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ECOLOGICAL RESERVES UNIT
1019 WHARF ST.
VICTORIA, B.C. V8W 2Y9

Lasqueti Island

Ref. No.:

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ECOLOGICAL RESERVES COLLECTION
GOVERNMENT OF BRITISH COLUMBIA
VICTORIA, B.C.
V8V 1X4

4. Flora and Vegetation of Lasqueti Island Ecologica

Six vegetation types were described and a vegetation map compiled following a summer survey including 82 releves. Parkland Communities are dominated essentially by varying combinations of Pseudotsuga menziesii, Arbutus menziesii, and Pinus contorta parkland and coastal occurrence Juniperus scopulorum and Opuntia fragilis, are prominent along rocky shores.

Species list of approximately 250 vascular plants, bryophytes and lichens was compiled and annotated for abundance, habitat preference and phenology of flowering and fruiting.

Russ George, David Clark

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Supervisor: Marcus Bell

University of Victoria

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Lasqueti Island Ecological Reserve

Lasqueti Island is located in the Gulf of Georgia between the southwest shore of Texada Island and Parksville on Vancouver Island. The Ecological Reserve borders the shore on the southwest side of Lasqueti about midway on the island. It encompasses all of land section #17 and a small part of section #24 (Lasqueti Island-Nanaimo District). The reserve was designated in May 1971 for the purpose of preserving "coastal cactus (*Opuntia fragilis*) in a parkland vegetation."

This paper presents the results of a preliminary vegetation survey conducted during the summer of 1975.

The Lasqueti Reserve is situated on a southwest-facing slope leading from a 400 ft. elevation ridge system to the sea. The topography is very rugged, rocky, and deeply dissected, with valleys running generally south and southeast. This rugged nature provides for a considerable range of habitats and a correspondingly rather large species composition. In addition to the natural environmental factors affecting the vegetation, the Reserve and surrounding area have been intensively logged and are subject to heavy grazing and browsing by large feral sheep and goat populations.¹

Recreational use of the reserve area is minimal with only a few local hunters appearing occasionally to hunt sheep, goats, or deer.

- Aims and Methods -

The aims of this study were to provide a preliminary report on the vegetation of the reserve including descriptions of vegetation

¹ More on logging and grazing in the appendix.

patterns (communities) and a vegetation map. Floristic analysis followed the Braun-Blanquet or Relevé method (Mueller-Dombois and Ellenberg 1975) with the intent to provide as detailed as possible floristic descriptions of the vegetation communities. The tablework involved in the synthesis of the data collected was greatly assisted through the use of a computer program for table sorting (A. Ceska and H. Roemer 1974).

As much as possible, community descriptions are dictated by the floristic components which appeared in the computer-generated table. Our method for describing communities has been a balance between floristic characterisation from the table work allied with first hand consideration of dominant vegetation and pertinent environmental information. The communities are named first with respect to an important floristic character and secondly with note of an important environmental factor.

- Results -

Computer synthesis of floristic data revealed five diagnostic or characteristic species groups. These are as follows:

1. The Aira spp. group consisting of Aira praecox, Bromus mollis, Aira caryophyllaea, and Cerastium arvense.
2. The Tiarella/Lactuca group consisting of Lactuca muralis, Tiarella trifoliata, and Polystichum munitum.
3. The Alnus group consisting of Alnus rubra, Thuja plicata, Acer macrophyllum, and Galium triflorum.
4. The Cicuta-Carex group consisting of Cicuta douglasii, several Carex spp. and Spirea douglasii.
5. The Grindelia group consisting of Grindelia integrifolia, Campanula scouleri, Sonchus asper, and Daucus pusillus.

The presence or absence of these groups relative to blocks and relevés in the tablework results in six floristically described vegetation communities. These communities appear to hold fairly closely to communities one might speculate, from existing literature, for the reserve area they are.

1. Grindelia seacoast cliffsides
2. Aira-Juniper Outcrops and Parklands
3. Tiarella/Lactuca Douglas Fir Parkland
4. Alnus-Tiarella/Lactuca Valley Bottomlands
5. Cicuta/Carex Marshes
6. Pinus/Cladonia Hilltops

It is important to note here that the entire reserve area falls into a broad Coastal Douglas Fir Association description (Bell-Forestry Handbook). With the exception of the relatively small areas included in the Cliffsides, Marshlands and Alder Valley bottomlands the reserve and surrounding lands are dominated by a Douglas Fir-Arbutus Parkland Forest.

