

Pebble Beach Reserve Management Plan



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Prepared for:

Galiano Conservancy Association
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1.1 Galiano Conservancy Association Purpose

The Galiano Conservancy Association was formed in 1989 to provide a strong voice and a focussed organization for those working to protect and preserve the human and natural environment of Galiano Island. The purposes of the organization, as stated in the Galiano Conservancy Association's constitution, are:

- To preserve, protect and enhance the quality of the human and natural environment of the area;
- To conduct research programs with local citizens and qualified persons on important issues in the fields of development and conservation;
- To facilitate public education and participation in resource and land use management, including ecologically sound forestry practices;
- To facilitate forestry practices that are directed towards the preservation, protection and enhancement of the human and natural environment;
- To promote models of compatibility between land use and land characteristics, giving full and serious consideration to the biologic and esthetic values of the land;
- To promote the establishment of wilderness and other natural habitat preserves for the benefit of this and future generations;
- To raise money, acquire funds and other assistance, and to own, acquire, and take by purchase, donation, devise or otherwise, land or personal property; and expend, sell, exchange, lease, let, improve or develop same for the purposes of the society.

1.2 Plan Purpose

This management plan is a statement of how the Pebble Beach Reserve will be managed, used, and preserved in the future. It states in a broad but comprehensive manner, management goals and objectives, and the strategies for achieving them. The plan outlines:

The value of the Pebble Beach Reserve to the Galiano community along with its location and legal description.

The importance of protecting the Reserve, along with the management goals and objectives that must be accomplished.

The history of human use of the area.

The natural history and ecological inventories of the Reserve.

How the ecology of the Reserve will be protected and monitored.

First Nations involvement and how specific cultural values will be protected.

Policies and guidelines regarding education, research, and restoration within the Reserve, along with interpretive and educational programs that will be available for the community, visitors, and specific educational institutions.

The types of recreational use permitted in the Reserve and how it will be managed.

What facilities will be provided and how they will be maintained.

Recommendations for the management authority of the Reserve, as well as legal issues regarding insurance coverage, land-use designations, and road permits.

1.3 Planning Process

The Management Plan was developed through an open planning process with the public and with input from a number of interest groups and individuals. The process focussed discussions and analyses on the protection of the natural and cultural attributes of the Reserve and the appropriateness of various educational and recreational uses. A high level of public participation was achieved through open houses, articles in the local

newspaper, personal communications, handouts, public mailings and comment forms.

The Nature Conservancy of Canada, the Islands Trust Fund Board, and the Ministry of Environment, Lands and Parks must approve the Management Plan before it is officially adopted. It has been drafted in accordance with the policies of these organizations and with the legal obligations placed on the land.

1.4 General Description

The Pebble Beach Reserve is teeming with life. One only needs to walk down either of the two trails leading to the Reserve's enchanting shoreline to witness this fact. The 950 meter shoreline extends from a few hundred meters east of Pebble Beach to Cable Bay, offering majestic views of soaring eagles, the Strait of Georgia, and the Coastal Mountain Range. Looking across the strait to the smog and bright lights of Vancouver, one becomes even more appreciative of the raw beauty and tranquility of the Pebble Beach Reserve.

Two streams cross the Reserve, one flowing north and the other flowing south. Beaver Creek¹ headwaters in an extensive wetland lying on private land bordering the Reserve. It then meanders across the corner of Crown Lot 60 through deep forest with fern-hung banks into the "modified" landscape of Lot 63, which the beavers are modifying even further, and finally gurgles over sandstone banks into the strait at Cable Bay. Greig Creek is born from the once-drained Laughlin Lake, which is also located on private property bordering the Reserve. It carves its way through Lot 66, winding around majestic firs that have managed to escape the harvest, until it passes under Porlier Pass Road and out into Retreat Cove.

The two trails leading down to the shoreline are very different in their scenery and character. The trail that leads to Cable Bay is an old logging road lined by rustling Scotch broom, young Douglas-fir and Western red cedar trees near the access point. Further down this trail, salmonberry and blackberry bushes take the place of the broom and provide excellent feeding sites for a variety of birds. Beaver Creek crosses the Cable Bay trail about two thirds of the way down, just below a string of beaver ponds.

The trail that guides hikers down to Pebble Beach provides a completely different experience. It is very narrow and corkscrews its way through a dimly lit mature forest. Douglas-fir, Grand fir, Western Red cedar and Western hemlock make up the forest canopy, while huckleberry, salal, Indian pipe, and a great variety of mosses provide ground cover. This is a healthy ecosystem. Deer, squirrels, woodpeckers, flickers, robins and a myriad of other birds and wildlife can be seen along the trail.

The Pebble Beach Reserve is a very diverse and special place, preserving the land and its precious life while offering its visitors a serene and spiritual experience.

1.5 Value to the Community

How does one measure the value of something natural? Can a price tag be placed on living, breathing organisms? The fact is that the trees, plants, birds, insects, animals, fungi, quietness, and good air, traditionally have little monetary worth, possessing instead a value that simply cannot be measured and that is perhaps infinite. They provide an increasingly uncommon experience for human observers. Allowing these qualities to survive and flourish in their natural state is of the utmost importance.

In addition to its intrinsic value, the Pebble Beach Reserve offers the community of Galiano Island a wide variety of opportunities and benefits. There is great potential for local educational activities to take place in the Reserve. The rare mature Coastal Douglas-fir forest is a perfect example of a living classroom, providing an unparalleled forum for nature study and appreciation. Similarly, the harvested portions of District Lots 63 and 66 will provide insight into the effects of forest practices on the Island, and how the environment responds to such disturbances.

At this time, the most recognized benefits to the community are seen through the recreational and spiritual values inherent in the Pebble Beach Reserve. The residents of Galiano Island have traditionally used this area for recreation and relaxation purposes. The island's inhabitants have enjoyed the natural beauty of the Pebble Beach Reserve for thousands of years, and will continue to do so in the future.

1.6 Location

The Pebble Beach Reserve is located opposite Retreat Cove on the eastern side of Galiano Island. It can be reached via McCoskrie Road, which runs perpendicular to Porlier Pass Road approximately two-thirds of the way or sixteen kilometers (north) up the island from Sturdies Bay. The location of the Reserve can be seen in Figure 1.

1.7 Legal Description

The Pebble Beach Reserve is approximately 129 hectares (322 acres) in size and encompasses District Lots 60, 63 and Lot 1 (plan 18194) of District Lot 66 (Figure 2). The legal status of the Reserve is as follows:

Galiano Island Official Community Plan Land Use Designations (Appendix I:a):
(enacted in 1995 by the Galiano Island Local Trust Committee)

Nature Protection (Sec. II, 7): District Lot 60 and Lot 1 (plan 18194) of District Lot 66

Nature Protection Objective:

To preserve natural values

Nature Protection Policies:

A separate zone for conservation shall be applied to new and existing Nature Protection areas.

Lands covenanted against further development or subdivision shall be identified through appropriate zoning designation.

B.C. Parks shall be requested to continue a public consultative process of developing and periodically reviewing management plans for all Ecological Reserves in the Galiano Island Trust Area.

d) Zoning for Nature Protection areas may permit trails and uses permitted

as specified in the Ecological Reserves Regulations pursuant to the Ecological Reserves Act.

- e) Where Nature Protection areas meet the high tide line, the water and foreshore shall be zoned for protection.*

Forest (Sec. II, 3): District Lot 63

Forest Objectives include:

- to preserve a forest land base,*
- to protect the aesthetic value of forest land,...*
- to protect riparian zones, sensitive ecosystems, watersheds and biodiversity.*

Forest Policies include:

- The protection of biodiversity shall be encouraged through appropriate forestry practices and the protection of riparian zones and other sensitive ecosystems.*
- f) Forest managers are encouraged to:*
 - i) ensure that the rate of extraction of timber does not exceed the rate of growth of the forests, and*
 - ii) use silviculture methods that promote healthy forests and minimize fire hazards.*
- g) Appropriate small-scale forest related activities, such as the sustainable gathering of greenery products, food crops, hiking, bird watching and wildlife viewing, education and value-added industry shall be encouraged.*

2. Charges, Liens, and Interests:

District Lot 60

- Registered owner in fee simple: Her Majesty the Queen in right of the Province of
(Appendix I:b) British Columbia
- Undersurface Rights: Her Majesty the Queen in right of the Province of
(Appendix I:b) British Columbia
- Road Permit: NO. R00540 held by MacMillan Bloedel, for the
(Appendix I:c) purpose of timber access.

