



Pacific Spirit Regional Park

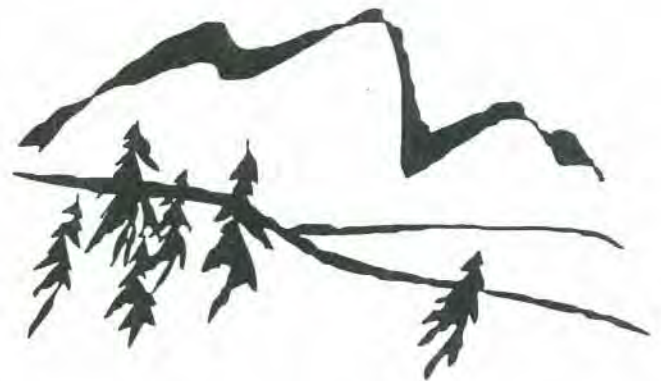
Management Plan

Pacific Spirit Regional Park Management Plan

November, 1991

Prepared by
GVRD Parks - West Area

Adopted by
GVRD Board of Directors
October 30, 1991



Greater Vancouver Regional District Parks

4330 Kingsway, Burnaby, British Columbia, Canada V5H 4G8
Telephone: 432-6350

P568 - 91 - 1



Dear Park Visitor:

Re: Pacific Spirit Regional Park - Management Plan

The Park Management Plan was adopted by the GVRD Board of Directors on 30 October 1991. On behalf of the GVRD Park Committee I am pleased to convey this document to you. The Plan outlines the policy framework for planning and operation of the Park.

There have been thousands of hours of public time contributed to this collaborative effort. We look forward to your continuing support as GVRD implements the Plan over the next five years. Implementing the many action items contained in the Plan will help assure that this magnificent Park serves its visitors well, while its natural features are carefully protected.

GVRD operates a system of Regional Parks for the benefit of all Lower Mainland residents. I hope you take the opportunity to enjoy all your Regional Parks.

Yours truly,

A handwritten signature in black ink, appearing to read 'Lou Sekora', written over a horizontal line.

Mayor Lou Sekora
Chairperson
GVRD Park Committee

PACIFIC SPIRIT REGIONAL PARK **MANAGEMENT PLAN**

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1.0 PLAN HIGHLIGHTS

Plan Purpose:

- The Management Plan is a guide by which GVRD Parks manages the resources and activities within Pacific Spirit Regional Park.

Planning Process:

- The Plan was developed through a broad public planning process. A high level of public participation was achieved through Park visitor surveys, questionnaires at open houses and public meetings. Three workshops, and two task forces, concentrated on specific issues.

Role of the Park:

- Pacific Spirit is classified a Multiple-Purpose Park, intended to support a wide variety of recreation activities and user groups within its diverse landscape of ocean beach, Fraser River Estuary, and upland forest.
- It is one of the most interesting Regional Parks in terms of interpretation, education, research, and multiple activities.
- Pacific Spirit is the third largest Regional Park and receives the third highest visitations in the regional park system.

Conservation Objective:

- The conservation objective is to retain the Park's regionally significant features in as natural a state as possible as a benefit to the environment and for recreational enjoyment, educational and scientific benefits.

Recreation Objective:

- The recreation objective is to encourage and develop resource-based recreation in harmony with the natural environment.

History:

- The Plan summarizes the interesting history of land disturbance which has contributed to the Park's vegetation diversity.

Policy Program Direction:

- GVRD is committed to sustaining the forest and foreshore ecology in as natural a state as possible.
- The management intent is to preserve the Park's significant natural features, and to conserve the Park's natural resources for the public's enjoyment, by promoting use of the Park in harmony with the natural environment.
- To accomplish this management objective, a zoning framework for the Park

has been developed and future Park amenity sites have been identified.

- The Park zoning framework proposes seven zone classifications which are:
 1. Environmental Protection Zone
 2. Environmental Restoration Zone
 3. Buffer Zone
 4. Forest Recreation Zone
 5. Forest Edge Zone
 6. Beach Zone
 7. Park Amenities Zone
- Each zone identifies the management intent, permitted visitor use, level and nature of resource management to be carried out, and the facilities or amenities permitted.
- Park amenities will be minimal, located on the periphery of the forest and on previously impacted areas. Ten possible sites are identified.

Natural Resource Management:

- Management actions being implemented or planned for the future are outlined for the Park's natural resources.
- The most sensitive natural resources are the ecological reserve, the heronry, canyons and foreshore slopes, Camosun Bog, the aspen grove, Musqueam and Cutthroat creeks, and the Fraser estuary marsh.

Recreation Opportunities and Management:

- Management actions being implemented, or that are planned for various recreational opportunities, include the establishment of pedestrian-only and multi-purpose trails for cyclists, hikers and horseback riding.
- Management of Wreck Beach and "clothing optional" boundaries on the foreshore are identified.

Visitor Facilities and Services:

- Discussion of visitor facilities and services includes trail standards, maintenance and upgrading; emergency needs and use on the beach and foreshore area; provision of picnic areas and future group campgrounds; plans for a Park Centre and interpretation and education programs; and the Volunteers-in-Parks (VIP) program.

Development Program:

- The proposed Park development program for the short term (1-5 years) is outlined, including discussion of past developments.

2.0 INTRODUCTION

2.1 Plan Purpose

The Management Plan is a document that guides the Greater Vancouver Regional District's (GVRD) Parks Department in managing the resources and activities within Pacific Spirit Regional Park. It expresses GVRD Parks Policy. It is also a public document informing the public of the unique features and opportunities which are available to be enjoyed as well as reasons for the degree of resource protection within the Park.

The Plan outlines the role and purpose of the Park within the Greater Vancouver Regional Parks system. It defines the policies and directions for development and resource management envisaged over the long term. It also provides short-term (5-year) direction and action for visitor use, Park development, programs, operations and maintenance.

The Plan is a framework within which subsequent management, detailed planning and implementation will take place.

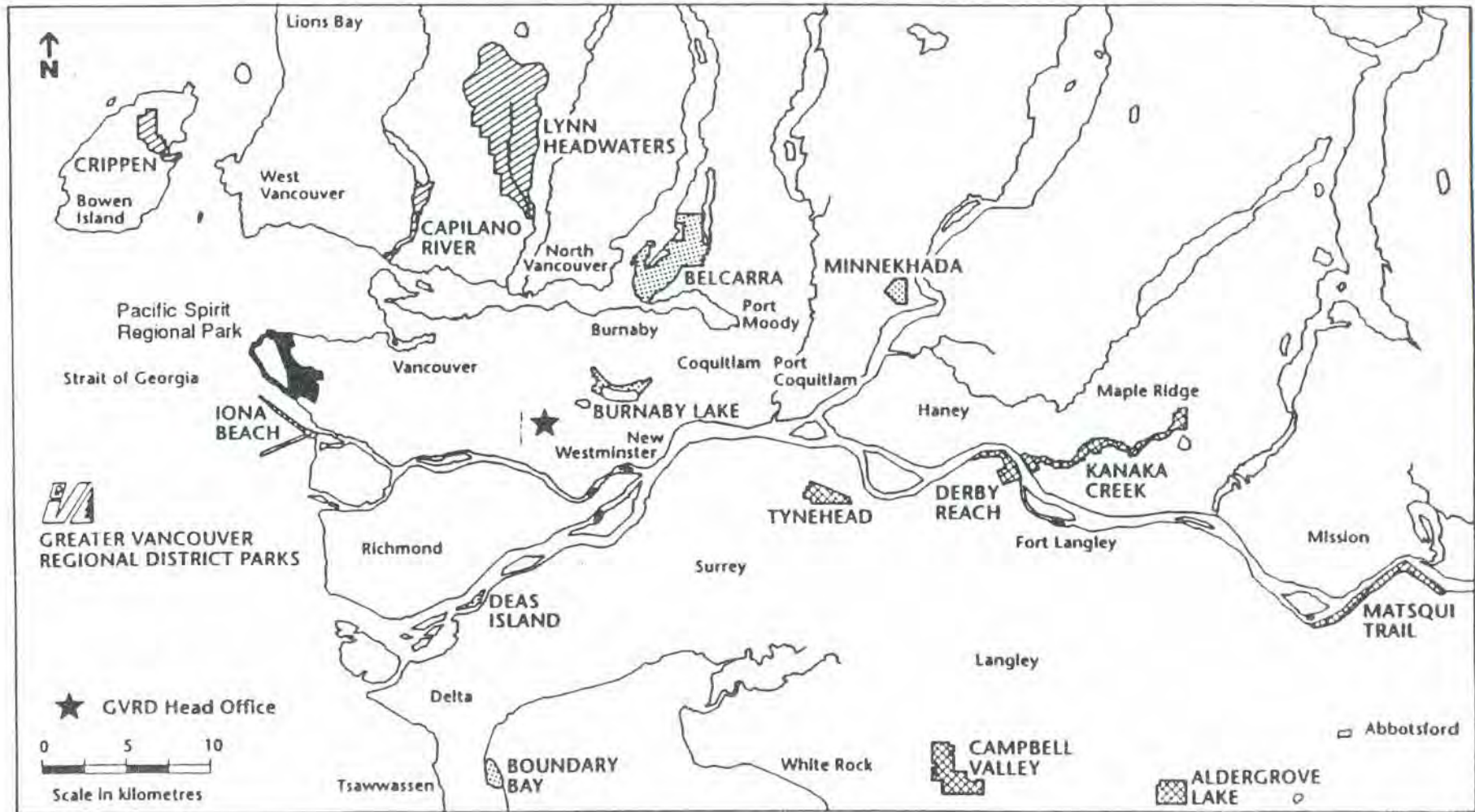
2.2 Planning Process

In 1980 the GVRD prepared a report for the Minister of Lands, Parks and Housing. The report, A Regional Park for the Endowment Lands was developed with significant public input and considerable help from interest groups, especially the Endowment Lands Regional Park Committee. The 1980 Report forms much of the basis of the Management Plan. The area was dedicated as a Park in April 1989 and work on the Management Plan started in February 1990.