- Community Descriptions -

The Grindelia Seacoast Cliffsides Community

This community is delineated floristically in the table by the presence of the Grindelia species group alone. A large portion of the shoreline of the reserve is occupied by steep cliffs from 20-100 feet in height. Crevices and ledges on these cliffs provide habitat for a variety of plants. Many are common to other parts of the reserve, but some were found only on these cliffside sites. The environmental conditions on these cliffsides are quite varied with many small micro-site differences. The close proximity to the sea results in orographic

temperature influence and battering by the strong winds and spray common to exposed seacoasts. A more locally interesting condition relative to the cliffsides is their inaccessibility with respect to grazing animals.

- The Aira Outcrops and Juniper Parklands -

This community is floristically delineated by the Aira species group and additionally by presence of Juniperus scopulorum in the tree layer. Adding Juniper to the characterizing species for this vegetation zone it is possible to floristically describe this rather obvious zone of Juniper parklands. This community, within, the Douglas fir Parkland forest occurs only on south to southwest facing slopes and is restricted to a belt adjacent to the sea. Within this zone, on the rocky overcrop sites nearest the shoreline, occurs the rare coastal cactus Opuntia fragilis. These coastal outcrops commonly contain species of the Grindelia group, making it difficult to draw clear floristic boundaries between the two communities.

- The Tiarella/Lactuca Douglas Fir Parklands -

This forest community encompasses the greatest portion of the reserve and the surrounding areas. It occupies both valley and slope locations throughout, with best development in the mid-slope positions. It is bordered nearest the coast by the Aira Juniper Parklands and on ridges and hilltops by a Pinus-Cladonia association. It is floristically delineated by presence of the Tiarella/Lactuca species group within the dominant Douglas Fir forest cover.

It is within this community that the bulk of past logging devastation is confined. The extensive disturbance from logging has

restricted, rather severely, our ability to distinguish possible communities or associations. With this regard further sampling of these regions might provide more reliable and detailed descriptions. Referring to the literature (Bell-Forestry Handbook) on the Coastal Douglas Fir Associations, an association very similar to this is listed along with several other associations which occur on the reserve in small amounts. These additional "associations", from "Bell's" descriptions, which occur in discernible amounts but not described in this report are a Salal-Lichen Association on very dry south-facing ridges in or near a Pinus Hilltop community, a Salal Association in lower valley sites previously associated with Douglas Fir (since logged out), and a moss association on the north boundary slopes dominated by Douglas Fir but with some Grand Fir.

- The Alnus Valley Bottomlands -

This "community" is floristically delineated by the presence of the Tiarella/Lactuca group and the Alnus group with the absence of the other species groups. These alder stands approximately 30-50 feet in height are restricted to shaded wet valley bottomlands. The occurrence of alder stands on the reserve is slight but extensive stands occur immediately off the reserve to the north and east. This community conforms to an association of the Coastal Douglas Fir Zone (Bell-Forestry Handbook for B. C.).

Past logging has selectively removed most of the conifers from these stands with the result of having less diversity in the tree layer than might be expected.

- The Cicuta/Carex Marshes -

In several locations on the reserve there are rather noteworthy

Appendix I

- Appendix to Logging and Grazing -

Logging of the reserve area was conducted during the early 1960's and was confined mainly to the accessible valley bottoms and nearby slopes. Douglas fir made up the vast bulk of the merchantable timber on the reserve and was apparently selectively harvested. The quality of wood was obviously not high as the loggers left much "slash" including many large trees which were cut and left to rot away. Many local residents expressed considerable ill favour towards the logger's "cut and run" practices. The Forest Service has classified the reserve area as N.S.R. (not satisfactory regenerated) on forest cover maps.

Rather large "shoat" (feral goats and sheep) populations on Lasqueti range over much of the island. The relatively thinly populated southwestern side is strongly affected. Grazing and browsing on the reserve is heavy to extreme with sheep more abundant than goats. Few days in the field were passed without sighting one or more flocks of sheep. Goats were seen infrequently but were noted to be considerably more wary than the sheep and also kept to the steeper, rockier, less accessible parts of the reserve. The effect of grazing and browsing, while not specifically studied, was always apparent. Except in the most inaccessible locations (i.e., rock faces) few shrubs or small trees were found. Those seen were nearly always suffering the effects of severe browsing.

As part of this general investigation a recommendation to fence a portion of the reserve was made and a likely route for that fence proposed and scouted.