ENVIRONMENTALLY IMPORTANT SITES AND STREAMS ON THE Sunshine COAST

Funded by:

Land for Nature

Federation of BC Naturalists

Ministry of Environment, Lands and Parks

Urban Salmon Habitat Program

Action 21
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Land for Nature

An Initiative By The Federation of British Columbia Naturalists

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an initiative by
The Federation of B.C. Naturalists

The Federation of B.C. Naturalists is a non-profit, umbrella organization of the many local naturalists clubs throughout the province. Its goal is to promote the understanding and enjoyment of nature by education through field trips, lectures, and publications. It is a respected, effective voice on issues of conservation and preservation in B.C.

Land for Nature was established by the Federation of B.C. Naturalists in 1990 to assist naturalists and other community groups to identify and protect critical habitat increasingly threatened by urban growth and development. Land for Nature, with funding from a variety of government and non-governmental partners, works with local naturalists to conduct habitat inventories, bird surveys, and host workshops and seminars on conservation issues. Both the FBCN and Land for Nature participate in local, regional and provincial land use planning processes, and help to frame public policy.

This binder is part of the Land for Nature project Identification and Mapping of Streams and Environmentally Important Sites on the Sunshine Coast. The binder along with the companion map, Environmentally Important Sites and Streams on the Sunshine Coast, are some of the final products of the Urban Habitat Protection Program that was initiated in 1995 by Andrew Bales, New Product Coordinator of Land for Nature and Bob Phillips, Director of Land for Nature. This project was made possible by our funders and the many volunteers that nominated sites and provided support and technical assistance. Project coordination and management was provided by the contract staff of Land for Nature and Elkhart Bell International (Bob Phillips 604-878-1999).

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Elphinstone Forest

SITE DATA

TRIM Map #: 92G.042  Airphoto #: 30 BCB90014 No.236/7  Electoral Area: D

Site location and access: This large area of forest is north of and above the residential areas of Roberts Creek and below the clear-cut areas higher on the slope. It extends almost the full length of Roberts Creek (Electoral Area D), from Wilson Creek in the west to Clough Creek in the east, a distance of about 8 km. There are several road access points to the area. Two of the most used are the Roberts Creek Forest Service Road which joins Hwy. 101 at Cliff Gilker Park, and the top of Field Road above Wilson Creek Mall.

OCP Designation: N/A

Site Ownership: Provincial Forest; 140 ha have now been protected under the provincial Protected Areas Strategy.

Current Use:
- Forestry (logging and silviculture)
- Ministry of Forests research in Roberts Creek study forest.
- Non-commercial mushroom foraging, especially for chanterelles
- Extensive commercial pine mushroom harvesting
- Recreation (hiking, mountain-biking, etc.); a well marked and maintained trail system is emerging from volunteer efforts
- Protected areas (140 ha)

Adjacent Use: Forestry and residential.

SITE DESCRIPTION

Size (approx.): 1500 ha  Elevation (range): 150 to 700 m.  Biogeoclimatic Zone(s): CWH-xm1, CWH-dm, CWH-vm2

Habitat Type: Maturing low-elevation coniferous forest with old-growth attributes, cascading streams.

Wildlife Habitat Values:
This site has some old-growth characteristic forest that has never been clear-cut, so it retains a diversity of tree species and ages, much large woody debris and many cavity trees.

Species Known to Occur:
Amphibians: The Tailed Frog (a Provincially blue-listed species) has been found in each creek that has been investigated including Roberts, Clack, Flume, East Wilson and Gough Creeks. Other amphibians that have been identified in this site: Ensatina Salamander, Red-legged Frog, Tailed Frog, Rough-skinned Newt, Northwest Salamander, Pacific Treefrog, Long-toed Salamander and Western Red-backed Salamander.
Fish: Resident cutthroat trout and dolly varden occur in most of the larger creeks.
Birds: This area supports many of the species associated with late successional second growth forests on the Sunshine Coast (see list in Appendix 2). It is particularly important for the Red-breasted Sapsucker, Hammond’s Flycatcher, Pacific Slope Flycatcher, Red-breasted Nuthatch and Brown Creeper.
Small mammals: In roughly descending order of abundance: masked shrew, vagrant shrew, red-backed vole, deer mouse, long-tailed vole (from Linda Dupuis’s work in the MoF’s Research Forest).

