red cedar and Western hemlock are well established and were probably released by the selective logging of Douglas-fir.

Rock outcrop vegetation, arbutus, shore pine, and manzanita are more dominant at higher elevations on the Mount Erskine Crown Lands. A rare mature unlogged stand of well-spaced Douglas-fir occurs amidst the broken rock terrain in the western portion Lot 27. These rock outcrops and boulders are covered with a lush carpet of mosses. The extreme southern portion of Lot 27 contains a seepage area dominated by Western red cedar, red alder, and sword fern.

C.2.7 Fauna

Similar mixed coniferous and deciduous forests in the Capital Regional District were considered able to support a moderately high number and/or variety of bird and mammal species (Luckhurst and Blower 1973). There are no known studies of the wildlife in the Mount Erskine area.

A characteristic assemblage of migratory song birds are attracted to open mixed forest at hilltops and the margins of bedrock outcrops. Ravens are common in the area, using the updrafts at Mount Erskine for soaring. Adams (1990) suggests that the escarpment below Mount Erskine may provide nesting habitat for the peregrine falcon. Crevices in bedrock outcrop areas are an important habitat component for a number of animal species. The presence of standing dead trees (snags) provide perches for birds of prey, foraging habitat for woodpeckers, and nesting habitat for bird species which rely on cavities in dead trees. The large amount of woody debris on the forest floor, including fairly large logs, and the presence of moist hollows suggest that there may be good habitat for a number of amphibian species. Many of the trees in a stand of red alder on the Reserve bear scars from deer rubbing their antlers .

C.2.8 Ecological History and Processes

Fluctuating climate since the last glacial advance has shaped the re-colonization rates and species composition of plants and animals in the Gulf Islands. Each climatic period in the last 10,000 to 15,000 years has favoured specific species mixes over others. Our present vegetation associations have located along a general gradient of moisture and nutrients, but natural disturbances, such as fire and windthrow also play a major role. Most animal species have specific habitat requirements and are often associated with more than one habitat type over their life cycle. Human alterations to natural disturbance regimes, the extensive landscape alterations, and the introduction of exotic species have substantially changed the composition and character of remnant natural and semi-natural areas. Rock outcrop and open upland forest vegetation communities are particularly vulnerable to invasions of exotic grasses and the shrub Scotch broom. These community types are also vulnerable to damage from grazing by sheep and cattle.

Prior to European settlement, fire was perhaps the prominent disturbance in the CDF biogeoclimatic zone, although windthrow and mortality from insects and disease also affect forest stands. Most Douglas-fir forests exhibited an moderate fire regime characterized by infrequent (25-100 year) fires which partially replaced the forest stand (Agee 1990). Larger Douglas-fir with thick bark is often able to survive fire .

Open arbutus and pine forests in dry rocky areas likely experienced more frequent fires. The effect of these fires varies with wind patterns, forest structure, topography, and moisture. Some trees are killed immediately, others die slowly. Small trees are particularly vulnerable to fire. Arbutus readily sprouts from the base after damage by fire. Shore pine and Douglas-fir both regenerate after fire on mineral soil.

After fire, or disturbances such as logging, tree establishment occurs in the newly available growing space, often for decades after the event. Smaller established trees not killed by the disturbance may be released from the shading of the canopy and become the new site dominants. Once regenerating trees are large enough for the forest canopy to close, competition for light and nutrients becomes intense. Overtopped trees become stressed and may be killed by shading, insects, or disease. Standing dead and fallen trees from all sources play an important role in the ecology of the forest as sources of nutrients, soil stabilization, sites for plant establishment, and wildlife habitat. However, where stands are dense and there is little vertical separation between woody debris and the forest canopy, the risk of a major fire increases. This risk gradually decreases as the density of the stand decreases and the trees grow taller.

C.2.9 High Visibility and Sensitive Resources

Wildflowers, mosses, and lichens on bedrock outcrops are very sensitive to damage from recreational use. Many of the rare plants in the region are associated with the types of habitat found in the Mount Erskine area.

Arbutus and Garry Oak stands, dead and downed woody debris, and snags have all been designated habitats of major concern by the B.C. Environment. Habitats under this designation are either rare in the province or susceptible to damage from human activities.

C.2.10 Key Environmental Factors

Key environmental factors are the susceptibility of densely stocked forest stands to fire and susceptibility of vegetation and trails to damage from recreational use.

C.2.11 Studies/Inventories

Although the biophysical resources of Salt Spring Island have been mapped, no detailed studies or inventories have been undertaken which are specific to the Mount Erskine Crown lands.