District Lot 63

- Registered owner in fee simple: Galiano Conservancy Association
(Appendix I:d)
- Undersurface Rights: Her Majesty the Queen in right of the Province of
(Appendix I:d) British Columbia
- Easements: District Lot 53, District Lot 54, District Lot 59,
(Appendix I:d) District Lot 65, District Lot 69, and District Lot 72
- Statutory Right of Way: BC Tel
(Appendix I:e)
- Covenant: Section 219 of the Land Title Act
(Appendix I:f) Held by the Crown in right of British Columbia and the Islands Trust Fund Board
- Legal Agreement: Between The Nature Conservancy of Canada and
(Appendix I:g) The Galiano Conservancy Association

Lot 1 (plan 18194) District Lot 66

- Registered owner in fee simple: Her Majesty the Queen in right of the Province of
(Appendix I:h) British Columbia
- Undersurface Rights: Walter Weatherby Beall
(Appendix I:h)
- Interest: Ministry of Transportation and Highways holds an
interest in Bell Pit gravel pit

Galiano Island is located in the geographically limited Coastal Douglas-fir Biogeoclimatic Zone. Less than 2.1% of this zone is protected by any legal mechanism and of this, only about 10% are classed as unmodified by humans. The importance of this 322 acre site for preservation can not be overstated. Some of these reasons include:

1. It is high site index forestland, of which an extensive portion (approximately 135 acres) exhibits the increasingly rare old growth forest characteristics of the Coastal Douglas-fir Zone. The remainder is in young plantation (20 to 30 years old), and is an excellent candidate for research into forest restoration.
2. Important streams flow through these properties to both sides of the island from watersheds encompassing the central ridge area of the island. Associated with these streams are wetlands crucial for habitat and groundwater recharge.
3. District Lots 60 and 63 share significant archaeological and burial sites which must be protected.
4. The Pebble Beach Reserve presents unique education, research and ecological monitoring opportunities due to its accessibility and the proximity of young plantation and mature/old growth Douglas-fir forest.
5. This area has a long history of low impact recreational use by the Galiano community. Such use is in keeping with the Pebble Beach Reserve's important spiritual values and extraordinary natural beauty.

Management Goal

To preserve the forest, aquatic, and foreshore ecosystems in perpetuity, while allowing local and regional educational and research use along with the continuation of traditional low impact recreational activities. The Pebble Beach Reserve will be managed in a manner consistent with a Nature Conservancy Area as defined in section 1 of the Park Act (1990): "*...a roadless area, in a park or recreation area, retained in a natural condition for the preservation of its ecological environment and scenic features...*"

Objectives

- To preserve the natural processes and succession of the Coastal Douglas-fir forest, aquatic, foreshore and associated ecosystems within the Pebble Beach Reserve;
- To preserve the cultural, spiritual and wilderness values inherent in the Pebble Beach Reserve;
- To encourage the protection of surrounding aquatic and terrestrial ecosystems which are directly linked to the Pebble Beach Reserve;
- To monitor the natural processes and succession of the Coastal Douglas-fir forest and associated ecosystems within the Pebble Beach Reserve in a manner which does not compromise objectives 1 and 2;
- To provide a variety of ecologically sensitive outdoor educational opportunities for the local community and off-island institutions;
- To provide opportunities for environmental and cultural research in keeping with objectives 1 and 2;
- To facilitate environmental restoration when and where it is required in order to maintain the natural integrity of the ecological systems within the Reserve;
- To allow low impact day-use recreation within the Reserve; and to provide the user with a natural wilderness experience.

3.1 First Nations

Human habitation of Pebble Beach may date back as far as 10,000 years before the present. The area is known to have had at least four distinct occupational periods, including an historic or post European contact occupation (19th and 20th centuries), a "Developed Coast Salish" occupation (250 - 1,500 yrs. before present (bp)), a "Marpole" occupation and a "Lacarno Beach" occupation (1,500 - 2,530 yrs. bp). Archeologists determined these occupations through the excavation of site DfRu 74 at Cable Bay in 1992. A summary of the excavation at Cable Bay is located in Appendix II.

We really don't know what Cable Bay or Pebble Beach would have looked like between 10,000 and 2,500 years ago. However, evidence of human presence found at Coon Bay in Dionisio Provincial Park (northern tip of the island) and in Montague Harbour suggests that there would also have been human activity in the Pebble Beach area (Riddington, 1998).

In its earliest days Cable Bay may have been a place where canoes were kept for transit between the Gulf Islands and the mainland. The Pebble Beach Reserve is located at the narrowest point on Galiano, with Cable Bay and Retreat Cove providing the closest sheltered launch areas on opposite sides of the Island. There is a strong possibility that Retreat Cove Rd. and McCoskrie Rd. follow a path that has existed for up to 10,000 years. In addition to being a point of transit, this area may have been used as a base camp for seasonal marine mammal hunting expeditions. Important present day species such as salmon did not re-colonise the Georgia Strait until sometime after the retreat of the Pleistocene glacier.

Sea level fluctuations due to melting glacial ice and isostatic rebound² make retrieving evidence from between 6000 and 10,000 years ago very difficult, as

2 The land was pushed down due to the tremendous weight of the glaciers. After the glaciers had receded, over a period of thousands of years, the land gradually rose or rebounded.) many of the culturally significant sites would have occurred below the present day sea

level.

There is strong archaeological evidence that the Pebble Beach Reserve has been an important site for the Hul'qumi'num people for over 2,500 years. Studies show that the area was used as a late winter and early spring fishing camp during this time. A small village at the site was probably used as a base camp for fishing and hunting related activities (Wilson, 1992). People from the surrounding islands would have had access to communities on the mainland via the Pebble Beach Reserve. Artifacts from this time period, which show similar characteristics to those found in the Reserve, have been found throughout the Gulf Islands and up the Fraser Valley, indicating strong ties, trade, intermarriage etc. between groups from these areas. Intermarriages created large "free trade" zones, with kinship connections allowing Gulf Islands people to go up the Fraser River to fish, and vice versa (Riddington, 1998).

At the time of first European contact, the Pebble Beach Reserve would have still been used as a seasonal fishing village as well as a major transit route between the mainland and the Islands. Salmon fishing would have been extremely important at this time. The First Nations probably did not use this area as a permanent village, due to the reduced light and relative vulnerability to the elements resulting from northeastern exposure.

There are currently two First Nations groups who claim to have traditionally occupied Galiano Island; both were probably among the primary users of the Pebble Beach Reserve. The first is the Hul'qumi'num Treaty Group, which includes the Cowichan Tribes, the Chemainus Band, the Lyackson Band, the Penelakut Tribe, the Halalt Band, and the Lake Cowichan Band (Figure 3). The second is the Tsawwassen First Nation (Figure 4). Both of these groups are currently working through the treaty process with the British Columbia Treaty Commission (Appendix III).

3.2 Land Use and Ownership

The Pebble Beach Reserve is divided into three separate land parcels, District Lot 60, District Lot 63, and Lot 1 (plan 18194) of District Lot 66. The following is a brief chronology outlining the owners, dates of transfer and major uses of the land.

1873

Pre-emption of what was to become DL 66. The pre-emption indicates the presence of a lake and a stream (Appendix IV) which are currently known as Laughlin Lake and Greig Creek.

1888

Dec 03- Crown Grant of District Lot 66 to Walter Weatherby Beall for \$1 per acre.

1889

May 14- Crown Grant of District Lots 60 and 63 (along with most of the island) to Samuel M. Robins for \$1 per acre. Robins was the manager of a British coal mining company operating in Nanaimo called the Vancouver Coal Mining and Land Company Ltd., and evidently purchased the land on behalf of the company. The company later sold their assets to a reformed NEW Vancouver Coal Mining and Land Company Ltd.

1903

District Lots 60 and 63 (and the rest of the "Robins land") were sold to Western Fuel Corporation of Canada Ltd.

1917

DL 60 (along with 64 and 65) was sold to Yat Wing Chang, a merchant in Vancouver's Chinatown.

1924

Nov. 12- DL 60 was forfeited to the crown for non-payment of taxes and costs by Yat Wing Chang.