The Management Plan was developed through an open planning process with the public and with detailed input from a number of interest groups and individuals. The process focussed discussions and analyses on problems to be resolved and resources and opportunities to be protected or enhanced. A high level of public participation was achieved through Park visitor surveys, questionnaires at open houses and public meetings, three workshops and two task forces concentrating on specific issues.

Key steps in the public consultation process were: (see Appendix i for process and schedule)

1. Starting the process with an Open House to present background information and have the public assist in setting objectives, statement of principles, process guidelines, starting premises, and begin listing issues.
2. Meetings and discussions with various interest groups to determine their needs and concerns and provide them with an understanding of GVRD's policies, management and philosophy.
3. Three workshops to draft the type, character and degree of resource protection for the Park. This resulted in a zoning framework.
4. A Trail Task Force to assist in defining multiple versus single (pedestrian) trail-use and standards.
5. A Task Force on the Foreshore Unit of the Park to resolve issues specific to Wreck Beach.
6. A newsletter sent out every three months to keep individuals informed on the planning process and the schedule of open houses and public meetings.
7. Two public meetings to present information and to obtain direct input from the public by way of questions and answers periods, and through questionnaires.



Regional Context Map

Figure 1

3.0 ROLE OF THE PARK

3.1 Regional Context

Pacific Spirit Regional Park (PSRP), officially dedicated 23 April 1989, is one of sixteen Regional Parks in the GVRD. It is located on Point Grey within Electoral Area A (University Endowment Lands, UEL).

The well-forested parklands surround the University of British Columbia and borders on residential areas of the City of Vancouver, and UEL, and the Musqueam Indian Reserve. The Park's south western boundary is the Fraser River North Arm, and its north west edge is on the Strait of Georgia (Pacific Ocean).

The Park's 763 hectares (1,885 acres) is the third largest Regional Park, after Lynn Headwaters and Belcarra. Pacific Spirit contributes significantly to the green spaces of the Greater Vancouver metropolitan area. It provides a variety of recreation opportunities within easy access to the 1.5 million residents of the Lower Mainland. 1989 visitor use estimates for Pacific Spirit exceeded 300,000 visitors. This makes it the third highest visited park in the Regional Park system after Capilano and Belcarra. It is therefore important to manage the recreational use in harmony with the natural resources.

Within the GVRD's system of Regional Parks, Pacific Spirit is classified as a multiple-purpose park (Greater Vancouver Regional District 1985). It is intended to support a wide variety of recreation activities and user groups within its diverse landscape of ocean beach, Fraser River Estuary and upland forest. Its biophysical diversity and history of land use makes Pacific Spirit one of the most interesting Regional Parks for interpretation, education, research, and multiple activities.

3.2 Conservation Objective

Pacific Spirit Regional Park contains a number of environmentally sensitive areas which support rare plants and animal species. Examples of these significant natural features are listed below and further detailed in Section 7.0.

- An Ecological Reserve, one of 132 in British Columbia, was dedicated by provincial legislation prior to the area being established as a Park.
- A Heronry, the largest in British Columbia, supports over 100 nesting pairs of Great Blue Heron.
- Camosun Bog is the oldest *Sphagnum* bog in the Lower Mainland. It was formed after the retreat of the last glacier, some 10,000 years ago.
- Small streams drain the upland forest and flow to the North Arm of the Fraser River, support resident cutthroat trout. The lower section of Musqueam Creek (outside the Park) is one of the last salmon streams in the City of Vancouver. The headwaters of this stream originate in the Park.
- The marsh area on the Fraser River is a depleted resource within the Fraser's estuary. This is important fish and wildlife habitat.
- Ocean beach, rocky in places, adds diversity to the Park environment and is a unique wilderness setting minutes from downtown Vancouver.
- The forested area of the Park combines fine examples of early successional alder and aspen stands with well-established second-growth conifers. Remnants of old-growth Douglas fir forest exist in certain areas of the foreshore. Often referred to as an "urban forest", the forested area is subject to the many impacts of urban development and use.

In keeping with the GVRD Parks mandate the conservation objective is to retain these regionally significant features in a natural state as possible as a benefit to the environment and for recreational enjoyment, educational and scientific benefits.

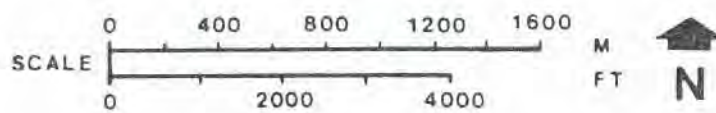
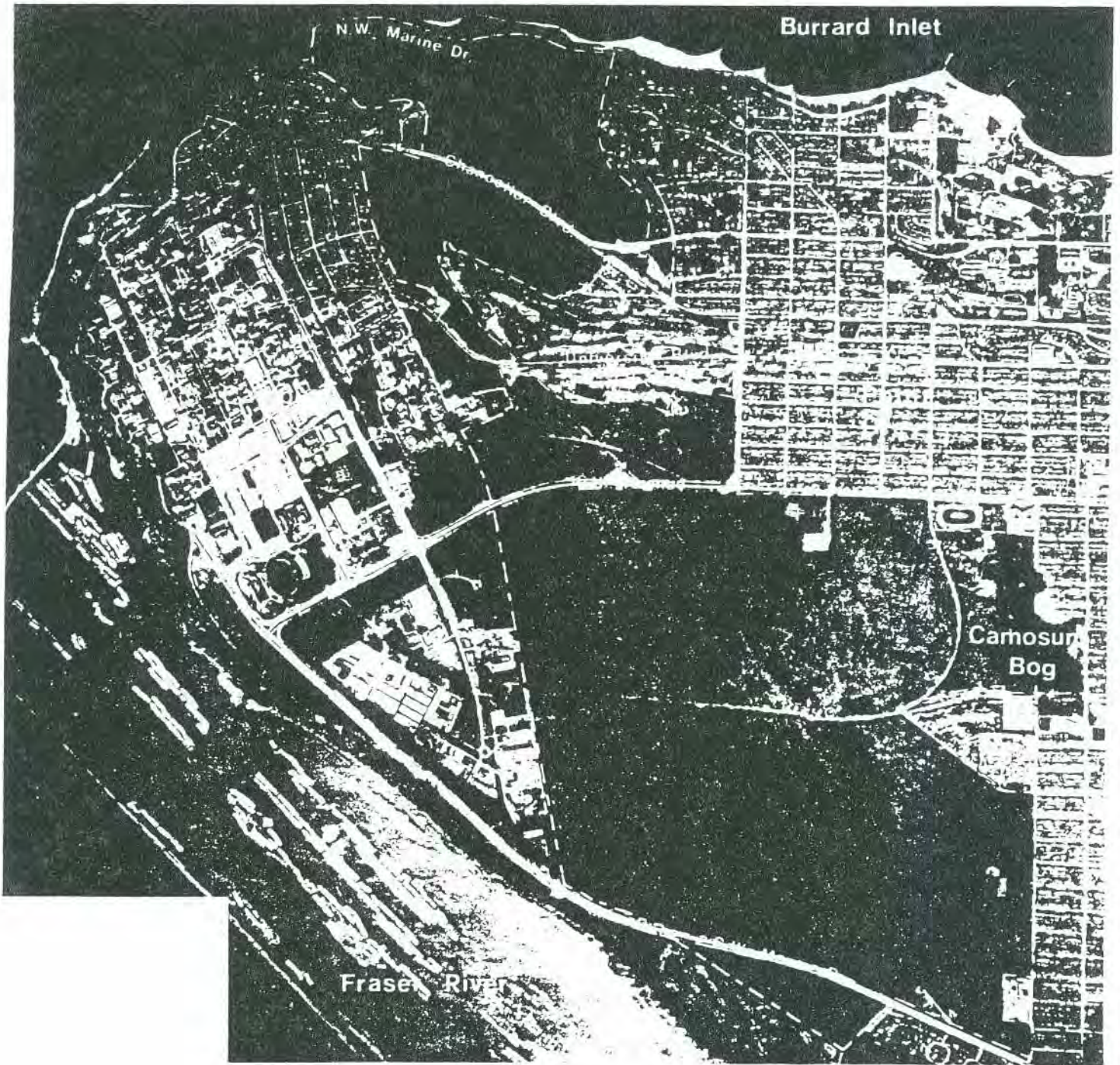
3.3 Recreation Objective

The main recreation pursuits in this multiple purpose Park are walking, jogging, cycling and horseback riding on approximately 50 kilometers of existing trails. The combination of a complex of trail network, heavy use and environmental sensitive areas provides a management challenge that will be on-going as detailed resolution is implemented.

A second major component, although far more seasonal than trail use, is beach use and recreation opportunities afforded by the secluded natural state of the foreshore. Much of the Park foreshore has a "clothing optional" status. Known as Wreck Beach, it has its own unique social character and management concerns.

Park interpretation and education are activities that fit well with the environmental diversity and conservation mandate of the Park. Pacific Spirit Regional Park will, in the long term, play an important role within the GVRD Park System in terms of park interpretation, awareness, and environmental education.

In keeping with GVRD Park policy, the recreation objective is to encourage and develop resource-based recreation in harmony with the natural environment. GVRD is committed to working with user and interest groups to ensure safe, enjoyable use of the Park.