The most detailed inventory of biological resources on the Reserve is contained in the Nature Conservancy of Canada (NCC) *Monitoring Report for the Mount Erskine Property, prepared by Moss Giasson, June 2003.*

C.3 Special Features

C.3.1 Rare/Endangered/Threatened Species

There are no documented occurrences of species of provincial significance on Lower Mount Erskine Reserve or the Mount Erskine Crown lands (BC Conservation Data Centre (CDC) 1993 and Giasson 2003). However, given the large number of rock outcrops, rumoured falcon nesting habitat, and area of old forest on Section 27, it is possible that such species could be found on the properties if inventories were undertaken.

The Blue-listed plant community Upland Douglas-fir/Arbutus (CDC listing) was documented on the Reserve during the monitoring survey conducted by NCC in 2003.

C.3.2 Biodiversity

The variety of elevations, aspects, moisture regimes, forest ages and types, and habitat components on Lower Mount Erskine Reserve and the Mount Erskine Crown land support a wide diversity of plant and animal species.

C.3.3 Scenic/Aesthetic

Benn (1978) and CRD Parks (1991) rated the views from Mount Erskine and the landscape and forest diversity of the area regionally significant. Benn (1975) rated the mature Douglas-fir forest to the east of the summit on Lot 27 as having moderate significance due to the vantage points, attractive topography, and parklike forest.

C.3.4 Historical/Archaeological

There are no known historic or archaeological sites on the Reserve or the Mount Erskine Crown lands.

D. LAND STATUS AND USE

D.1 Land Tenure and History

Lower Mount Erskine Reserve was transferred to the Crown, as represented by the Minister of Environment, in 1976 by Dr. J.H. Fisher subject to use only as park and greenbelt land. The Islands Trust was unable to accept title to the land until it acquired the legislative capability to hold and manage lands, which occurred in 1990. In 1996, the title to the Lower Mount Erskine Reserve was transferred and it is now held by the Islands Trust Fund Board.

D.2 Past and Present Land Use

The only information currently available on past use of the Reserve is the evidence of logging and fire. Extensive logging occurred approximately 45 years ago. Most of the mature Douglas-fir were removed. The only current land use on both the Reserve and the Mount Erskine Crown lands is recreation. Both hikers and mountain bikers are using the trails on these properties.

D.3 Official Community Plan

Both the Lower Mount Erskine Reserve and the adjacent Crown Lands are designated Parks and Recreation in the Salt Spring Island Official Community Plan (OCP) (Bylaw No.345 1998).

Objectives for this designation are:

> **B.7.1.1.1** To preserve and protect the natural environment of the island's public recreational lands and park land while providing for local and regional recreation needs.
>
> **B.7.1.1.2** To encourage the management or disposition of the Island's Crown Land in a manner consistent with broader policies of this Plan regarding settlement patterns and the conservation of environmentally sensitive areas. To preserve the recreational and conservation uses of that land.

The OCP contains policies relevant to these areas including policy B.7.2.2.9 which states that the Trust Committee will support certain applications to acquire or hold tenure on Crown Land in the Parks and Recreation designation for passive outdoor recreation and conservation. The policy lists a number of applications it will support including application by the ITF for "a conservation area on the Crown Land parcels on Mount Erskine"

D.4 Zoning, Registered and Unregistered Encumbrances

Lower Mount Erskine Reserve and the adjacent Crown Land parcels are zoned Parks and Recreation 5 (PR5) (Land Use Bylaw No.335 2001). Permitted uses in this zone are passive recreational use, parks and ecological reserves. Permitted buildings are an accessory caretakers dwelling unit. Minimum Lot Area for subdivision is 65 ha.

D.5 Water Management/Licences

There are no streams or lakes on the Reserve or the Mount Erskine Crown land parcels.

D.6 Surrounding Land Uses

Surrounding lands are either unoccupied or are low density residential. A cleared BC Hydro power-line right of way runs close to the southeast corner of the portion of Lot 27 held by the Crown.

E. NATURAL RESOURCE MANAGEMENT ISSUES

The purpose of the Mount Erskine Reserve is to protect the natural values of the site in perpetuity. Generally there is no need to actively manage those values through any sort of intervention except possibly in the case of invasive species.

The main issue which may require active management is public access. The trails located on the Lower Mount Erskine Reserve are frequently used to access the adjacent Crown lands and the summit of Mount Erskine as well as on their own for recreational use of the Reserve. The summit of Mt. Erskine is situated on private land and is a popular destination for hikers. In recent years there has been an increase in use of the trails on the Reserve and the Crown land area by mountain bikers. Management of the Reserve needs to consider these uses and their impacts. Recreation pressure on these areas will likely increase with the increase of population on, and visitors to, the island.