- Some type of logging activity took place on District Lot 60; the specific location and amount of timber removed has not been identified. A letter written on August 4th 1924 by J. Appleby received by the Public Works Engineer in Victoria stated "I have started to remove the timber from Lot 60, 64, and 65 Galiano Island...".

1951

DL 63 (and most of the original "Robins Crown Grant") was sold to the Powell River Company. The new company promised island residents that the lot was part of a tree farm and would not be sold for 100 years.

1960

MacMillan Bloedel merged with the Powell River Company; DL 63 (and the rest of the Galiano Lands held by the Powell River Company) was included in the merger.

1967

Part of DL 63 was clearcut logged (the NE and SW corners).

1977

March 9- Lot 1 (plan 18194) of District Lot 66 was re-acquired by the Crown.

1978

The remainder and majority of DL 63 was clearcut logged.

1991

November- B.C. Tel purchased DL 63 from MacMillan Bloedel in order to excavate a small portion for the placement of a fibre optic cable (light-guide system).

1992

Artifacts were found during BC Tel's excavations. A private consultant was hired to complete an archeological dig in the immediate area and found evidence that aboriginal peoples had used the site for over 2500 years.

1998

Feb 3- The title for DL 63 was transferred from BC Tel to the Galiano Conservancy Association.

3.2 Project History

There has been a long-term interest from the Galiano community in the protection of the Pebble Beach and Cable Bay area. This interest was shown in 1988 through the results of the Sensitive Areas Survey on Galiano Island. Seventy-six percent of surveyed residents identified Pebble Beach and Cable Bay as being areas that should be given maximum protection from logging. Of these, 62% wanted the areas protected for environmental reasons, 8% for aesthetic reasons, 12% for recreational reasons, and 18% for economic reasons.

Recognizing the communities interest in the Cable Bay and Pebble Beach area, the Galiano Conservancy Association brought forward a proposal for the purchase of

District Lot 63 and for the designation of Lot 1 (plan 18194) of District Lot 66 and District Lot 60 as protected areas. The Galiano Conservancy Association approached B.C. Tel who owned DL 63 at that time, and the Provincial Government who owned DL 60 and Lot 1 (plan 18194) of DL 66, about the formation of a reserve encompassing the identified areas. These organizations saw the proposed Pebble Beach Reserve as a perfect opportunity for integrating community, government, and industry efforts into a partnership that would work to protect the environment. They saw the area as having favorable ecological attributes for the conservation of the Coastal Douglas-fir Biogeoclimatic Zone as well as great potential for research, monitoring and educational projects. In April of 1996, the Minister of Environment Lands and Parks sent the Galiano Conservancy Association confirmation of a framework for a conservation agreement regarding the Pebble Beach and Cable Bay area. This agreement entailed a contribution towards the joint acquisition of DL 63 through funds from the Pacific Marine Heritage Legacy, and the dedication of DL 60 (Crown provincial land) to approved conservation and recreation uses. 1996 also saw the confirmation of partnerships between the Galiano Conservancy Association and the University of British Columbia's Faculty of Forestry and the University of Victoria's Environmental Studies and Restoration of Natural Systems Programs, regarding the use of the Pebble Beach Reserve for educational purposes. DL 63 was appraised at \$430,000 and was sold by BC Tel to the Nature Conservancy of Canada on January 27, 1998. Title for the land was immediately transferred to the Galiano Conservancy Association, along with a Section 219 covenant (See Appendix 1) held by the Province of British Columbia and the Islands Trust Fund Board. The Galiano Conservancy Association was responsible for \$100,000 of this \$430,000, as well as the GST (\$31,000), while the Pacific Marine Heritage Legacy contributed \$150,000 and the Nature Conservancy of Canada supplied \$180,000. In addition to the covenant, a list of terms agreed upon by the Nature Conservancy of Canada and the Galiano Conservancy Association was attached to the transfer of title (Appendix 1). This Management Plan has been developed and will be implemented in accordance with "Term 3" of the aforementioned agreement:

"The Galiano Conservancy Association shall forthwith prepare a Management Plan for the approval of the Nature Conservancy of Canada setting out the

manner in which each part of the Lands shall be managed, protected and controlled..."

The plan also satisfies Trust Fund Board policy, which states that a management plan must be prepared and approved for any acquired properties, and that "Plans are to include a biophysical description of the area, an overview of present land use(s) and zoning, the identification of management issues, and recommendations for the appropriate type and level of protection, use, and modifications." (ITFB, 1992)

Geology and Soils

The Pebble Beach Reserve has been shaped and molded over millions of years. It was formed by thrust faults created by the relentless pressure of the North America and Juan de Fuca tectonic plates. Muller and Jeletzky (1970) describe Galiano Island as being entirely underlain by the sedimentary formations of the Upper Cretaceous age (65-100 million years ago). This formation is comprised of alternating beds of conglomerates, sandstones, and shales with an estimated total thickness of 3050m (Williams and Pillsbury 1958). Agriculture Canada characterizes the Reserve as having a uniform sandstone bedrock layer, which can be seen jutting out along the shoreline. Two fractures beginning in the Strait of Georgia branch into five as they pass through parts of DL 60 and DL 63 towards the opposite side of the Island. The Research Branch of Agriculture Canada identifies three major soil types on the Reserve: Saturna, which covers 90% of the land, Brigantine covering 5% and Qualicum covering the remaining 5%. These are described as follows:

Saturna: Channery³ sandy loam to channery loamy sand colluvial and glacial drift materials less than 200 cm deep over sandstone bedrock. Soils are moist during the winter months but quickly become droughty in dry periods during the summer. Water tables below 100 cm throughout the year.

Brigantine: Loamy sand to sandy loam marine or fluvial deposits (30-100 cm thick) over silty clay loam to silty clay marine deposits more than 100 cm deep. Soils are wet and saturated with water to about 60 cm from the surface during winter months. The subsoil remains moist during the rest of the

3 Thin, flat fragments of limestone, sandstone, or schist up to 15cm in major diameter (Brady1990).

year. Surface soil may be dry or even droughty during prolonged dry periods in the summer.

Qualicum: Gravelly sandy loam to gravelly sand glaciofluvial, fluvial, or marine deposits more than 150 cm deep. Soils are moist during the winter months but very droughty and dry from late spring until late fall. Water tables well below 100cm throughout the year.

Climate

The rainshadow effect of the Olympic and Vancouver Island mountains, and the moderating effects of the ocean are the dominant influences on the climate of Galiano Island. Kerr (1951) describes the Island as having a “Transitional, Cool Mediterranean Climate”. Galiano exhibits a pattern of warm, dry summers and mild, wet winters with an average of approximately 1,900 to 2,000 hours of sunshine (Renneseth and Barr, 1982) and 254 frost free days (Agriculture Canada, 1989) per annum. The average annual rainfall recorded at the North Galiano Atmospheric Environment Service station is 920 mm (from 1977 to 1988). Annual rainfall ranges from 597.3 mm to 1152.6 mm (Harrison, 1994). Over 75% of the total annual precipitation falls during the winter months (November through February), with less than 10% falling as snow.

The months of January and February produce the coldest mean temperatures of 4° to 5° Celsius, while July and August are the warmest months with mean temperatures of 17° to 19° Celsius. The combined effects of low precipitation, warm temperatures, and high number of sunshine hours often result in an annual moisture deficit on Galiano Island from mid-June to early October (Harrison, 1994). This deficit can often reach drought conditions in areas of recent clearcuts, such as District Lot 63, and can result in an extreme forest fire hazard.

Flora

The Pebble Beach Reserve falls entirely within the Coastal Douglas-fir Biogeoclimatic Zone, with Coastal Western Hemlock (*Tsuga heterophylla*) establishing an unusual presence in the understory of the mature forest on District Lot 60. The forest is mainly characterized by large tracts of Douglas-fir (*Pseudotsuga mezesii*), with Western Red Cedar (*Thuja plicata*), Red Alder (*Alnus rubra*), and to a lesser extent, Big Leaf Maple (*Acer macrophyllum*) and Grand Fir (*Abies grandis*) interspersed among them. Salal (*Gaultheria shallon*), sword fern (*Polystichum munitum*), stinging nettle (*Urtica dioica*), and vanilla leaf (*Achlys triphylla*) dominate the understory. The northeast corner of District Lot 60 is composed of a swampy area dominated by Red Alder, stinging nettles, and sword fern. The soil of the swampy area is very moist and rich and does not seem suitable to support a Douglas-fir forest. However, there are a few Western Red Cedars present in the southeast corner of the District Lot.