Location of Pacific Spirit Regional Park
on the Point Grey Peninsula

4.0 BIOPHYSICAL FEATURES

The following description of topography drainage, soils and vegetation are summarized from Rida (1988).

4.1 Topography

Pacific Spirit Regional Park is located on a gently rounded, undulating plateau which attains its maximum elevation of about 130 metres (425 feet) above sea level approximately along University Boulevard. The land slopes gradually down to the north to about 61 metres (200 feet) above sea level and to the south to about 49 metres (160 feet), where it comes to an abrupt edge with the formation of steep cliffs and gullies. The slope over most of the Park is gentle, averaging five to ten percent, with up to fifteen percent in a few places.

4.2 Drainage

The Park receives about 1,257.7 millimetres (49.5 inches) of rain annually, and what is not absorbed by vegetation or the soil results in surface run-off. Three creeks running north-south in shallow depressions drain the southern portion of the Park, and three deeply eroded ravines which bisect the peninsula north of Chancellor Boulevard, cutting approximately 750 metres (2,461 feet) in a south-easterly direction inland, drain the northern portion of the upland forest. Surface run-off fluctuates quite drastically. Often, there is not enough surface run-off to keep the streams flowing year-round. The creeks are therefore seasonal and dry up in summer months when rainfall is low. The northern ravines are deeply incised due to high flows of run-off during winter rainstorms, indicating a limited capacity for groundwater storage in this area.

4.3 Soils

The parent soil of the Park is a relatively thin layer of glacial and marine sands and gravels, from 0.3 to 1.5 meters (one to five feet) thick, overlying a thick, hard, compact and highly impermeable layer of glacio-marine till. Three different types of soils have developed from the parent material, largely as a result of variations in drainage and topography (which affects drainage). Soils of the Podzolic Order, the most common on the Park, have developed where drainage is generally good, in coarse-textured, sandy parent material which drains well. These podzols are highly leached, since minerals and organic matter have been removed by water percolating through the soil. These soils are acidic, and support coniferous or mixed coniferous-deciduous forests. Soils of the Gleysolic Order have formed in flat areas, seepage areas, or depressions which are poorly drained with a nearly impervious underlay. This results in a seasonally fluctuating, perched water table and saturated soil. Thus, these soils indicate seepage and wet spots, common in the southern portions of the Park. With less leaching than podzols, gelysols have a higher content of organic matter and higher fertility than podzolic soils. Western red cedar, Sitka spruce and skunk cabbage are common on, but not exclusively limited to, gleysolic soils. Red alder and vine maple are also found.

Organic soils make up the third type of soil found on the Park, consisting mainly (at least thirty percent) of unleached organic matter such as black muck and fibrous peat. These soils are found in two places, Camosun Bog, and an area due southeast of the golf course. Drainage in these depressions is poor and the water table remains at or near the surface for most of the year, limiting organic matter decomposition and resulting in high acidity. Only plants which can tolerate such wet, organically rich and acidic conditions can grow on these soils, such as shore pine, Labrador tea, spirea, blueberry, and *Sphagnum* moss. In some parts of Camosun Bog, *Sphagnum* moss has decayed over thousands of years to produce an organic layer up to 7.6 metres (twenty five feet) deep (Pearson 1983).

4.4 Vegetation

The vegetation of Pacific Spirit Regional Park is one of its most attractive features. Rather than being composed of a single vegetation association, the Park has a diversity of vegetation types that provides numerous habitat types for wildlife, aesthetic diversity, and a variety of forest settings for recreational and educational experiences. One of the most important factors which has determined the present character of the Park forest is its history of site disturbance and land uses, in conjunction with the natural effects on plant distribution, such as climate, topography, soil moisture, and soil type. What was once a relatively uniform climax coniferous forest composed of mature Douglas-fir, western hemlock, and western red cedar, with some Sitka spruce and grand fir, is now a mosaic of vegetation communities, with many more tree and shrub species, that reflect past disturbances to the forest, and represent communities in various stages of natural succession. The Park now contains small, abandoned pasture land, deciduous forest, mixed coniferous-deciduous forest, young and mature coniferous forest, as well as a peat bog.

The most recent and comprehensive survey of vegetation types within the Park (excluding the foreshore) was carried out in 1983 - 1984 and documented by Thompson (1985). Twenty different vegetation associations were delineated, based on distinctive combinations of trees and/or shrub and herb species and associated soil and site characteristics. These are listed in Table 1 and shown on Figures 3 and 4.

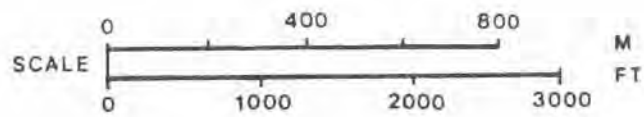
TABLE 1

Vegetation Associations of Pacific Spirit Regional Park (Thompson, 1985)

<u>Association</u>	<u>Title</u>	<u>Area (ha)</u>	<u>Percent</u>
1	Hardhack - Salmonberry - Fireweed	30.9	4.3
2	Red Alder - Salmonberry	74.6	10.2
3	Bitter Cherry - Willow - Trailing Blackberry	20.9	2.9
4	Bigleaf Maple - Spiny Wood Fern	27.7	3.8
5	Cascara - Mountain Ash - Deer Fern	4.6	0.6
6	Vine Maple - Red Elderberry	97.5	13.4
7	Red Alder - Western Red Cedar - Red Huckleberry	109.7	15.0
8	Douglas-fir - Bracken - <i>Stokesiella oregana</i> *	5.9	0.8
9	Douglas-fir - Salal - <i>Plagiothecium undulatum</i>	135.9	18.6
10	Western hemlock - <i>Mnium glabrescens</i>	62.1	8.5
11	Western Red Cedar - English Holly	46.6	6.4
12	Western hemlock - Douglas-fir - <i>Stokesiella praelonga</i>	23.4	3.2
13	Western Red Cedar - Western hemlock - Sitka Spruce	68.4	9.4
14	Pacific Crabapple - Hardhack - False Lily-of-the-Valley - Skunk Cabbage	1.0	0.1
15	Shore Pine - White Birch - Western hemlock - Salal	0.9	0.1
16	Western hemlock - Salmonberry	6.4	0.9
17	Western hemlock - Red Huckleberry - <i>Plagiothecium undulatum</i>	11.2	1.5
18	Western hemlock - Salal - Labrador Tea	0.8	0.1
19	Pond Association	0.9	0.1
20	Salal - Labrador Tea - Bracken - False Lily-of-the-Valley	0.2	0.03
		729.6	100.0

* Scientific names are used for mosses.

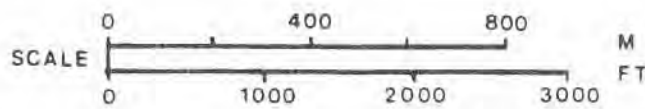
VEGETATION COMPOSITE MAP - NORTH



(From Thompson, 1985)

Figure 3

VEGETATION COMPOSITE MAP - SOUTH



4.5 Wildlife

The extensive biophysical diversity of the Park contributes to a diversity of wildlife species in the Park. The most recent and comprehensive species list and distribution mapping was completed by David M.G. Newell in 1983. The list contains 113 bird species, 33 mammals, 6 amphibians, and 4 reptiles. See Appendix iv for complete list. More detailed wildlife information is given in Section 7.11.



5.0 HISTORIC BACKGROUND

5.1 General History

The Colonial Government recognized the Point Grey Peninsula as strategically important for defence purposes. Military use of the area continued past World War II.

By 1865 the monetary value of Point Grey timber was recognized. Essentially all of today's Park was selectively logged, which was typical of the pre-steam era. Many trees were left standing which accounts for some of the larger trees found in the Park today. The use of log chutes over the Point Grey cliffs caused additional erosion of these unstable slopes, as logs were moved to the water's edge and onto sawmills in Burrard Inlet.

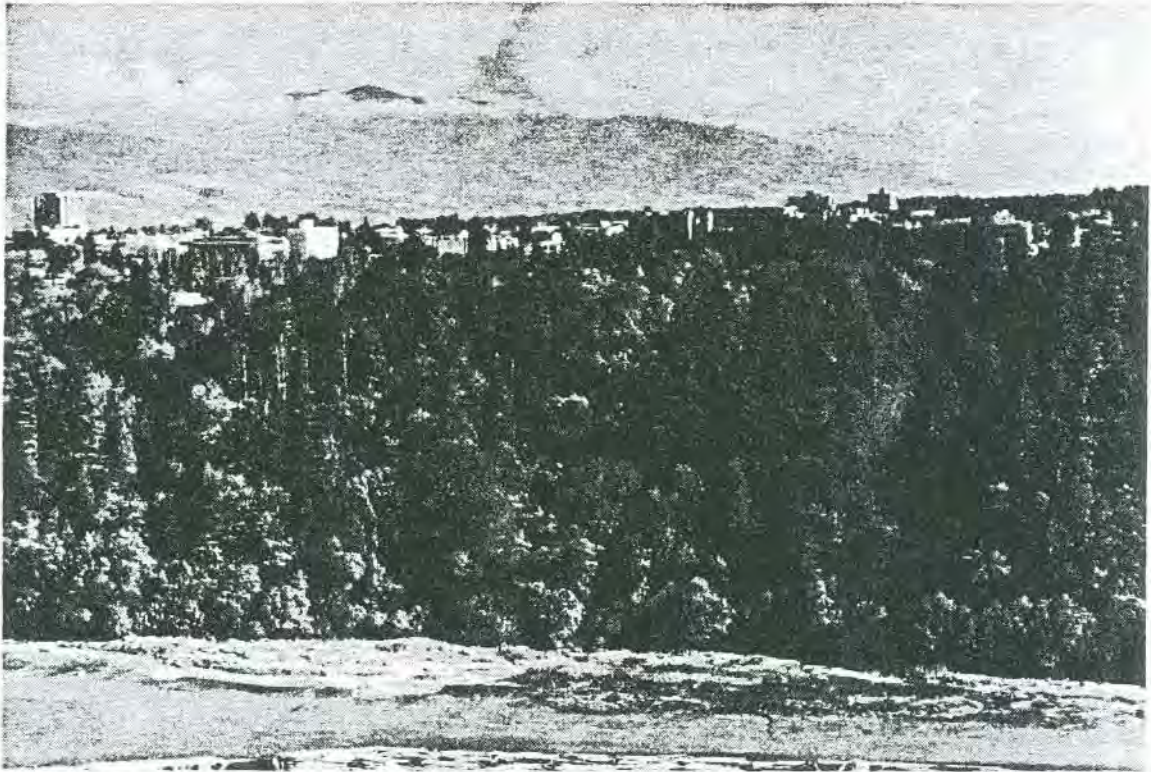
Logging continued into the early 20th century. From 1912 to 1923 the Provincial Forest Branch issued 65 timber sale licenses for today's Park area. The Forest Branch was not concerned with re-establishing a new forest crop as many logged areas were designated for residential development, but it was concerned with keeping slash to a minimum to prevent forest fires.