Associated Creeks and Lakes:
Robinson Creek: Cutthroat trout are present.
Flume Creek: The Sechelt Fish & Game Club did some work on the creek in the late 1970s and early 80s, however impassable falls near the tidal zone continue to prevent fish passage. The creek is subject to low summer flows, with only a few pools remaining during dry periods. Flume Creek has been heavily impacted by urban development and road construction, and there is active logging in the watershed. Species present are coho, chum and cutthroat trout.
Malcolm Creek: The lower section of the creek was channelized in 1950. It now appears to be good fish habitat. The creek has good flows - it does not dry in summer - and is excellent spawning and rearing habitat. There is spawning to the culvert at 0.5km from the mouth. Species present are resident cutthroat trout. DFO inventory and assessment is to be carried out in 1997.
Stevens Creek: Coho, chum, steelhead, and cutthroat spawn in the bottom 100-150 m (to Lower Road). DFO inventory and assessment is to be carried out in 1997.

Sunshine Coast Inventory of Environmentally Important Sites
Elphinstone Forest

Other creeks associated with this extensive site include East Wilson Creek, Gough Creek, Clack Creek, Roberts Creek (see site #37), Roberts Creek East Branch, East Malcolm Creek, Clough Creek and at least one unnamed creek.

Vegetation: Entire site - mushroom list from Paul Kroeger.

General Site Description

The Elphinstone Forest is most representative of the ecology of the Sunshine Coast. Gentle slopes, typically around 10% to 15%, a south-west aspect, low to middle elevations and well to moderately drained soils, combine here to grow almost uninterrupted coniferous forest.

What is exceptional about the Elphinstone slope is that a serendipitous combination of fire and logging history has left intact a large area of natural low-elevation forest. In the 1860’s, before logging had begun, a catastrophic fire burned almost the entire slope, leaving alive only large fire-resistant Douglas-fir. Some of these fire veterans were later felled by hand-loggers, especially lower on the slope, but most live on, centuries old, and in places in dense concentrations. At several different times through the twentieth century the area has been selectively logged for the old-growth red cedar that was killed in the fire. This was done with relatively little disturbance because the wood was cut to shake-block size on site and taken out by flume or on minimal roads. The regenerating fir and cedar were not quite large enough to be cut in early power-logging days, especially as there was still older growth available. So it is only recently that clear-cut logging has started in this area.

The forest that has regenerated naturally after the fire is dominated by Douglas fir well over 100 years old, with many trees on better sites now approaching a metre in diameter. Red cedar and western hemlock are also major species, and unlike Douglas fir, are everywhere present as seedlings and juveniles under the forest canopy. Old-growth hemlock that survived the fire are widely scattered but much less common than old-growth Douglas fir. Old-growth western hemlock is very rare, so far reported from just two small areas that apparently were not burned. Less common tree species include grand fir and western white pine that grow as widely scattered individuals now generally of canopy height, and western yew, always growing in the understory. A few large rock outcrops support shore pine but no arbutus. Some wetter areas have Sitka spruce, sometimes in small stands. One site with old growth Sitka spruce is known.

Under the trees, the shrub and herb layers are generally sparse and monotonous. In the dry summer the biodiversity on the forest floor is not apparent, but in autumn mushrooms appear in great variety. Many of these fungi are mycorrhizal, that is, they live in a close, mutually beneficial partnership with the trees, trading water and minerals collected from the soil for sugars created in the canopy above. The species of fungi clearly differ from place to place through the forest. The relationships between these complex fungal populations and stand species and age composition are poorly understood. Jim Pojar, a senior researcher for the B.C. Forest Service has written, "Fungi play fundamental roles in nutrient and energy dynamics, and our lack of knowledge about them is appalling." Despite their importance ecologically and the irreplaceable service they provide to our silvicultural efforts, our continued survival is generally taken for granted.