District Lot 63 was logged between 20 and 30 years ago and is therefore dominated by vegetation characteristic of the Coastal Douglas-fir Zone pole/sapling stage. Sections that are blanketed by Douglas-fir have a very scarce understory, as the close spacing reduces light penetration. Many of the poorly growing trees are dying off, with the process of natural forest spacing beginning to take effect. A large portion of this lot is still in its earliest stage of succession, with hardwoods such as alder, cherries and maples establishing themselves and shading out the young Douglas-fir seedlings. These areas have a more active understory, characterized by dense thickets of salal, dull oregon grape (*Mahonia nervosa*), blackberries, huckleberries, honeysuckles and sword fern. The B.C. Tel right of way and roadside areas of District Lot 63 have become overgrown with introduced species such as scotch broom (*Cytisus scoparius*) and himilayan blackberry (*Rubus discolor*). These species take advantage of heavily disturbed areas that become ill suited for most native forest species. Due to their aggressive nature, the exotics have successfully taken over almost all of the open and regularly disturbed sections of District Lot 63.

The Pebble Beach Reserve is also comprised of several riparian strips, established through the presence of Greig and Beaver Creeks. Skunk cabbage (*Lysichiton*

americanum), rushes and several species of hardwoods are present in some of these areas. A significant number of wildflowers can also be found throughout the forest and along the shoreline, including fairyslippers (*Calypso bulbosa*) and seablush (*Plectritis congesta*). Many of the flower communities growing in the forest/marine ecotone³ are particularly vulnerable to human disturbance, as they are highly visible when in bloom and are located in frequently used sections of the Reserve.

A list of trees, shrubs, herbs, ferns, fern allies, and lichens occurring in the Pebble Beach Reserve can be found in Appendix V.

Fauna

With its variation in stand age, structure and aspect, its forest/marine ecotone⁴, and its streams and wetlands, the Pebble Beach Reserve provides a wide range of wildlife habitat. Although there have been no official wildlife inventories in this area, some of the more common species have been identified. These include black-tailed deer, river otter, beaver, mink, raccoon, Douglas squirrel, bald eagle, raven, North American crow, forest perching birds and many other fauna associated with the Douglas-fir zone. There is also an indication of porcupine presence, as a tree exhibiting what was believed to be porcupine damage was found. There are no large carnivores (bears, wolves, coyotes) present on Galiano Island, substantially decreasing any risk to visitors in the Reserve. However, the disturbance caused by human presence does present a problem for some of the wildlife. This mainly takes the form of habitat damage via trampling, or frequent disturbance of nesting sites, den sites, watering holes and transit routes.

4 An ecotone is the transitional area between two ecosystems, in this case, it is the area which is largely influenced by both the forest ecosystem and the marine ecosystem.

Marine Intertidal Zone

The north east corner of District Lot 63 and the entire northern edge of District Lot 60 border on the ocean. As these lots include the beach portion of the land, it is important to find out the types of organisms that call this area their home.

A general survey of marine intertidal regions within the Pebble Beach Area has been completed. The inventory took place the week after summer solstice (June 21st) with extremely low tides occurring during late mornings and early afternoons. This facilitated inventories of the regions that are rarely exposed to air, and allowed more time to investigate the tide pools and rock that are exposed daily.

Four distinct intertidal regions were identified and surveyed:

Sheltered or protected sandstone rock and tide pools

Exposed sandstone rock and tide pools (in direct line of ocean waves)

Rocky mud-flats at the mouth of Cable Bay (semi-exposed)

Pebble beach

The survey consisted of making detailed observations of the flora and fauna that occur in each of the specified regions, identifying the species found and recording their general abundance. Field guides and I.D. books were used for this process. A list of species found in each of the outlined ecosystems is located in Appendix VI.

4.6 Age-Class Distribution

District Lots 60 and 66 support mature, bordering on old-growth, Coastal Douglas-fir ecosystems. They both show signs of past fires and logging activities, although the dates when these disturbances occurred were not recorded. However, a rough approximation of the dates can be made by determining the age of the trees in the disturbance area. This was achieved through the aging of trees (using increment borers) in several sample plots interspersed throughout the areas in question. The locations of

the plots were determined through air photo analysis, using variations in forest canopy color and texture as a guide for their positioning. The procedure indicated the percent species composition within the forest and the average ages of each species found. The results of the sampling are most easily interpreted graphically, in the form of an age-class distribution. Ages are simply divided into classes (11 to 20, 21 to 30 etc), with the number of trees falling into each specified range being plotted on the y-axis of the graph. Figure 5 shows the age-class distributions for each surveyed plot while Figure 6 shows the distribution for all of the plots in District Lot 60 and Lot 1 (plan 18194) of District Lot 66 combined.

Ages were not determined for any trees on DL 63 as this area has already been accounted for through its logging history.

The average age of 171 randomly sampled trees on District Lot 60 and Lot 1 of District Lot 66 was 78 years. Trees ranged from 7 to over 330 years old, with the majority falling between age 60 and age 90. The distributions seem to indicate that there was some type of disturbance, perhaps logging or fire, approximately 80 to 90 years ago on the north facing slope of District Lot 60. A large patch of 40 to 50 year old Red Alder covers the north-eastern corner of the District Lot. Air photograph analysis indicated a slight change of forest canopy texture in the northern half of the District Lot, close to Pebble Beach. This area has a uniform tree canopy comprised of Douglas-fir, approximately 70 to 80 years of age. It differs from the rest of the forest, which more closely resembles a multi-aged and mixed-species tree canopy.

The age-class distributions representing the forests on District Lot 66 seemed to indicate a limited disturbance between 110 and 120 years ago.

Douglas-fir comprised 51.5% of the sampled trees, with an average age of 89 years, while Western Red Cedar accounted for 27.5% of the sample and averaged 85 years old. The remainder of the sample was represented by Western Hemlock (11%) averaging 54 years old, Red Alder (9.4%) averaging 42 years old, and Grand Fir (0.6%) averaging 41 years old. (Supporting data and a map indicating the locations of the plots can be found in Appendix VII)

5.1 Flora

There are three management issues concerning the protection and general health of the flora in the Pebble Beach Reserve; natural succession, vegetation control and human disturbance. Policies addressing these issues are as follows:

All natural processes occurring within the Reserve, with the exception of fire and the spread of exotic species, will be left to proceed without human interference.

Research or restoration projects that alter natural vegetative processes may be permitted in accordance with the policies and guidelines addressed in Section 7.0 of this plan.

Areas supporting large concentrations of exotic species such as Scotch Broom, Himalayan Blackberry and Gorse should be identified and then classified according to impact on natural vegetation and potential for further dispersal.

An assessment of appropriate exotic species control measures will be made.

Activities such as broom removal and native species seeding will be undertaken to prevent further spread of invasive exotic species.

Surrounding landowners will be encouraged to undertake measures to ensure the control of exotic species, and prevent further spread into the Reserve.

Signage requesting visitors to stay on designated trails will be put in place, to minimize damage to native vegetation.

Trails will be constructed in such a manner as to avoid sensitive areas, such as wildflower populations located in the forest/marine ecotone or wetlands.

5.2 Fauna

Due to the fact that there have been no official wildlife surveys performed within the Pebble Beach Reserve, management objectives for individual species cannot yet be determined. However, general policies can be made. These include:

There will be no hunting or fishing of any species within the boundaries of the Reserve.

Impact from trail use will be minimized through the elimination of informal trail branches, spurs and shortcuts, to reduce forest fragmentation.

Terrestrial habitat assessments will be made. If, upon their completion, it is found that important wildlife habitat is being adversely affected by a man made component of the Reserve, amendment or restoration possibilities will be explored and implemented.

Community and academic research projects involving wildlife species and their habitat will be encouraged.

Trapping, mark/recapture, and electrofishing for research purposes may be permitted on a case by case basis. Research guidelines and appropriate scientific methods are addressed in Section 7.0 of this plan.