The Islands Trust Fund has a limited budget for property management and is dependent on local organisations and volunteers for assistance. Any plans to implement management strategies in this document should include an assessment of available resources.

A number of natural resource management issues have been identified for Lower Mount Erskine Reserve. These include:

- steep slopes;
- trail maintenance;
- recreation impacts on sensitive vegetation communities;
- fire risk;
- invasive plant species;
- falling trees;
- the number of access points;
- trail establishment;
- the relationship to private land on Lot 29, the Mount Erskine summit; and
- the relationship to the adjacent Crown land parcels.

Steep Slopes
Trails on both the Reserve and the Mount Erskine Crown lands pass next to or travel over steep slopes .

Trail Maintenance
Some erosion of trail surfaces is noticeable at a number of locations in the Reserve. Trails intercept and channel surface and subsurface water flows during winter rains. Where trails head straight up and down slope, water flows can gain considerable velocity and wash out the fine particles from the soil in the trail bed. If fines are removed, the coarse fragments present in the soil begin to migrate downslope, making the trail surface unstable. Ditching or water bars may be necessary in some sections of trail. Trail work may also be required where seepage areas create muddy conditions leading to trail widening as recreational users attempt to avoid the problem.

Recreational Impacts
The trails on the Reserve and the Mount Erskine Crown lands were designed for hikers. Mountain bikers are now using the trails, leading to increased erosion from braking on steep downhill sections of trail and the widening or twinning of trails as they seek to avoid large rocks. Shortcutting by hikers and mountain

bikers has been occurring on some winding sections of trail. As recreational use of the properties increase, view points may gradually lose their vegetation cover from trampling.

Fire Risk
There is a relatively high risk of fire on the Reserve and the Mount Erskine Crown lands during the summer drought. This risk is particularly acute in vegetation associated with dry rock outcrops. The fire risk in densely stocked Douglas-fir stands will diminish over time as the forest stand opens up and the vertical distance between the ground and tree canopy increases.

Invasive Plant Species
The exotic shrub Scotch broom has become established in some portions of the property, primarily near the start of the Jack Fisher Trail on Collins Road. Scotch broom has the potential to spread rapidly and change both the composition and structure of rock outcrop and open forest vegetation communities. Scotch broom seeds are extremely durable and may persist in the soil for decades. Removal of Scotch broom is most successful when infestation is low. Other exotic plant species, such as holly and pasture grasses, could prove invasive on the Reserve and Mount Erskine Crown lands.

Falling Trees
The high tree density of some forest stands on the property has resulted in considerable tree mortality. Many small diameter dead and dying trees are still standing.

Access Points
The main access points for the Lower Mount Erskine Reserve are the two trail heads on Collins Road. Each of these has a sign, installed by the Salt Spring Island Trail and Nature Club, identifying the trail. One of these trail heads is located on the private land to the north of the Reserve. Recreationalists also access the Reserve via a route along the power lines, located southwest of the Reserve, and through the Crown lands. This later route is evidently popular with mountain bikers (Eric Ruffa, pers. com.).

Trail Establishment
A number of infrequently used trails and “short cuts” have been established on the Reserve. Although the main trail is clearly marked, some visitors to the area are establishing their own routes. This has the potential to increase the amount of area impacted by recreational uses.

Relationship to Private and Crown Land
The trails on the Lower Mount Erskine Reserve and the Mount Erskine Crown lands are used to access the Mount Erskine Summit, which is located on private land.

The more northerly access point on Collins Road and a portion of a trail that connects with trails on the Reserve are located on private land.

F. OBJECTIVES AND MANAGEMENT STRATEGIES

F.1 Objectives

The management objectives for Lower Mount Erkine Reserve are to:

- protect the natural features and vegetation of the Reserve;
- provide a link in an important recreational trail network;
- discourage uses that are incompatible with the goals of the reserve;
- allow natural biological processes to continue; and
- ensure recreational uses are consistent with protection of natural values of the site

F.2 Management Strategies

To achieve these objectives, as resources are available, the following strategies **may be** undertaken at the discretion of the Board, management group, and/or conservation partners:

- monitor trail conditions and implement a trail maintenance program;
- develop a strategy to remove invasive/exotic plant species;
- monitor the property to identify any unauthorized use that is inconsistent with management objectives and develop and strategy to limit this type of use,
- monitor the property to identify encroachment or impacts from surrounding lands;
- erect and maintain signage encouraging visitors to stay on established trails;
- erect and maintain signage informing visitors of need to protect natural values of the site and the danger that fire poses to the area; and,
- review management and maintenance needs regularly.