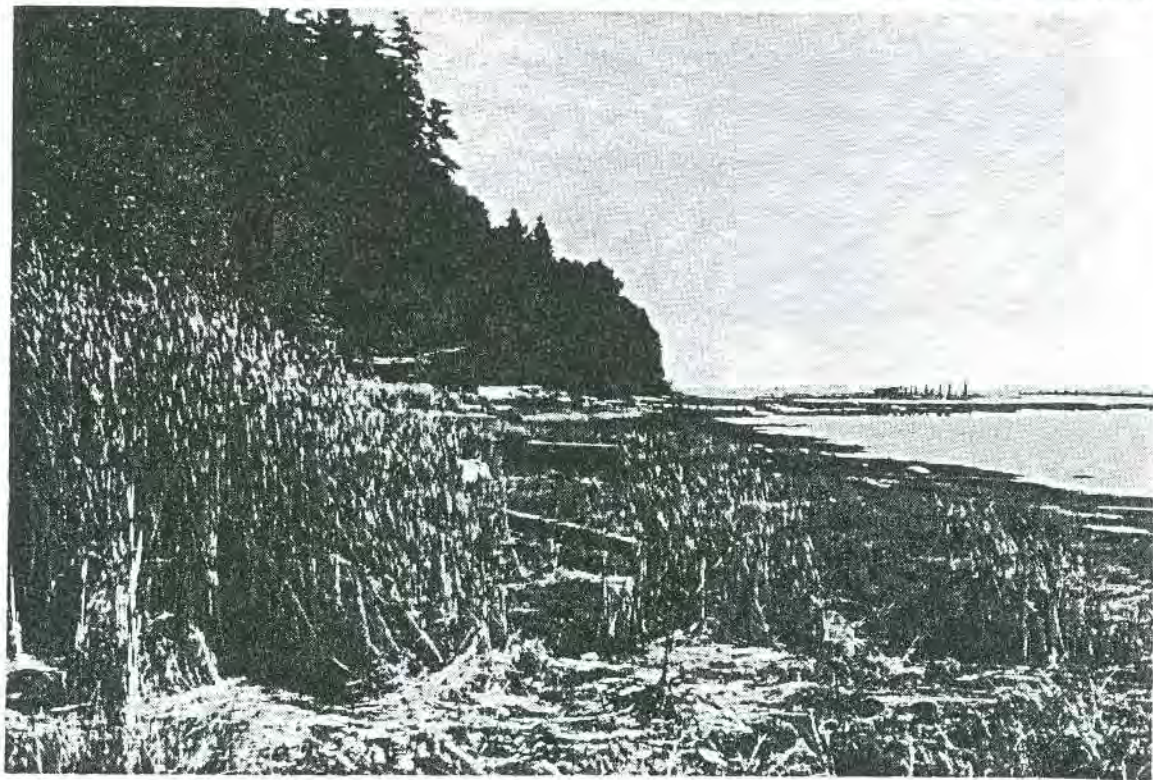
Many loggers were squatters, living illegally on Point Grey government lands. One temporary, small scale dairy farm was established and this formed the grass opening known as the Plains of Abraham.

By the 1930's residents in the vicinity of the Endowment Lands began to use the area for recreational purposes: scout groups camped in the woods and horseback riders travelled over the old skid trails. In the early 1950's the area between Chancellor Boulevard and Spanish Banks was cleared for a new subdivision but this was never built. With rapid loss of urban green spaces, many people began to feel very strongly about the preservation of these forests which had been left to regenerate by chance. By 1989, the long battle of preserving the Endowment Lands natural resources was finally won and the area was officially designated a regional park under the GVRD (Kahrer 1991, unpublished).

5.2 Musqueam Land Claim

The Musqueam Band has a land claim against all of the parkland. This is one of the many land claims the Federal and Provincial Governments have to deal with. A court order states that the transfer of the UEL to GVRD for park purposes does not prejudice the Musqueam's land claim. The GVRD keeps the Musqueam Band informed of all Park development.





6.0 POLICY PROGRAM DIRECTION

6.1 General

Since the GVRD acquired the Endowment Lands as Pacific Spirit Regional Park, most Park users and participants in the planning process have argued for environmental preservation and conservation, wanting very little change to the urban forest.

GVRD is committed to sustaining the forest and foreshore ecology in as natural a state as possible. It is recognized that the area can not be classified as "wilderness". It has been highly impacted in the past and may be further impacted by the pressures of recreation demand. Therefore, the natural resources and recreation activities must be managed.

The management intent is to preserve the Park's significant natural and cultural features, and to conserve the natural resources for public enjoyment by promoting use of the Park in harmony with the natural environment. To this end, a zoning framework for the Park has been developed and future Park amenity sites have been identified. Amenities will be minimal, located on the periphery of the forest and on previously impacted areas.

6.2 Zoning

The Park zoning framework will assist in achieving the following management goals:

- preserve unique natural and cultural areas
- protect and, where necessary, restore significant natural features
- sustain diversity and visual attractiveness of the forest and foreshore
- provide safe recreational use of the Park
- accommodate Park amenities to serve the Regional Park user

Seven zones have been established and comprise the following areas (See Figure 5):

1. Environmental Protection Zone

Provides highest level of protection for the following areas:

- Ecological Reserve
- Heronry
- Canyon slopes north of Chancellor Boulevard
- Steep slopes surrounding the foreshore
- Fraser River marsh (from the Booming Ground Trail) to the Park boundary at the Musqueam Reserve)

2. Environmental Restoration Zone

Preserves and allows restoration of the following areas:

- Camosun Bog
- Aspen Grove
- Stream beds and edges
- Fraser River marsh (from the Booming Ground Trail to the trail from the Fraser Historic Monument)

3. Buffer Zone

Provides protective edges around upland areas designated Environmental Protection or Restoration Zones (minimum width 75 metres) and includes the Fraser River marsh from the Fraser Historic Monument Trail to the breakwater on the Fraser River North Arm.

4. Forest Recreation Zone

Allows recreation in harmony with the natural resources and includes the major forested area of the Park containing the trail network, which provides various recreation opportunities.

5. Forest Edge Zone

Provides safe, aesthetic interface with urban development and includes all the forest edge of the Park interfacing with streets, housing and other urban development.

6. Beach Zone

Allows safe, environmentally sound beach activity in a natural setting. It includes the rock and sand area contained between high water mark and the toe of the foreshore slopes, extending from the Park boundary at Spanish Banks West around to the breakwater on the Fraser River North Arm.

7. Park Amenities Zone

Accommodates Park development of visitor facilities and amenities on previously impacted or environmentally altered sites.

Table 2, Summary of Zone Use and Management, defines the intent of the seven zones and indicates the visitor use, resource management and facilities permitted for each zone.

6.3 Park Amenity Sites

Ten sites, previously impacted or environmentally altered, have been selected where various Park amenities could be located. These are listed in Table 3.