5.3 Streams

There are two streams running through the Pebble Beach Reserve, Greig Creek which runs from Laughlin Lake into Retreat Cove, and Beaver Creek which runs from a wetland just southeast of the Reserve into Cable Bay (Figure 7). No stream assessments or habitat surveys have been performed on either creek to date, although Greig Creek is believed to support a small population of Coho salmon. Both streams have been subjected to serious disturbance from logging operations, with Beaver Creek being logged to its bank in 1978. Subdivisions and roads have been built throughout the watersheds of both streams, altering their routes, water quality and flow rates. There are

also three beaver damns about two thirds of the way down Beaver Creek, forming a series of small ponds.

The stream watersheds are also addressed by this plan, although they do not fall completely within the Pebble Beach Reserve boundaries. Laughlin Lake is located on Parcel D of DL 66 and is privately owned. It has a history of agricultural use and was completely drained in the second half of the 19th century. It has since been dammed several times by beavers. The wetland from which Beaver Creek originates has also been subject to fluctuations in water level over its history. It is located on lot 7 (plan 37526) of DL 61. The first written observation of this area was made during the 1888 crown survey of the Island, which made reference to "the great" beaver dam. The wetland has been drained as well as used as a source of irrigation for agricultural purposes.

In order to assess the environmental quality and habitat potential for these areas, the following actions should be taken:

Map the locations of the streams, any tributaries, the lake, the wetland, and watershed boundaries (Permission of landowners must be sought before entering private land).

Determine the water quality of the lake, wetland and streams, and assess the watershed for any attributes that may be causing deterioration to or may pose a potential threat to the system.

Perform a salmonid habitat assessment for both of the streams.

Determine and carry out any actions that may be suitable for habitat restoration or enhancement, and that adhere to the policy and guidelines addressed in Section 7.0 of this plan.

Encourage private landowners to place conservation covenants on portions of property within the Greig Creek and Beaver Creek watersheds.

5.4 Ecological Monitoring

Three broad ecosystem types have been identified within the Pebble Beach Reserve: stream/pond, foreshore, and forest. Greig Creek and Beaver Creek, the entire Foreshore, and a representative area of the forest will undergo long term ecological monitoring. Monitoring of these areas will occur as follows:

The locations of Greig Creek, Beaver Creek, and their surrounding watersheds will be accurately surveyed.

- An assessment of water quality, salmonid habitat, salmonid populations, riparian attributes and physical features within the two streams will occur on an ongoing basis.
- Marine birds along with intertidal flora and fauna will undergo an initial assessment, and will then be monitored on an ongoing basis.

The Smithsonian Institute/Man and the Biosphere biodiversity monitoring project will be initiated. A one hectare plot will be established on a representational site of both the mature forest on DL 60, and the recently logged forest on DL 63. An initial inventory will take place, and will be updated on an annual basis. Further details of this project can be found in Appendix VIII.

5.5 Fire

There is a high risk of fire in the forested areas of the Reserve during months of low precipitation and warm temperatures. The risk is at its greatest in late July, August, and early September, before the autumn rains. There have been no recorded fires (other than controlled burning for forestry purposes) in this area, resulting in a large buildup of fuel material. This buildup is most evident in the plantation forest on DL 63, where slash material from logging and a large (and increasing) amount of dead wood from natural stand thinning has accumulated. In addition, the Pebble Beach Reserve is located in close proximity to the McCoskrie and Melissa Roads residential neighborhood. A fire in the

Reserve area would present a definite threat to property, and to the inhabitants of the subdivision. Evidence of past forest fires has been found in the Pebble Beach Reserve, with most of the older (100 yr. +) Douglas-fir exhibiting fire scars on their bark.

The Galiano Volunteer Fire Department will respond immediately to any report of fires in the Reserve, and will alert the Ministry of Forests to any potential forest fire threat. In order to aid with fire prevention, and fighting, the following actions will be taken:

Open fires will not be permitted in the Reserve.

The public will be notified that open fires are prohibited in the Reserve.

The Galiano Conservancy Association will work with other organizations (Volunteer Fire Departments, Chamber of Commerce etc.) to educate the public on the dangers of fire in the forests of Galiano.

Signs will be posted designating the area as a "no fire zone".

The east-side haul road and the trail to Cable Bay will be maintained at a standard set by the North Galiano fire chief, in order to allow fire department vehicles to access the Reserve.

The Reserve may be closed to public use in the event of an extreme forest fire hazard. The Galiano Conservancy Association, and other agencies holding legal interest in the Reserve, will be consulted before any action is taken.

Local volunteer "wardens" will monitor the area and if necessary inform visitors of the fire regulations and possible impacts of non-compliance.

The possibility of on-site fuel reduction in order to limit fire intensity will be explored.

5.6 Wilderness Area

An area with a minimum size of 10 hectares will be designated as wilderness. The wilderness area will be devoid of any manmade structures, including roads and trails, and will not be utilized for any formal recreational, educational, research or restoration endeavors. The designation of a wilderness area has been recommended in order to retain some of the spiritual value inherent in a pure and wild environment. The location of this area will be determined in coordination with the placement of the Smithsonian Institute/Man and the Biosphere forest biodiversity monitoring plots.

5.7 Vulnerabilities and Threats

The Pebble Beach Reserve will be managed for the preservation and protection of its natural ecosystems in accordance with the policies and values set out by this plan. However, certain phenomena, which are beyond the control of the Management Committee and fall outside the scope of this plan, may present a threat to the ecological wellbeing of the Reserve. Listed below are examples of such phenomena:

Tanker spills (oil, waste etc.)

Fraser River effluent (silt, pollution, water temperature)

Blowdown and exposure to elements due to adjacent forest removal

Air pollution from Greater Vancouver / Victoria

Rapid sea level fluctuation

Climate change

Large and rapid increases in population density on Galiano

The Pebble Beach Reserve covers traditional aboriginal territories of both the Hul'qumi'num treaty group and the Tsawassan First Nation. Although documented historical knowledge regarding the use of the Pebble Beach Reserve is limited, information has been provided through an archaeological assessment of the area. It was determined that portions of the Reserve have been very important to aboriginal peoples for at least 2500 years and has probably been a seasonal village and transportation route throughout that period. The culturally significant findings and spiritual value inherent in the Reserve will be preserved along with its ecological attributes. First Nations groups with an interest in the Pebble Beach Reserve have been informed of, and invited to participate in, the planning of the Reserve. This will continue, with invitations to participate in any further management decisions regarding the Reserve. It is also recommended that interested First Nations groups be invited to share traditional knowledge of the Pebble Beach Reserve, with the possibility of developing an information pamphlet for Reserve visitors.

Education, Research and Restoration Policy

In keeping with objectives 1 and 2 of this plan the Pebble Beach Reserve will provide opportunities for learning within the Galiano community and for educational institutions throughout the region. Partnerships have been formed between the Galiano Conservancy Association and the Galiano Island School, University of British Columbia, and University of Victoria, specifically regarding the use of the Pebble Beach Reserve. The primary objectives for the education, research and restoration management of this area, are: to further environmental awareness, to facilitate ecological research, and to rehabilitate ecosystems subject to human disturbance. Policies regarding the activities of researchers, educational users and those conducting restoration in the Reserve are modeled after regulations outlined by the *Ecological Reserve Act*. The policies are as follows:

1. Research, educational use, or restoration within the Pebble Beach Reserve may be undertaken only when authorized pursuant to these regulations.
2. The Pebble Beach Reserve Management Committee may authorize the use of the Reserve for research, education, or restoration purposes. The managers shall convey conditions that, in their opinion, are adequate to protect the Reserve and any ongoing research or restoration from disruption; provided however that minimally disruptive procedures, such as collection of some plant and animal specimens, soil and water samples, and the like, may occur with specific authorization.
3. The Committee may not authorize research, educational use or restoration of the Reserve that is likely to cause any significant disruption within the Reserve without first consulting the Galiano Conservancy Association Board of Directors.
4. An application for authorization under sections 2 and 3 shall contain the following

information:

- a description of the proposed use and, in the case of restoration, the expected benefits or outcomes;
- a description of the areas of land to be affected, with an accompanying map;
- a description of the means of access to be used;
- the duration of the proposed use;
- the ecological impact of any activities that will be undertaken within the Reserve under the authorization;
- the number of individuals that will be entering the Reserve under the authorization and, where possible, their names;
- the name of the individual who will direct the proposed research or educational program.

7.2 Education, Research, and Restoration Guidelines

The Galiano Conservancy Association will draft a set of guidelines stating the appropriate educational, research, and restoration activities that may occur within the Pebble Beach Reserve.