The nominees of the Elphinstone Forest have tried to bring forward the idea that mushrooms too are an element of biodiversity and may need to be protected. Given the state of our ignorance only the preservation of intact forest ecosystems can ensure that this complexity is not diminished. The Elphinstone Forest is now a rare forest type. Of all the forest in the CWB-Hdm biogeoclimatic subzone, only 9% is as old or older. Paul Kroeger, considered one of the most knowledgeable field mycologists in western Canada, has written that the Elphinstone forest appears to be especially diverse in mycota, compared with other south coast sites. His discovery of a rare species, now believed to be Tricholoma alpina, in the Roberts Creek Research Forest, generated controversy but did not prevent the destruction in 1996 of most of its known habitat in North America that is, the clear-cut block of the research forest. Arguments about its rarity may continue but it is worth noting that it wasn’t found in the autumn of 1995, despite increased interest, but was found again in the Elphinstone Forest in the particularly wet summer of 1997.

This forest is habitat for several interesting plants that live without photosynthesis below the soil surface, appearing above only when they flower. These are often described as saprophytic that is, living on dead organic matter, but it is probably more accurate to say that they are parasites on the mycorrhizal relationship of the trees and mushrooms and so will only be found in forest where these relationships are well established. These include the gnome plant (Hemipetes congestum), pinesap (Hypopitys monotropa), candystick (Alotropa virga), Indian pipe (Monotropa uniflora), and western coralroot (Corallorhiza maculata).

Three small, special sites, totaling 140 ha have been selected for protection within the original 1,500 ha Elphinstone Forest Protected Area Strategy proposal. One site is near the upper elevation limit and contains 2 or 3 ha of wetter ground on which the old-growth hemlock has survived, as well as impressive old-growth fir and cedar.

A second area at mid-elevation contains a dense concentration of Douglas fir veterans. In a single square 1 ha block, 50 old-growth trees have been counted. This veteran stand is only one of many identified by the nominees. This area also includes the largest veteran so far recorded from the slope, a giant 2.3 m in diameter in the ravine of Roberts Creek.

A third area, near the top of Crow Road, harbours about 3 ha of old growth forest. A linear wet area with some surface water flow supports at least 15 Sitka spruce, some over a metre in diameter, and many more red cedar, both
Elphinstone Forest

The present intention of the Ministry of Forests is to log the majority of this area. A Local Resource Use Plan (LRUP) for Mt. Elphinstone (8400 ha), involving the public and encompassing the nominated site, was underway for six years with the intention of developing a higher level plan for the area that would recognize all relevant values. However, the process was terminated by the Ministry of Forests in February 1997. The Landscape Unit Plan for Mt. Elphinstone is instead being done internally by the Ministry of Forests in conjunction with that for the Chapman (sites #4, 10, 20) and Gray Creeks Watershed (#44) and Mt. Richardson (21). The biodiversity emphasis option was tentatively set at 'intermediate', but it is possible that this will drop to 'low'. At this level, 9% of the harvesting land base will be designated as old growth retention areas, though not all of this must consist of old growth trees. Old growth retention in intermediate areas is 13%. Visual Quality Objectives for the area will be approved soon.

A public campaign, supported by the World Wildlife Fund and the BC Environmental Network, is underway to educate the public about the importance of the area for its mushroom diversity and as a representative of an under-protected forest type, and to rally support for full protection. Much of the area could be protected as a Forest Ecosystem Network. The biodiversity emphasis for the whole landscape unit, including as it does this site, two major parks (the Tetrahedron and Mt. Richardson) and Chapman Creek (major salmon stream and the primary water supply for the Sunshine Coast), should be set at “high” rather than intermediate or low. Biodiversity values could also be protected by designating the site as environmentally sensitive under the Forest Practices Code, thereby placing the area under joint management of the Ministry of Forests and the Ministry of the Environment, Lands and Parks. Pockets of old-growth, as identified in the Elphinstone Forest Plan Committee’s response to the MoF’s draft Chapman Landscape Unit Plan and draft Mt. Elphinstone Forest Management Plan, may qualify for low elevation old growth retention.

Research paper on amphibians and small mammals: The Response of Amphibians to Various Silvicultural Treatments in the Roberts Creek Experimental Forest Study Forest, by Linda Dupuis, MSc., unpublished, presented to the Ministry of Forests.