PACIFIC SPIRIT
REGIONAL PARK

PARK ZONES

SPECIFIC LOCATION

- A. ECOLOGICAL RESERVE
- B. HERONRY
- C. STREAMS
- D. ASPEN GROVE

LEGEND OF ZONES

-  ENVIRONMENTAL PROTECTION ZONE
-  ENVIRONMENTAL RESTORATION ZONE
-  BUFFER ZONE
-  FOREST RECREATION ZONE
-  FOREST EDGE ZONE
-  BEACH ZONE
-  PARK AMENITIES

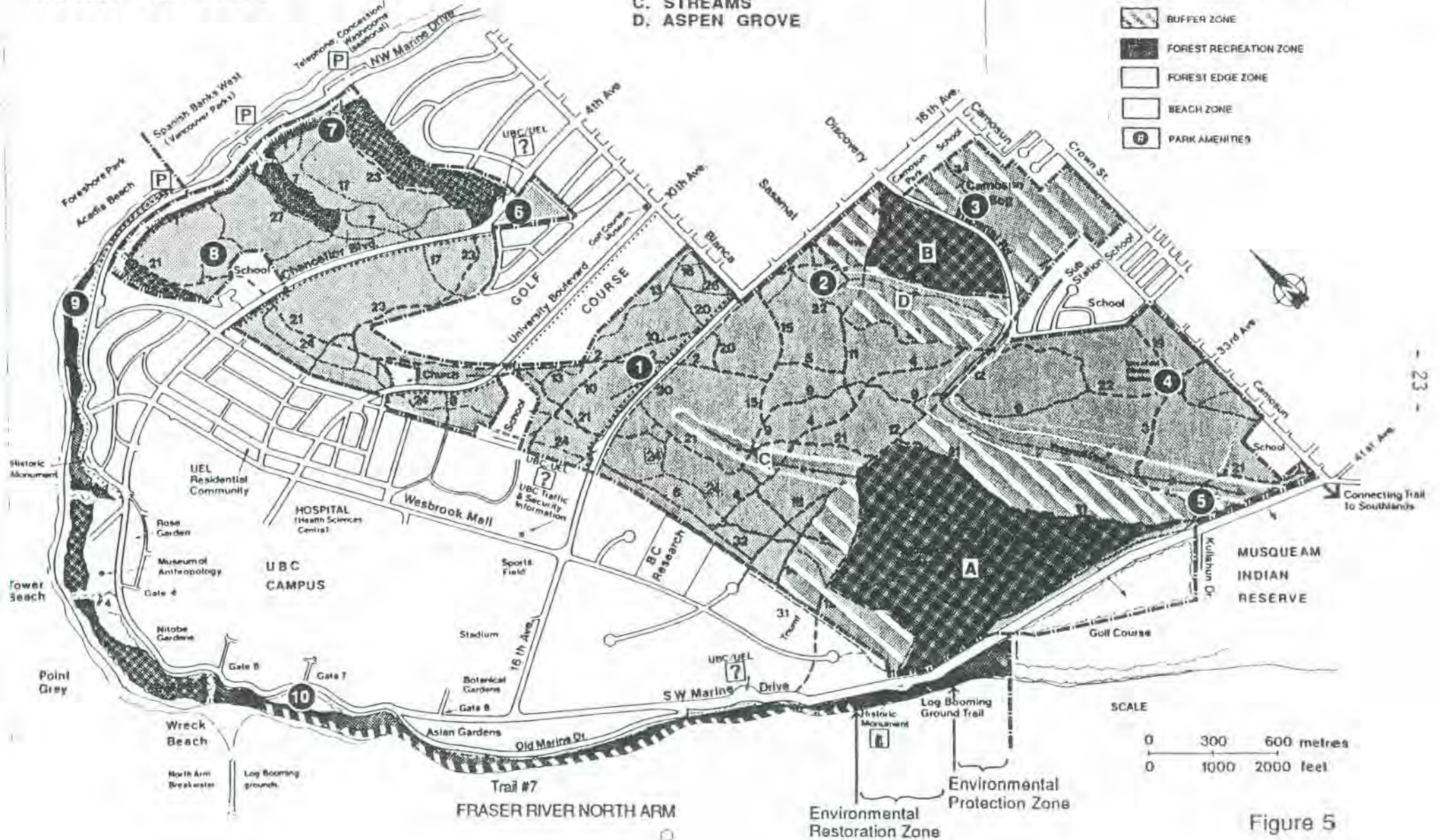


Figure 5

TABLE 2
SUMMARY OF ZONE USE AND MANAGEMENT

ZONE	INTENT	VISITOR USE	RESOURCE MANAGEMENT	FACILITIES	PARK AREA
Environmental Protection	Highest level of preservation	Strictly controlled. Access prohibited except for approved research projects and interpretation programs.	To ensure preservation of natural features and processes, except for fire, erosion and dangerous trees. Unofficial trails to be rehabilitated.	None, except for pedestrian trails to access beach zone.	<ul style="list-style-type: none"> • Ecological Reserve • Heronry • Canyon Slopes • Steep slopes on foreshore • Fraser River marsh (east end)
Environmental Restoration	Preserve or restore significant natural features	Limited to on-trail use. Education and interpretation is primary use.	To ensure preservation of natural features and restore to natural characteristics only after extensive research and approved restoration guidelines. Unofficial trails to be rehabilitated.	None, except for trails and interpretive signs.	<ul style="list-style-type: none"> • Camosun Bog • Aspen Grove • Stream beds and edges. • Fraser River marsh (east end)
Buffer Area	Transition between areas requiring high level of preservation and areas supporting recreation.	Limited to trails passing through this zone.	Forest Management to ensure thick impenetrable understory. Unofficial trails to be rehabilitated.	None, except for existing trails.	<ul style="list-style-type: none"> • Protective edges around Environmental Protection and Restoration Zones • Fraser River marsh (west end).
Forest Recreation	Recreation in harmony with natural resources	Extensive trail (day) use for walking, jogging, cycling, horseback riding, and interpretive programs.	Maintain and restore present character of mixed forest. Management activities are visually insignificant.	Trailheads, multiple and single and use trails, directional and interpretive signage.	Major forested area containing trail network.
Forest Edge	Safe, aesthetic interface with urban development.	High use along forest interfacing with streets.	Maintenance to enhance positive elements of the park, such as views and urban streetscapes, but should appear natural.	Trailhead development, shoulder parking (as required) and perimeter trail.	Forested edge interfacing with streets, housing, etc.
Beach	Safe, environmentally sound beach activity in a natural setting	High use, primarily sunbathing and some swimming.	Preserve and enhance natural elements, such as sand beach and intertidal area.	Trailhead development; may include sanitary facilities.	Area between high water mark and toe of slope from Park boundary (Acadia end) to breakwater
Park Amenities	To accommodate park development of visitor facilities	High use areas for picnic group camping, Park Centre, etc.	Confine to previously impacted sites.	Roads, parking lots, picnic areas, group campground, Park Centre, maintenance yard, other public services.	Previously impacted or environmentally altered sites.

TABLE 3
PARK AMENITY SITES

<u>Park Amenity Sites</u>	<u>Possible Amenities at Each Site</u>
Site #1 Clay mound north of 16th Ave. at Cleveland Way (adjacent to temporary Visitor Centre)	Permanent Park Centre and offices
Site #2 GVWD Reservoir	<ul style="list-style-type: none"> • Landscape to blend into natural surrounding and leave as open space for special events • Tennis courts • Board games (eg. shuffleboard)
Site #3 Clay fill area on the edge of Camosun Bog	<ul style="list-style-type: none"> • Initially landing site for tree extraction from Bog. • Main entrance to Bog with parking/drop off area, toilets and picnic tables
Site #4 Open grass area, which is the remains of old Clinton Stables	Picnic area or primitive group camping area for organizations such as Scouts, Guides, etc.
Site #5 Old Highways construction yard north of SW Marine almost opposite Kullahun Drive	Major trailhead entrance with parking, horse unloading area, toilet facilities and trailhead signage
Site #6 Triangular piece of land north of old Chancellor Boulevard	Open grass area - lease to UEL Administration for Community Park.
Site #7 Open grass area known as "Plains of Abraham". Old site of Stuart farmstead	Picnic area or primitive group camping area for organizations such as Scouts, Guides, etc.
Site #8 Young Alder stand north of University Hill Elementary School	Arboretum or possible group picnic area or group campground
Site #9 Existing mowed grass area along NW Marine Drive	Small picnic area
Site #10 Existing parking lot and mowed grass area opposite Totem Residence	Picnic area and visitor amenities that could take advantage of the parking and services (water, sewer, etc.) available in the area

7.0 NATURAL RESOURCE MANAGEMENT

7.1 Ecological Reserve

The 89.45-hectare (221-acre) Ecological Reserve was established by Provincial Order in Council 3828, 19 December 1975. It is part of a system of worldwide ecological reserves and is one of 132 in British Columbia. Management of the Reserve is unique. With the transfer of lands from the Crown, GVRD was also granted administration and management responsibilities.

The purpose of this Ecological Reserve (#74) is the preservation of second-growth forest ecosystems in a location of high demand by university educators and researchers. Originally herons used to nest in the Ecological Reserve, but have since moved to another location within the Park.

The Ecological Reserve is placed in the Park's Environmental Protection Zone to ensure the highest level of preservation. Access to the area is therefore strictly controlled. Special use permits issued by GVRD will be required for research and educational projects.

Two Wardens will be appointed to monitor the Ecological Reserve. Signs have been posted around the boundary. Jump Trail, which was constructed across the west corner of the Reserve, has now been closed. Unofficial trails in the area will be closed and allowed to rehabilitate naturally.

A number of interest groups, supported by the UBC Technical Committee, have requested that the Ecological Reserve be named the "Frank Buck Ecological Reserve". Frank Buck was a professor at UBC from 1920 to 1949. He had many interests, especially relating to the plants and landscaping, and left his mark on the UBC Campus landscape. An area around the Ecological Reserve was once named Frank Buck Memorial Park, but the park was never officially dedicated and the area is now part of Pacific Spirit Regional Park. GVRD will further investigate the naming of the Ecological Reserve.

Action

- Comply with the Ecological Reserve Act guidelines and consult with B.C. Parks on management strategies.
- Manage the Ecological Reserve, post and maintain signs and close all trails.
- Monitor use and special research and educational projects in the Ecological Reserve. Special use permit applications will be available from GVRD Parks, West Area office or GVRD Head Office in Burnaby.
- Make interpretation and awareness of the Ecological Reserve part of Pacific Spirit Regional Park Interpretive programs, but will be conducted off-site or along the edges of the Ecological Reserve.

7.2 Heronry

A large nesting colony of Great Blue Herons (*Arden herodius*) exists just west of Imperial Road. Up to 150 nesting pairs have been recorded in this area. This is the largest heronry in B.C. A larger one, with up to 300 nesting pairs, exists in Point Roberts, Washington.