The guidelines for District Lot 63 may differ from those applied to District Lot 60 and Lot 1 (plan 18194) of District Lot 66, as is consistent with their Galiano Island Official Community Plan Land-Use Designations and the objectives of this plan. If the Land-Use Designations are changed, the guidelines will be amended accordingly.

Members of the Galiano community with related experience and/or expertise, along with members of various educational and government institutions, will be consulted prior to the determination of any guidelines.

Members of the Pebble Beach Management Committee will follow the guidelines without exception when granting permission to conduct educational, research,

or restoration activities within the Pebble Beach Reserve.

7.3 Interpretive and Educational Programs

In recent years the Galiano Conservancy Association and its partners have used the Pebble Beach Reserve for educational activities directed towards a wide range of participants. Programs which have occurred in the past include: interpretive walks for the public; cultural, ecological, and restoration studies with the L.I.F.E Boat Flotilla; "Holistic Resource Management" with the Elderhostel group; "Earth Week 98" with the Sierra Club; as well as Coho fry releases into Greig Creek by the Galiano Elementary School. The Galiano Conservancy Association has made a commitment to continue hosting such programs in the Reserve, and is willing to take an active role in organizing and contributing to ongoing studies with the Galiano Elementary School, the Galiano community, Elderhostel, the University of British Columbia, and the University of Victoria.

In addition, the Galiano Conservancy Association will print a small interpretive pamphlet, outlining some of the natural attributes of the Reserve and giving a brief summary of its ecological and cultural history. Visitors will be able to pick up an interpretive pamphlet from one of the information kiosks located at an entrance to the Reserve.

8.1 Access

Public access to the Pebble Beach Reserve will be guaranteed in perpetuity. There are currently five access points to the Reserve, two that are open to the public, and three over private land (Figure 8). Two of the access points on private land occur at points on the east-side haul road, one at the intersection of DL 64 and 66, and the other at the intersection of DL 60 and 59. The third private access is found along an old logging road in DL 59, close to the foreshore. Access from the east-side haul road is no longer possible as the owners of DL 53 and Lot 28 on DL 65 have placed gates across it. The old logging road on DL 59 is still a rough but usable point of access that enables motorized vehicles to reach Pebble Beach. Presently, the logging road can only be accessed from McCoskrie Road, through DL 63 and DL 60. The two public access points occur at the end of McCoskrie Road and via an overgrown trail off Vineyard Way, opposite Laughlin Lake. It is important to note that use of motorized vehicles anywhere on DL 60 or Lot 1 (plan 18194) of DL 66, including the east-side haul road and the old logging road (to Pebble Beach), contravenes the Galiano Island Official Community Plan Land-Use Designation (Nature Protection) for those areas.

In addition to the old logging road on DL 59, there are two trails that lead to the foreshore; one to Cable Bay, and one to Pebble Beach. Both beaches are within a 20 minute walk from their respective trail heads.

In keeping with its objectives, with the legally binding agreements placed on portions of the land, and the land-use designations, this plan is committed to non-motorized public access and to maintaining a wilderness experience for users of the Pebble Beach Reserve. It is recommended that the Pebble Beach Reserve Management Committee be mindful of the fact that public access (via land) to Dionisio Provincial Park, Cook Cove and other traditionally used beaches, or recreation areas, is presently limited, and that many of the Ministry of Transportation and Highways dedicated public beach access routes are in need of improvement. It is suggested that present motorized

vehicle use within the Pebble Beach Reserve be allowed to continue until suitable, alternative beach accesses have been improved or established. The following actions will be taken to follow through on this commitment:

- When suitable public beach accesses have been improved or established, the Galiano Island Community and in particular the RCMP, Volunteer Fire Department, and Ambulance Service, will be notified that public access into the Pebble Beach Reserve by motorized vehicle will not be permitted.
- Determine an appropriate design and secure the material for the required barriers. Barriers should be as inconspicuous as possible, minimizing their effects on the Reserve's aesthetic qualities. They must also be easily removed in order to accommodate vehicles in the event of an emergency.
- A lockable barrier will be placed on McCoskrie Road at the intersection with the east-side haul road, keeping motorized traffic from entering the Reserve.
- The old logging road entering the northeast corner of the Reserve from DL 59 will be decommissioned.
- Possible placement of lockable barriers at private access points including: the east-side haul road between DL 63 and DL 65, the east-side haul road between DL 60 and DL 59, and the old logging road between DL 60 and DL 59 (near Pebble Beach). Lockable Barriers will be constructed at these specified points only if deemed necessary by the Pebble Beach Management Committee to ensure that motorized vehicles do not gain access to the Reserve.
- Keys to all barriers will be given to the fire chief and RCMP officer on the Island. In addition keys will be available for those property owners who hold easements along the east-side haul road (See Appendix I).
- In the event of the removal of existing gates on surrounding private property (DL 65 and DL 53), the strategy will be revised to ensure that motorized vehicles can not gain access into the Reserve.
- All designated trails accessing the Reserve and the foreshore will be maintained and open for public use.

8.2 Visitor Use

A variety of environmentally compatible, out-door recreational activities may occur in the Pebble Beach Reserve. Several dedicated trails in the forested area will provide opportunities for cycling, walking/hiking, nature study, and birdwatching, as well as access to the shoreline areas. The beaches will provide a place for relaxation, swimming, picnicking, nature study, birdwatching, and other beach related activities.. Artistic activities such as photography, painting, and sketching may also occur. Open fires will not be permitted within the Reserve. There will be no overnight camping or use of motorized vehicles (motorized wheelchairs are not grouped with motorized vehicles) permitted within the Reserve. Furthermore, visitors will not be allowed to remove any cultural or natural component of the Reserve, especially, wildflowers, fungi, and archaeological artifacts, unless specifically permitted by the Pebble Beach Reserve Management Committee.

Visitors with disabilities, the elderly, and families with small children (infants) who need to be carried, may find sections of the Reserve's trail network difficult to traverse. In response to this problem, this plan encourages the Galiano Conservancy Association to organize a volunteer group, which will provide assistance to those in need. This may involve activities such as helping to carry small children, providing a stable arm to hold on to, or guiding a wheelchair down a trail. The following actions are recommended:

- Establish a group of volunteers who are willing to provide assistance to those in need.
- Establish what times and on what days the volunteers will be available.
- Notify the Galiano community of the service and the times that assistance will be available, through articles in the local newspaper and personal communications.
- Compose a form which must be signed by any participant using the service, specifying that any volunteers, and the Galiano Conservancy Association itself, are not liable for mishaps or accidents that occur during the assisted trip.

8.3 Commercial Use

Any commercial use of the Pebble Beach Reserve without the expressed written consent of the Galiano Conservancy Association will be strictly prohibited. This regulation encompasses activities such as guided tours, commercial education programs, salal harvesting, dog walking services etc.

8.4 Dogs

There has traditionally been no restriction put on the presence of dogs within the Pebble Beach Reserve area. This will continue in the future. This plan does recommend that the issue of unleashed dogs be reviewed as necessary, so as to assess whether any conflicts with visitors, wildlife, or wildlife habitat have occurred. If this is the case, appropriate measures will be taken by the Pebble Beach Management Committee to ensure that visitors and the natural values of the Reserve are protected.

8.5 Signage

Signs required to assist the Reserve user are grouped into 3 categories:

Information kiosks

Intersection markers indicating trail crossings

Safety/Hazard/Warning signs

Information kiosks will be located at public access points, specifically at the intersection of Vineyard Way and Laughlin Lake Trail and at the intersection of the east-side haul road and McCoskrie Road (adjacent to parking area). The kiosks will have a roof, and a display area containing a map of the Reserve, trail information including names, uses, distances, and travel times, a brief history of the area, the partners (including

logos of organizations) responsible for the creation of the Reserve, and any pertinent regulations. Kiosks may also be used as dispensaries for interpretive pamphlets.

Markers will be placed at trail crossings, specifically at the intersections of the Pebble Beach trail and east-side haul road, the Pebble Beach trail and Shoreline trail, and the Cable Bay trail and Shoreline trail. These signs will be unobtrusive, almost blending in to the natural background. They will not be posted on trees. The Pebble Beach Reserve Management Committee will explore options for sign materials and placement, and will subsequently implement the most suitable choices.