- Terry Taylor moss & lichen list
- Mt. Elphinstone LRUP proceedings
- Elphinstone Forest Plan Committee
- Mt. Elphinstone Forest Watch
- Mt. Elphinstone Research Forest (MoF)
- Chapman Landscape Unit Plan (draft); Mt. Elphinstone Management Plan (draft); Small Business Forest Enterprise Program Five Year Plan (draft) - all MoF (contact: Brian Smart, Planner)
- Rick O’Neill (re: amphibians)
- DFO FISS reports available on Robinson (Watershed Code 9001177), Malcolm (9001179), Roberts (9001182), Flume (9001189) and Wilson (9001199) Creeks
VEGETATION INVENTORY

Mushroom species identified from the Elphystone Forest (1983 to 1996) by Paul Kroeger; 165 species.

Agaricus semotus, Agaricus sylvaticus, *Albatrellus elliisii, Aleuria aurantia, Amaranita aprica, *Amaranta constricta, 
Amaranta gemmata, Amarantha porphyria, Amarantha sivicola, Amarantha smithiana, Armillaria mellea, Beuvaria bassiana, 
Bisporus citrina, Boletopsis leucomeris, Boletus edulis, Boletus mirabilis, Boletus Piperatus, Calocera comea, 
Calocypha fulgens, Cantharellus cibarius, Cantharellus infundibuliformis, Chroogomphus tomentosus, Clavaria 
purpurea, Clavula cristata, Ciliocybe clavipes, Ciliocybe ditalata, Colybia confundens, Colybia dryophila, Coriolus 
tomentosus, Coriolus versicolor, Cortinarius aminus, Cortinarius cinnamomeus, Cortinarius croceofoliis, Cortinarius 
glaucopus, Cortinarius semisanguineus, Cortinarius traganus, Cortinarius vandusenensis, Cortinarius vibritilis, 
Crepidotus appianatus, Crepedotus mollis, Crucibulum laeve, Cudonia circinata, Cudonia monticola, Cudoniella clavus, 
Entoloma lividum, Entoloma sinuatum, Entoloma vermiculata, *Fomes fomentarius, *Fomitopsis mnicola, *Fuligo septica, 
Ganoderma applanatum, Gaulteria monticola, Gomphidius subrosaeus, *Gomphus clavatus, Guepinioptis alpinus, 
Gymnopilus penetrans, *Gymnopilus punctifolius, Helvelia elastica, Helvelia macropus, Helvelia macropus, Hymellum 
Kuehneromyces mutabilis, Laccaria amethysteo-occidentalis, Laccaria laccata, Lactarius aff. pallidus, Lactarius 
deliciosus, Lactarius kauffmamii, Lactarius luculentes, Lactarius pseudomucidus, Lactarius rubifactus, Lactarius 
trivialis, Laetiporus sulphureus, Lepiota clypeolaria, Lepiota clypeolaroides, Lycogala epidendron, Lycoperdon 
Pannellus stipticus, *Paxillus atromontanus, Phaeolus schweinitzii, Phlebia radiata, Pholiota scamba, Phylloporus 
rhodoxanthus, Pleurocybella porrigens, Pleurotus dryinus, Pluteus atromarginata, Pluteus cervinus, Polyporus badius, 
Polyergus picipes, *Pseudoamallaria ectypoides, *Pseudohydnum galinosum, Psilocybe crobula, Ramaria 
cystidiophora var.citrinella, Ramaria formosa, Ramaria formosa, Ramaria stricta, Rozites ceperatora, Russula albignora, 
Russula brevipes var. acior, Russula cascadiensis, Russula claroflava, Russula emetica, Russula laurocerasi, 
Russula nigricans, Russula rosea, Russula xerampina, *Sarcosphaera crassa, *Sparassis crispa, Spathularia flavida, 
Suillus brevipes, Suillus laks, Suillus subovulaceus, *Tarzetta cupularis, *Tricholoma albolunnum, *Tricholoma apium, 
*Tricholoma virgatum, *Tricholomopsis decorata, *Truncocoliuma citrina, Tyromyces albellus, *Xeromphalina campanella, 
*Xeromphalina fulvipes, *Xylaria hypoxylon

* Species listed in United States Standards and Guidelines for Management of Habitat for Late Successional and Old-
growth Forest Related Species Within the Range of the Northern Spotted Owl.