The Canadian Wildlife Service (CWS) has been studying this colony since 1977. At that time the birds were nesting in the Ecological Reserve, but they moved to their present location in 1979. Since 1983, annual testing of eggs for dioxin, and other chlorinated hydrocarbon residues, and closer monitoring of the nests have taken place. Dioxin levels have increased over the years, which indicates the food chain is being contaminated. The herons mainly feed in the Fraser River North Arm and on the tidal flats at Iona Island. Additional studies indicate that overflights of aircraft, especially helicopters, are disturbing the nesting birds. GVRD and CWS will discuss this problem with Transport Canada.

The colony is comparatively stable, producing approximately 1.8 - 2.7 fledglings per active nest per year. CWS staff consider that 2.0 fledglings per nest are required to sustain the colony in the long term. The birds may abandon their nest if disturbed. Abandonment of nests is most likely to occur during egg laying and incubation (early March to late May) and

could have a disastrous effect on the colony's sustainability. If continually disturbed the birds may move to a new site. To have the colony move from the Park to an unprotected area could have disastrous effects.

The forested area containing the colony is therefore zoned Environmental Protection to ensure the highest level of protection. Access to the area will be strictly controlled and only allowed by Special Use Permit issued by GVRD, or by being accompanied by a Park Interpreter or Canadian Wildlife Service staff.

Action:

- Strictly control entry and use of the Heron nesting area, using patrols as necessary and especially during March through May.
- Ensure that awareness of the sensitivity of the heronry are part of the Park's interpretation programs.
- Assist the Canadian Wildlife Service in monitoring programs and research projects regarding the heronry.
- Liaise with Transport Canada concerning overflights of aircraft.

7.3 Canyons and Foreshore Slopes

The canyons north of Chancellor Boulevard and the steep slopes around the Park Foreshore are significant geological formations, but are highly susceptible to erosion. Many factors, such as disturbance of natural drainage/seepage patterns, removal of vegetative cover, human activity, etc., contribute to erosion on these slopes. The highest level of environmental protection is therefore given to these areas by placing them under the Environmental Protection Zone.

Vegetation on the slopes is important to control erosion. To ensure a vegetative cover is maintained, slopes will be planted with a variety of indigenous species and successional forest growth will be encouraged. However, trees posing a danger to trail users or that are about to topple and pull the embankments will be cut to a safe height.

Protection of the forest from fire is important. No fires on the beach will be allowed and, in the long term, fire hydrants could be added to the UBC system along Marine Drive to provide a water supply for fire fighting along the foreshore slopes. To assist in protecting the canyon areas, fire routes on Salish and Pioneer Trails will be established (see Section 9.3 Trails).

Natural factors can also cause erosion. Evidence exists of trees blowing down and their roots pulling out large sections of the slope. Wave action erodes the toe of the slopes around the foreshore. In places, erosion control measures will have to take place to protect facilities at the top of the slopes. Several studies concerning foreshore erosion have been conducted. Prior to any work taking place these studies must be reviewed, updated and an acceptable course of action established. The public, especially beach users, must be kept informed and have input to any course of action.

Action:

- Consult with UBC Campus Planning and other agencies concerned with slope erosion on the foreshore.
- Evaluate erosion control measures when initiated by other agencies. Evaluation and any course of action will be determined with full public participation.
- Monitor canyon and foreshore slope for impacts by park visitors and, where necessary, scatter trails will be closed and rehabilitated by forest underplanting.
- Work with the Wreck Beach Preservation Society (WBPS) and beach users to ensure Park users become aware of the importance of slope stability.
- Develop a program of planting slopes with indigenous species, as part of the Park maintenance procedure.
- Investigate the feasibility, including costs and cost sharing, of additional fire hydrants along Marine Drive and in the long term install hydrants to assist in fire fighting on foreshore slopes.

7.4 Camosun Bog

An area of approximately 15 hectares (36 acres) to the east of Imperial Road is all that remains of Camosun Bog. It is the oldest bog in the Lower Mainland. It started from a sedge marsh after the last Ice Age 10,000 years ago and evolved into a bog some 2,000 years ago.

It is a unique example of a bog within a forest within a city. It has been adversely impacted by urban development. Construction of streets, houses and storm sewer lines have lowered the Bog's natural water levels, especially in summer (Piteau 1990). Filling the edges of the Bog has not only reduced its original size, but has added unwanted nutrients. Drying of the Bog and the addition of nutrients have allowed hemlock trees and other non-bog plants to grow and shade out the bog species. The Bog cannot sustain itself under present conditions (Pearson 1985).

GVRD is committed to trying to restore Camosun Bog. Technical information is provided by the UBC Technical Committee and by various studies on the Bog. The Vancouver Natural History Society (VHNS) is providing base-line data and monitoring and has received Environmental Partners funding to assist in restoration work.

The following actions have already been completed:

- Hydrological engineering studies with recommendations on water levels and nutrient changes.
- Experimental water retention structures have been constructed.
- Non-bog shrubs and small trees have been removed by hand during the last two summers.
- Over 150 large hemlock trees, 6" to 18" diameter, were removed by helicopter in January 1991.
- Drive-in access off Imperial Road and walk-in access off the end of Camosun Street at 19th Avenue have been developed.
- A trail has been constructed through the Bog to connect these two access points.
- Ongoing water sampling for levels and nutrients.
- Baseline data gathering and monitoring any changes.

If the Bog plants, especially the growth of *Sphagnum* moss, responds positively to these restoration treatments, more of this work will be done. Camosun Bog has been placed in the Environmental Restoration Zone with the intent to conserve and restore this significant natural heritage. Restoration will continue under technically sound restoration guidelines along with extensive research and monitoring, and only if positive results are being achieved.

The Bog has high educational and interpretive values. A number of public tours and school programs have been successfully conducted and these programs will expand. Protection of the Bog will be achieved by limiting use to pedestrians only, allowed only on designated trails and, in places, raised boardwalks. Self-guided interpretive information will also be developed.

Action:

- VNHS will continue to provide baseline and monitoring data.
- UBC Technical Committee will continue to provide technical information and advise on the restoration process.
- Undertake the necessary steps to provide sufficient summertime water levels for bog survival and restoration. Should it prove impossible to provide such water levels, the bog restoration and interpretive programs should be reconsidered.
- Develop an interpretive trail through the Bog. All bog trails should be provided with boardwalks to prevent further damage to the spongy soils and delicate vegetation.
- Develop the Bog entrance off Imperial Road to provide a controlled vehicular loop road, toilet facility, informational and interpretive signage, and up to six picnic tables. These facilities should not be fully developed until the boardwalks have been installed.

7.5 Aspen Grove

Along Top Trail near Imperial Drive there is a grove of trembling aspen (*Populus tremuloides*). This species is native, although rare, to the Fraser Valley. There are not many specimens remaining in the Lower Mainland, most having been removed during the development of farmland along the Fraser River (Thompson 1985).

The aspen grove adds diversity and interest to the forest. Since aspen is an early successional species it will, in the long term, be shaded out and taken over by later successional species, unless managed. In 1983, a pilot project to manage the grove was implemented. Some competing red alder was removed and a few aspen trees were cut down to encourage vigorous root suckers to sprout.

The aspen grove is placed in the Environmental Restoration Zone. UBC Forestry Department will assist in providing restoration guidelines to ensure this rare grove is retained.

Action:

- Work with UBC Forestry Department to establish restoration guidelines and a work program to restore and manage the aspen grove.
- Feature the aspen grove as part of the Park's interpretive programs.

7.6 Streams - Musqueam and Cutthroat Creeks

A number of small streams flow through Pacific Spirit Regional Park. They provide environmental diversity and visual interest. Two of these streams, Musqueam Creek and Cutthroat Creek, are important fish habitat.

Musqueam Creek flows from the Greater Vancouver Water District's (GVWD) Sasamat Reservoir south through the Park. The creek is culverted under S.W. Marine Drive, flows through Vancouver's Musqueam Park and through the Musqueam Indian Reserve. It empties into the Fraser River North Arm. The section below S.W. Marine Drive is one of

the last salmon-bearing streams in the City of Vancouver and contains important spawning and rearing habitat. Similar habitat exists above the S.W. Marine Drive culvert, but the culvert is a barrier to sea-run fish. The Federal Salmon Enhancement Program (SEP) is working with the Musqueam Indian Band and a number of schools in the area to enhance fish habitat and increase fish returns to Musqueam Creek.

Both Musqueam and Cutthroat Creeks contain resident cutthroat trout (*Oncorhynchus clarki*) in pools upstream of S.W. Marine Drive. Sections of these streams often dry up in summer. The pools become warm and stagnant, low in oxygen and low in food for the resident fish. Yet the cutthroat trout manage to survive in this harsh environment (Dr Tom Northcote, UBC, personal communications 1989).

The UBC Resource Management Department has studied fish in these two streams over a number of years. GVRD Parks is working with UBC and other agencies to try to enhance the fish habitat in both streams (Fauch 1990). Thus streams are placed in the Environmental Enhancement Zone to protect and enhance them as important natural features of the Park.

To further protect the streams, the stream corridors are placed in the Buffer Zone. Riding mountain bikes in the sensitive stream areas has caused damage in the form of eroding stream banks and silting stream beds. This must be stopped. To a far lesser degree, dogs playing in the streams have also caused damage to the fish habitat. All Park users will be encouraged to stay on designated trails. This is especially important when people are crossing streams or in the vicinity of these fish-bearing streams. With stream corridors in the Buffer Zone, a protective strip of forest will buffer the streams from the recreational use permitted in the Forest Recreation Zone, which contains the majority of recreation trails.