If necessary, Safety, Hazard, or Warning signs will be posted. There is currently a need for fire hazard signs at Cable Bay and Pebble Beach, asserting the "no fire" policy on the Reserve. The design recommended by the Galiano Fire Chief for these signs is specified in Figure 9. The Pebble Beach Reserve Management Committee will recommend the posting of Safety, Hazard, or Warning signs when they are deemed necessary for the protection of the visitors and ecology in the Reserve.

9.1 Parking

There are currently two main areas used for parking within the Pebble Beach Reserve. The first is located at the junction of McCoskrie Road and the east-side haul road (6 car capacity) and the second at the Pebble Beach trail head (4 car capacity) (Figure 10). In addition, the terminus of the old logging road which accesses the Reserve from DL 59 (private property) has been, from time to time, used for parking. Parking areas situated on DL 60 (Pebble Beach trail head and Pebble Beach) do not comply with the access strategy outlined in Section 8.1 of this plan.

The Ministry of Transportation and Highways (MoTH) classes McCoskrie Road as a dedicated road that encompasses all land within 10 meters on either side of the center line. If the full 20m width is utilized, a small parking area could be created. The public access at the intersection of the Laughlin Lake Trail (see Section 9.2.1) and Vineyard Way is also a suitable site for a small parking area.

At the moment, the existing parking areas appear to be adequate, although, during periods of peak use (August) vehicles are forced to park on the shoulder of the east-side logging road. Policies and actions that will ensure the provision of adequate parking facilities in compliance with legal agreements are as follows:

- Community consultation, including the R.C.M.P and the North Galiano Volunteer Fire Department, will occur.
- Parking requirements will be reviewed and proposals for new parking areas, including one at the intersection of Laughlin Lake Trail and Vineyard Way, will be considered.
- It is recommended that the area at the intersection of McCoskrie Road and the east-side logging road become a formalized parking facility.
- The area at the head of the Pebble Beach trail will be closed to parking.

as access to this point by motorized vehicle will be discontinued.

Consideration will be given to restoring the impacted area to its natural condition.

- Parking will not be permitted in front of emergency vehicle access points.
- The placement of "No Parking" signs at emergency vehicle access points will be considered.
- Consultation with surrounding land owners regarding the reduction of disturbance to private property (noise, trespassing etc.) will occur in advance of the implementation of any parking strategy.
- Visiting groups will be encouraged to use a minimum number of vehicles or arrange for drop-off / pick-up transportation.

9.2.0 Trails

Prior to the area becoming the Pebble Beach Reserve, approximately 2.5 kilometers of well-traveled trails and 2.5 kilometers of dirt road (included as trails for the purposes of this plan) existed. Trail standards vary from narrow forested foot paths to a 5 meter wide, fully functional logging road. Activities supported by these routes include walking, hiking, jogging, cycling, horseback riding and motorized transport. Management of trails will be primarily focussed on non-motorized use. The trails will be categorized as either multi-use or pedestrian only, with those labeled multi-use open to all appropriate forms of non-motorized travel. Emergency vehicles will have access to designated multi-use trails.

9.2.1 Trail Network

In accordance with objective 7 of this plan, "To facilitate low impact, day-use recreation within the Reserve", it is imperative that the designation of an official trail network occur. This will be achieved through the use of existing trails along with the creation of

connecting routes. The network will take the form of a forest/shoreline loop, connecting the well traveled Cable Bay and Pebble Beach trails with the east-side haul road and the creation of a well marked trail along the forest/foreshore edge (Figure 11). An informal, overgrown path already exists along the foreshore, and will be upgraded into a well defined trail. Careful planning of this trail must precede any actions as the forest/foreshore area supports a diverse population of wildflowers and is frequented by wildlife (eagles, otters, shoreline birds etc.) to access the beach and ocean. Disturbance to these areas should be minimized. The loop will be accessible from both Vineyard Way (opposite Laughlin Lake) via Laughlin Lake trail and from McCoskrie Road. The following actions will be taken to complete the trail network:

Community consultation including meetings with the Galiano Island
Transportation Advisory Committee.

- The east-side haul road between DL 66 and DL 59 will be designated as a multi-use trail.
- Wildlife and wildflower habitat assessments will be conducted along the forest/foreshore edge, and will be used to determine a suitable route for the Shoreline trail.
- The official Shoreline trail will be constructed in a similar fashion to the Pebble Beach trail.
- Signage, indicating the locations, distances, and estimated walking times of all official trails in the Reserve will be posted at the intersection of McCoskrie Road and the east-side haul road.

9.2.2 Trail Use

Individual trails are designated as either multi-use or pedestrian depending on their surface material, width, environmental impact, and location. The Pebble Beach trail has

a forest floor surface with many exposed roots. It narrowly winds through a relatively undisturbed stand of Douglas-fir. Only pedestrian activities will be permitted along this trail. Other activities such as cycling and horseback riding tend to have an adverse impact on the surrounding environment and will gradually erode the path. As the Shoreline trail is to be modeled after the Pebble Beach trail, it will facilitate similar activities. The Cable Bay trail, Laughlin Lake trail and east-side haul road will be classified under the multi-use category. These trails exhibit compacted dirt and gravel surfaces and for the most part are greater than two meters in width, making them more resistant to degradation. The Cable Bay trail and east-side haul road, will also be designated as emergency access routes as they have been adequately constructed for emergency vehicle use.

9.2.3 Trail Maintenance

Trails must be maintained in order to provide a safe recreational experience and to reduce deterioration of the surrounding ecology by trail widening and erosion. The Cable Bay trail and the east-side haul road have been designated as emergency access routes and therefore must be maintained at a standard agreed upon by the North Galiano Island Fire Chief. Actions to ensure that trails are maintained at an appropriate standard are as follows:

- A set of standards will be developed for pedestrian, multi-use and emergency access trails, outlining acceptable levels for erosion, drainage, windfall, root damage, width, and forest encroachment.
- The current condition of all trails will be assessed in accordance with the developed set of standards, recording the location and attributes of all "damaged" areas. The "damage" can then be prioritized in terms of severity and urgency.
- The North Galiano Fire Chief will be consulted on an annual basis to assess the condition of emergency access routes.

- Maintenance work parties will attend to priority repair and damage prevention, following an annual assessment of trail condition.
- In the event of any serious problem, maintenance should occur promptly to address safety concerns and to prevent further damage.

9.3 Toilets

There are currently no public toilets between Montague Provincial Park and Dionisio Provincial Park on Galiano Island. This presents a problem for members of educational workshops and work parties, and for recreational users within the Pebble Beach Reserve. Facilities may need to be provided both for user convenience, and to ensure that a sanitary environment is maintained. The following actions will be taken:

- Investigation into the desirability of providing and maintaining toilet facilities, specifically low impact toilets, at one or more locations in the Reserve.
- If deemed necessary, placement of toilet facilities at the most feasible location(s), and implementation of required maintenance activities.

9.4 Garbage

Galiano Island offers recycling but no public landfill. As the number of visitors to the Pebble Beach Reserve increases, the amount of garbage that they leave behind may pose collection and removal problems. The Reserve has from time to time been used for squatting and for marijuana growing, and remnants of campsites and grow operations are scattered throughout the forested area. Non-biodegradable refuse from these activities has accumulated over the years and needs to be removed. In addition, abandoned cars, logging cables, and other miscellaneous items have been reported. The following actions will be taken:

- Organize educational activities that will encourage visitors to take responsibility for their own and other garbage.
- Organize volunteer work parties as needed, removing garbage, abandoned structures, and miscellaneous items.

10.1 Insurance

Insurance, in an amount not less than \$1,000,000.00 inclusive per occurrence against death, bodily injury and property damage, shall be provided and maintained with insurers licensed in British Columbia and in forms and amounts acceptable to the *Province Comprehensive General Liability Policy*.

10.2 Land-Use Designation

District Lot 63, owned in fee simple by the Galiano Conservancy Association, is currently designated by the Galiano Island Official Community Plan (enacted in 1995 by the Galiano Island Local Trust Committee) as Forest. It is recommended that the Galiano Conservancy Association apply for a change of Land-Use Designation from Forest to Nature Protection. All educational, research or restoration activities that do not comply with the Nature Protection Land-Use Designation should be concluded prior to the application.