G. MANAGEMENT AGREEMENT

The Trust Fund Board has contracted with a management group approved by the Board, to enter and be on, and manage the Reserve for Reserve purposes. This plan will form a Schedule to the Agreement..

H. BIBLIOGRAPHY

Adams, L. 1990. Salt Spring Island undesignated Crown lands: a resource inventory. Prepared for the Crown Lands Use Coalition, Salt Spring Island, B.C.

Agee, J. K. 1990. The historical role of fire in Pacific Northwest forests. Pages 25-38 *In* J. D. Walstad, S. R. Radosevich and D. V. Sandberg (eds.). *Natural and prescribed fire in Pacific Northwest forests.* Oregon State University Press, Corvallis.

Benn, D.R. 1978. Islands Trust - Outdoor recreation features mapping. Prepared for the Islands Trust, B.C. Ministry of Municipal Affairs. Victoria, B.C.

Benn, D.R. 1975. Natural areas inventory: islands of the Strait of Georgia, Howe Sound, and Haro Strait, British Columbia. Nature Conservancy of Canada. Islands Trust.

Block, J. and V. Hignett. 1982. Outdoor recreation classification for British Columbia. APD Technical Paper 8. Assessment and Planning Division. B.C. Ministry of Environment. Victoria, B.C.

Blom, G. 1989. Letter to the Honourable T. Huberts regarding the forestry potential of Lot 28 and 29, North Salt Spring Island, Cowichan Land District.

Capital Regional District Parks. 1990. An assessment of Crown lands on Salt Spring Island for Regional Park Purposes.

Chiltern, R. 1975. Climatology of the Gulf Islands Trust area. Appendix D *In* D.R. Benn. Natural areas inventory: islands of the Strait of Georgia, Howe Sound, and Haro Strait, British Columbia. Nature Conservancy of Canada. Islands Trust.

Clement, C.J. and J.W. van Barneveld. 1985. Vegetation of Salt Spring Island. A report and 1:20,000 scale map. Survey and Resource Mapping Branch. Ministry of Environment, Victoria.

Crown Use Land Coalition. 1992. Salt Spring Island Crown lands: for private profit or public good. Information sheet.

Eis, S. and D. Craigdallie. 1980. Gulf Islands of British Columbia: a landscape analysis. Report BC-X-216. Environment Canada. Canadian Forestry Service. Pacific Forest Research Centre. Victoria, B.C.

Flook, Fiona. Member of the Salt Spring Trail and Nature Club. Personal communication. October, 1993.

Giasson, Moss. 2003. Nature Conservancy of Canada. *Monitoring Report for the Mount Erskine Property, Salt Spring Island*

Islands Trust Fund Board. 1992. The Islands Trust Fund Plan. Islands Trust. Ministry of Municipal Affairs, Recreation and Housing. Victoria, B.C.

Islands Trust Fund Board. 2002. Islands Trust Fund Plan 2003-2007. Islands Trust. Ministry of Community, Aboriginal and Women's Services.

Kerr, D.P. 1951. The summer-dry climate of Georgia Basin, British Columbia. *Transactions of the Royal Canadian Institute* 29:23-31.

Klinka, K., F.C. Nuszdorfer, and L. Skoda. 1979. Biogeoclimatic units of central and southern Vancouver Island. B.C. Ministry of Forests. Victoria, B.C.

Luckhurst, A.J. and D. Blower. 1973. Land suitability for wildlife. Pages 121-157 *In* C.V. Stanley Jones and W.A. Benson (Eds.). An inventory of land resources and resource potentials in the Capital Regional District. Report prepared by BC Land Inventory; Pacific Forestry Research Centre, Canadian Forestry Service; and Soil Survey Section, Canada Department of Agriculture.

Meidinger, D. and J. Pojar. 1991. Ecosystems of British Columbia. Special Report Series 6. Research Branch. B.C. Ministry of Forests. Victoria, B.C.

van Vliet, L.P.J., and Kenney, E.A., A.J. Green. 1987. Soils of the Gulf Islands of British Columbia: Volume 4. Soils of Salt Spring Island. Report No. 43. British Columbia Soil Survey. Research Branch. Agriculture Canada. Ottawa, Ontario.

Ruffa, Eric. Salt Spring Island Resident and Recreationalist. Personal Communication. May 2004

Salt Spring Island Trust Committee (SSITC). 1991. Salt Spring Island Official Community Plan Bylaw No. 200.

SSITC. 1991. Salt Spring Island Zoning Bylaw No. 123.

SSITC. 1991. Salt Spring Island Subdivision Bylaw No. 207.

SSITC. 2001. Salt Spring Island Land Use Bylaw No. 335.

SSITC. 1998 .Salt Spring Island Official Community Plan Bylaw No. 345.