Action:

- Work with Federal and Provincial fisheries agencies, UBC Resource Management, and the Musqueam Indian Band in an effort to protect, restore and enhance the fish habitat in the Musqueam and Cutthroat Creek systems.

- Launch a user awareness program through signage, pamphlets, interpretive programs, etc., promoting recreation in harmony with the environment, and including special emphasis on respecting the streams and fish habitat.

7.7 Fraser River Marsh

The southwest boundary of the Park is the Fraser River North Arm, which is administered by the North Fraser Harbour Commission (NFHC). The Park boundary is the mean high-tide mark and therefore most of the marsh is outside of the Park. However, since the park provides land access to the marsh area and since, over the years the area has been well used by the public, it is important that GVRD assist NFHC in managing this area. This area is therefore considered in the Park Management Plan.

The Department of Fisheries and Oceans Canada has designated the marsh as highly productive fish habitat and raparian zone.

The Fraser River Estuary Management Program (FREMP) has designated the marsh area "conservation" and beyond the marsh is designated "industrial", which allows for the largest log boom storage area in North America. The log storage area creates visual interest and emphasizes the industrial use of the river, but it also has adverse impacts on the marsh and parkland.

The Fraser River marsh is a scarce resource and must compete with industry, urban development, and recreation along the river edge. It is a fragile resource which can be easily destroyed with too much use. It therefore requires a high level of protection. It is also visually attractive, biologically interesting and a pleasant and tranquil place to visit.

The marsh, from the Musqueam Reserve boundary to the Booming Ground Trail, contains fine stands of rare cattails, *Typha angustifolia*. This narrow-leaf cattail is commonly found in eastern Canada but is an unusual find on the West Coast. To protect these resources, this area of

the marsh is designated Environmental Protection Zone within the Park zoning framework. The area between the Booming Ground Trail and the trail from the Fraser Historic Monument is to be zoned Environmental Restoration Zone. The remainder of the marsh to the breakwater will be designated Buffer Zone. This provides a high level of protection but also allowing the traditional (clothing optional) use of the area up to the Booming Ground Trail.

Action:

- Co-ordinate management and conservation roles with NFHC, FREMP, Fisheries and other agencies having jurisdiction.
- In the long term (beyond five years) GVRD should acquire waterlot leases to ensure the marsh area is part of the park.
- Consult with NFHC to have:
 - 1) boom cables that are tied to trees in the park removed;
 - 2) dolphins installed off marsh bench to stop grounding of log booms; and
 - 3) chip scows covered to stop blowing or spilling of wood chips.
- Coordinate with NFHC, FREMP and Fisheries to obtain baseline data of the marsh area and establish a systematic monitoring program of the marsh.
- Communicate and cooperate with WBPS, VNHS and other groups or agencies who have resource management interests in the marsh.
- Monitor use impacts on the marsh and, if necessary, modify the Zone boundaries to ensure protection of specific features and values of the estuary marsh.

7.8 Beach Area

The northwest boundary of the Park is the mean high-tide line on the Strait of Georgia (Pacific Ocean). Below the high-tide line is under Vancouver Port Authority jurisdiction. The beach from the Park boundary just east of Acadia parking lot to the Fraser River North Arm breakwater is designated Beach Zone within the Park zoning framework.

The intent of this zoning is to allow safe, environmentally sound beach activities in this natural setting.

The backdrop to this beach is the well-forested slopes and cliffs of Point Grey. This natural setting is unique in the Lower Mainland and must be preserved. Several problems such as slope erosion, scatter trails, high use, lack of sanitary facilities and water quality are addressed in other sections of this Management Plan, but the resource management of the area must strive to maintain the beach area in as natural a state as possible. This is consistent with the goals that the WBPS and many beach users have had for the past thirty years.

In places the forested backdrop will be enhanced by planting indigenous species, and successional forest growth will be encouraged. In other areas toe and cliff erosion control may be required. Erosion control measures must be as natural looking as possible and such work will only be carried out after an approval process involving public participation.

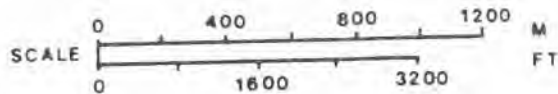
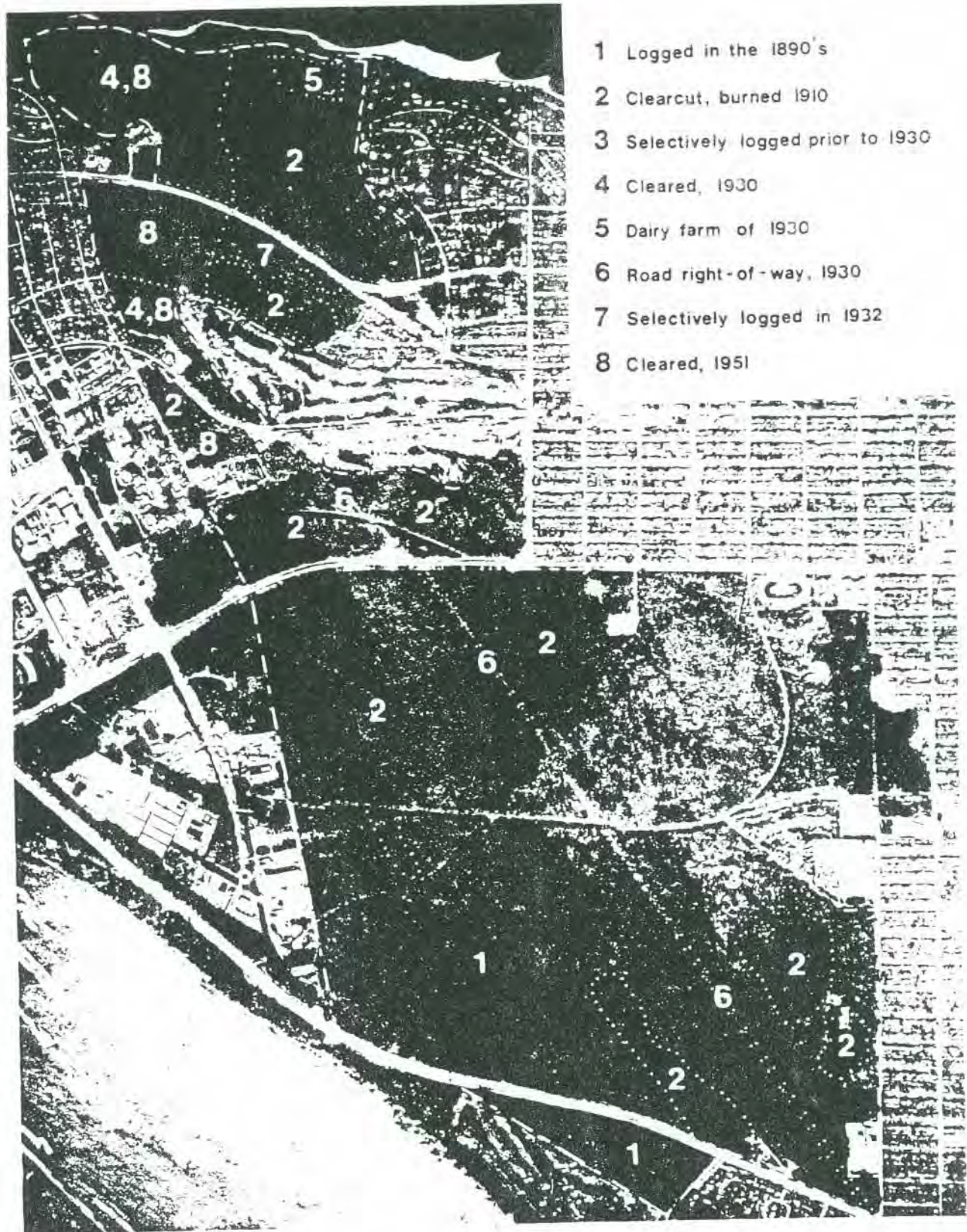
In the past, rock groins and spoil material were placed to control toe erosion. This is visually unacceptable to many beach users. Also in the past, addition to the beach of sand dredged from the Fraser River has helped control some toe erosion and has been an asset to beach use. The Vancouver Parks Board would like to see this done again, so that sand can be carried by ocean currents to replenish the beaches at Spanish Banks and Jericho. Before any sand is placed on the beach, testing will be done to ensure the sand is free of contaminants. Beach users will be kept informed and have input to any course of action for sand placement.

GVRD is committed to providing safe, environmentally sound beach activities in as natural a setting as possible given the pressures of the urban setting. Much of this beach area is designated "clothing optional". Refer to Section 8.5 for beach activities.

Action:

- Continue liaison and cooperation with WBPS and other groups or agencies having resource management interests or jurisdictions.
- Review with full public participation any proposals for erosion control, placement of sand on the beach or any other proposal affecting on the natural setting of the beach.
- Investigate the possibility of adding sand to sections of the rocky beach area. Determine costs of delivery and source of material, ensuring it is contaminant-free.
- Develop an operational plan for the Park's Foreshore Unit (beach and marsh area) that will help protect the natural assets of the foreshore.
- In the long term (beyond five years), GVRD should acquire water lot leases of the intertidal zone.

HISTORICAL DISTURBANCES



(From Thompson, 1985)

Figure 6

7.9 Upland Forested Area

The major visual component of the Park is its forest. Even though the Park is well forested today, this has not always been the case. The entire upland forested area was logged at least once since the 1860's. Some areas were clear-cut and some were selectively logged.