10.3 Road Permit

In compliance with Galiano Island Official Community Plan Land Use Designation policy for Nature Protection (see Section 2.7.d), the renewal of Road Permit NO. R00540 held by MacMillan Bloedel Limited should not be supported. Section II.7.d) states “Zoning for Nature Protection areas may permit trails and uses permitted as specified in the Ecological Reserves Regulations pursuant to the Ecological Reserves Act. The Ecological Reserve Act states that “No person shall...use motorized vehicles within an ecological reserve...”.

10.4 Management Responsibilities

The management duties for the Pebble Beach Reserve and subsequent implementation of this plan will be the responsibility of the Galiano Conservancy Association. This organization has a mandate to carry out projects of this type (as stated in the Galiano Conservancy Association Constitution by the purposes of the society) and has benefited from the experience of managing Mt. Sutil and Ecological Reserve #128 (Shaw's Bog). The membership of the Galiano Conservancy Association has long supported the Pebble Beach Project and is in favour of taking on management responsibilities for the Reserve. It is therefore recommended that this organization set up a permanent Pebble Beach Reserve Management Committee comprised of five members including at least one member from the Galiano Conservancy Association Board of Directors and one member from the Melissa / McCoskrie Roads neighborhood. The Galiano Conservancy Association Board of Directors will appoint the five committee members on an annual basis. The appointees must then be presented before the Galiano Conservancy Association members at the organization's Annual General Meeting for final confirmation. From time to time, if a committee member resigns, or if the addition of a member with specific expertise or an applicable background will compliment the committee, the Board of Directors shall make the appointment, with confirmation from the Galiano Conservancy Association members occurring at the next Annual General Meeting.

The committee's primary mandate will be to implement the recommendations made by the Pebble Beach Reserve Management Plan. The committee will also take responsibility for reviewing the plan at the end of every five-year period after its initial implementation. The Pebble Beach Management Committee, the Galiano Conservancy Association Board of Directors, the Ministry of Environment Lands and Parks, the Islands Trust Fund Board, and the Nature Conservancy of Canada must agree upon all amendments made to the plan.

The implementation of the Pebble Beach Reserve Management Plan will occur over a five year period. All actions recommended by this Plan have been categorized as either short-term, mid-term, long-term or monitoring and ongoing activities. The short, mid, and long-term categories represent activities with high priority, moderate priority and low priority respectively. The ongoing and monitoring category includes those tasks and projects that will require long-term commitment of resources and labour.

11.1 Short-term

- ❑ Notify the public that fires are prohibited in the Reserve.
- ❑ Consult with experienced members of the Galiano community along with various educational and government institutions regarding guidelines for education, research and restoration conduct. Develop a set of guidelines to be followed when granting permission for a proposed project.
- ❑ Design and build information kiosks at both of the public entrances to the Reserve. Signage indicating the locations, distances, and estimated walking times of all official trails in the Reserve will be posted at the kiosks.
- ❑ Post required safety, hazard, and warning signs, specifically "No Fire" signs.
- ❑ Establish a group of local volunteer "wardens" who will monitor the Pebble Beach Reserve and report to the Management Committee.
- ❑ Design and build trail markers to be placed at trail intersections within the Reserve.
- ❑ Print an interpretive pamphlet outlining the ecological and cultural history of the Reserve, its natural attributes, and trail information including a small map.
- ❑ Develop a set of standards for pedestrian, multi-use and emergency access trails, outlining acceptable levels for erosion, drainage, windfall, root damage, width, and forest encroachment.
- ❑ Assess the current condition of all trails in accordance with the developed standards, recording the location and attributes of all "damaged" areas. Sites can then be

prioritized for restoration.

- ❑ Eliminate informal trail branches, spurs and shortcuts.
- ❑ The official Shoreline trail will be constructed in a similar fashion to the Pebble Beach trail. Wildlife and wildflower habitat assessments along the forest/foreshore edge will be used to determine a suitable route for the trail.
- ❑ Continue to encourage First Nations groups to participate in management decisions regarding the Pebble Beach Reserve and to share any traditional knowledge of the area.

Mid-term Activities

- ❑ Map the locations of the streams, any tributaries, the lake, the wetland, and watershed boundaries (Permission of landowners must be sought before entering private land).
- ❑ Determine the water quality of the lake, wetland and streams, and assess the watershed for any attributes which may be causing deterioration to or may pose a potential threat to the system.
- ❑ Perform a salmonid habitat assessment for Greig Creek and Beaver Creek.
- ❑ Complete terrestrial habitat assessments in the forested area of the Reserve, and if necessary, apply appropriate restoration techniques to damaged wildlife habitat. Take preventative measures to ensure that adverse affects resulting from human impact are eliminated.
- ❑ Identify and prioritize areas containing large concentrations of aggressive exotic species. Determine and apply appropriate exotic species control measures.
- ❑ Encourage private landowners to place conservation covenants on portions of property within the Greig Creek and Beaver Creek watersheds.
- ❑ Investigate the desirability of providing and maintaining toilet facilities, specifically low impact toilets, at one or more locations in the Reserve. If deemed necessary, place toilet facilities at the most feasible location(s).

11.3 Long-term Activities:

- ❑ Determine and carry out any actions that may be suitable for habitat restoration or enhancement, and that adhere to the policy and guidelines addressed in Section 7.0 of this plan.
- ❑ Develop a design for removable, lockable barriers that are effective but minimize adverse effects to the Reserve's aesthetic qualities. Appropriate materials should be identified and located.
- ❑ When appropriate, place a lockable barrier on McCoskrie Road at the intersection with the east-side haul road, keeping motorized traffic from entering the Reserve. Keys will be given to emergency response agencies and those property owners who hold easements through District Lot 63.
- ❑ Decommission the portion of the old logging road entering the northeast corner of the Reserve from DL 59.
- ❑ Consult with the community, including the R.C.M.P and the North Galiano Volunteer Fire Department regarding public parking areas for the Reserve. Review parking requirements and develop a proposal for parking areas including one at the intersection of McCoskrie Road and the east-side haul road and one at the intersection of Laughlin Lake Trail and Vineyard Way.
- ❑ Close the parking area at the head of the Pebble Beach trail when access to this point by motorized vehicles is discontinued. Restore the impacted area to its natural condition.
- ❑ Apply for a change of Land-Use Designation for District Lot 63 from Forest to Nature Protection. All educational, research or restoration activities that do not comply with the Nature Protection Land-Use Designation should be concluded prior to the application.

Ongoing and Monitoring Actions

- ❑ Maintain emergency vehicle access routes, in cooperation with the North Galiano Fire Chief.
- ❑ Broom removal and native species seeding.
- ❑ Encourage surrounding landowners to control exotic species on their properties.
- ❑ Maintain trail standards (in the event of any serious problem, maintenance should occur promptly to address safety concerns and to prevent further damage to the trail).
- ❑ Monitor the Pebble Beach Reserve for fire hazards and any other potential threats to visitors, flora, and fauna.
- ❑ Salmonid habitat and water quality assessments in Greig and Beaver creeks will occur on an annual basis.
- ❑ Marine birds along with intertidal flora and fauna will be monitored on a seasonal basis.
- ❑ Establish Smithsonian Institute/Man and the Biosphere biodiversity monitoring plots in DL 60 and DL 63, and continue to monitor the established plots on an annual basis.
- ❑ Review the issue of unleashed dogs as necessary, so as to assess whether any conflicts with visitors, wildlife, or wildlife habitat have occurred, and take appropriate measures to ensure that visitors and the natural values of the Reserve are protected.
- ❑ Establish a volunteer aid group that will provide assistance for families with small children, the elderly, and disabled visitors who find it difficult to access the beaches and trails within the Pebble Beach Reserve. The establishment of this service will include public notification and the composition of a liability disclaimer form to be signed by all users.
- ❑ Encourage appropriate community and academic research projects within the Reserve.
- ❑ The Galiano Conservancy Association will work with other organizations (Volunteer Fire Departments, Chamber of Commerce etc.) to educate the public on the dangers of fire in the forests of Galiano.
- ❑ Work with the Galiano Elementary School, the Galiano community, the University of British Columbia, and the University of Victoria to develop educational programs and

opportunities within the Reserve.

- ❑ Encourage groups visiting the Reserve to use a minimum number of vehicles or arrange for drop-off / pick-up transportation.
- ❑ Organize volunteer work parties as needed, to remove garbage, abandoned structures, and miscellaneous items from the Reserve. Encourage visitors to take responsibility for their own and other garbage.

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