The red alder stands found on both sides of Chancellor Boulevard in the northwest section of the Park are a result of those areas being totally cleared as recently as 1951. The large coniferous trees found in the Ecological Reserve are second growth, natural regeneration on an area logged in the 1890's (See Figure 6).

The Park's history of site disturbances is one of the most important factors affecting its plant distribution and therefore its forest diversity. Today's Park forest is certainly diverse. It has classic examples of early successional red alder, examples of mixed, deciduous-coniferous stands and well-established second-growth conifers. Remnants of old growth Douglas-fir occur in certain areas of the foreshore. Within this diverse forest twenty vegetation associations have been defined and mapped (Thompson 1985).

The present policy for all Regional Parks is to restrict vegetation disturbance except for safety and erosion concerns. However, natural change, or plant succession will occur, and it is likely that the vegetation seen today may not be present in the future. Without any disturbance the forest will eventually evolve into a west coast hemlock forest. However, plant succession is a very slow process and it takes many, many years for substantial changes in the forest to be observable. Pacific Spirit Regional Park has a pleasing visual diversity and presents interesting opportunities for interpreting successional stages. To maintain these qualities the forest ecosystem will have to be managed.

Four areas along the foreshore have been managed for view purposes. These are the Fraser Historic Site (overlooking Iona Island); a viewpoint along Old Marine Drive; a view point from the David Lam Centre (UBC

Botanical Gardens); and an area along N.W. Marine Drive (approximately from the Historical Monument, east of Trail 3, to the open grass area, west of Acadia parking lot). Vegetation management to provide pocket or filtered views in these areas will continue.

In the short term, the resource management objective is to conserve forest ecosystems and current processes of natural succession. In the long term, GVRD will assess several of its forested Regional Parks, including Pacific Spirit, to determine forest management objectives.

Action:

- Continue to manage vegetation along forest edges and trails for safe recreational use by cutting danger trees and removing windfalls.
- Assess leaving three to four metre upright stems of danger trees to enhance wildlife habitat, specifically for woodpeckers, chickadees and wrens.
- Continue to manage four areas along the foreshore for public view purposes, and monitor these areas for erosion.
- Develop a forest management plan with public input by:
 1. establishing a planning process;
 2. conducting the necessary research;
 3. developing forest management objectives and implementation strategies.

7.10 Forest Edge

Most of the Park boundary edges are well forested. Many areas along the forested edge have been subject to dumping of debris, adversely impacted by street work and general destruction of vegetation. This results in a messy, unkept look and is also poor wildlife habitat. A gradual clean-up and restoration of the forest edge is proposed. The intent is to retain a transition landscape between the urban scene and the forest as a way of showing that the Park is managed and respected.



The forest edge abuts residential properties along 5.6 kilometres of Park boundary. It is illegal for individuals to cut Park trees, shrubs or understory to enhance private property or views. It is also illegal to dump household or garden debris on Park property. GVRD Parks staff will only assess problems relating to danger trees, security concerns and forest edge clean-up.

There are five schools that have a common boundary with the Park. In these areas the forest is negatively impacted by scatter trails, which are often unsightly with litter. GVRD is working with the schools to promote environmental awareness and debris clean-up. Reforestation and, in some instances, fencing trail access points may be required.

The Park's forest edge abuts 21.5 kilometres of road edge. Edges along Chancellor, Blanca, and 16th Avenue are visually pleasing and easily maintained. In places along S.W. Marine Drive there is too much grass being maintained and wildflowers or more forest edge could be encouraged. Forest edges along Imperial Road, Camosun Street, Crown Street, and Old Marine Drive need to be cleaned up and improved visually as well as made easier to maintain. However, it is important to obtain a detailed plant inventory along these edges prior to this work proceeding.

Action:

- Program funds for a gradual clean-up and maintenance program for the forest edge.
- Encourage residents abutting or living close to the Park to not dump garden refuse, etc. in the Park. Composting information will be distributed, and a Park neighbour campaign developed.
- Work with the schools abutting or near the Park on environmental awareness, litter clean-up, reforestation, and closing scatter trails.
- Consult with volunteers and interest groups involved with the Park-edge and trail-edge plant inventories, to ensure that any Park edge improvements do not adversely impact any rare or significant plants or plant communities.

- Discuss with UBC Campus Planning any developments on the campus or UBC Research area that could adversely impact the forest edge (eg. Kaon Development).
- Discuss with Ministry of Highways alternative road edge maintenance practices to reduce the amount of grass cutting in some areas.

7.11 Wildlife Habitat

The Park is home to many birds and mammals as well as a smaller number of reptiles and amphibians. Several studies, mostly UBC graduate theses, have been conducted pertaining to the wildlife of the Park. Newell (1983) completed a study of terrestrial vertebrates on the Endowment Lands for GVRD and the UBC Technical Committee, listing the wildlife species reported in the forest from 1963 to 1983. See Appendix iv for complete list.

The extensive forest edge of the Park contributes to species diversity as does the biophysical diversity of the Park. The Fraser River estuary and its associated tidal flats are productive feeding areas for many of the birds of the Park. The upland streams, marshes and Camosun Bog also contribute to the food chain of the Park's wildlife by supporting large year-round insect populations. The different forest types, further provide fruit, seeds, bulbs, decaying logs, dead trees and a variety of vegetative cover types, providing a wide diversity in wildlife habitat.

Wildlife in the Park is often difficult to view for any length of time, especially with the increase in recreational use of the forest. However, if one knows the habitat preferences of various species one can often see a variety of species. For instance, Pacific Tree Frogs and Common Garter Snakes prefer low, damp areas and stream edges, as do the Common Snipe, Killdeer and Belted Kingfisher. The Northwestern Garter Snake and Northwestern Chipmunk prefer drier, more open and sunnier areas.

Rufous Hummingbird also prefer more open areas, especially along the powerlines. The brush kept trimmed under the powerlines provides many flowering plants for hummingbirds and is therefore important

Evening Grosbeak and Red Crossbill prefer the denser coniferous forests of the Ecological Reserve and east of UBC Research area. This also seems to be prime habitat for coyote. Up to five coyotes have been seen at one time in this area.

A subsequent publication by Newell (1984) states that Black-tailed Deer were seen fairly regularly in small groups of two or three along paths and forest edge south of 16th Avenue. But in recent years no such sightings have been reported. This is possibly due to too much disturbance from the increase in human use and perhaps the dogs-off-leash use. Good habitat in terms of cover and year-round food such as Douglas-fir, cedar and salal is plentiful enough for deer to remain permanently in the Park, if they were present. GVRD does not intend to reintroduce deer to the Park.

Action:

- Enhance wildlife habitat by maintaining forest edges, powerline rights-of-way, trail edges and, in places, forest openings.
- Encourage research projects that inventory wildlife species and habitat, and enhance habitat with various plants, if required.
- Continue with Park interpretation and environmental education programs that feature wildlife and associated habitat.
- Consider long term wildlife implications in conjunction with the forest management plan.

7.12 Butterfly Habitat

The biophysical diversity of the Park contributes to diversity in insect species. As with other wildlife, insects have preferred habitats and often very specific plants on which they feed.

Butterflies are probably the most easily seen and recognizable insect in the Park. Their mobility and often striking colours attract attention.

Unfortunately, the Lower Mainland has few species or individuals of butterflies and much of their habitat has been lost in the past 15 or so years (Ashton 1989). Thus, it is important to maintain butterfly habitat in the Park.

Adult butterflies which feed on flower nectar favour blackberries and thistles. These plants occur along certain trail and forest edges in the Park and must be preserved.

Stinging nettles (*Urtica*) are food for the caterpillar stage of four species of native butterflies, namely Satyr Angelwing, Milbert's Tortoiseshell, Red Admiral and Western Painted Lady.

Pussy willows (*Salix spp.*) often leak sap through wounds caused by burrowing insects and attract butterflies that feed on sap, such as Satyr Angelwing, the Mourning Cloak, Lorquin's Admiral, Red Admiral and the rare California Tortoiseshell.

Trembling Aspen (*Populus Tremuloides*) is used by the adult Tiger Swallowtail and by three native Lower Mainland butterfly species during their caterpillar stage. They prefer saplings in a warm, sheltered, isolated place. Proposed restoration of the aspen grove would provide such habitat.

The rare and endangered Canadian butterfly, the Johnson's Hairstreak *Mitoura johnsoni* feeds solely on the aerial shoots of Dwarf Mistletoe *Arceuthobium compylopodium*, while in its caterpillar stage. Dwarf Mistletoe is quite prevalent on many of the older hemlock trees in the Park. A colony of Johnson's Hairstreak exists in the Park, but seems to be in decline. Rare sightings of this butterfly (8 adults seen in 1989) occurred in their preferred habitat along the powerline adjacent to Imperial Trail (Ashton 1989).

GVRD recognizes the importance of butterfly habitat and the interpretive opportunities of butterfly sightings. Therefore, work with interest groups and expert individuals will continue to safeguard such habitat.

Action:

- Assist with identification and inventory of butterfly habitat plants.
- Ensure that Park development and maintenance does not damage butterfly habitat.
- Restore and enhance butterfly habitat e.g., aspen grove.
- Evaluate the introduction of non-native plant species that attract butterflies. No non-native plants which are invasive should be planted.

7.13 Special Plants and Natural Resources

As more areas within the Park are studied in detail, special, rare or endangered plant species are going to be identified. Detailed studies within Camosun Bog have identified such species as Round-leaved Sundew, *Drosera rotundifolia* an insectivorous plant; Arctic starflower, *Trientalis arctica* a rare species in BC; and Cloudberry, *Rubus chamaemorus* an arctic species relocated this far south by the last Ice Age. All these species are special to the story of the Bog.

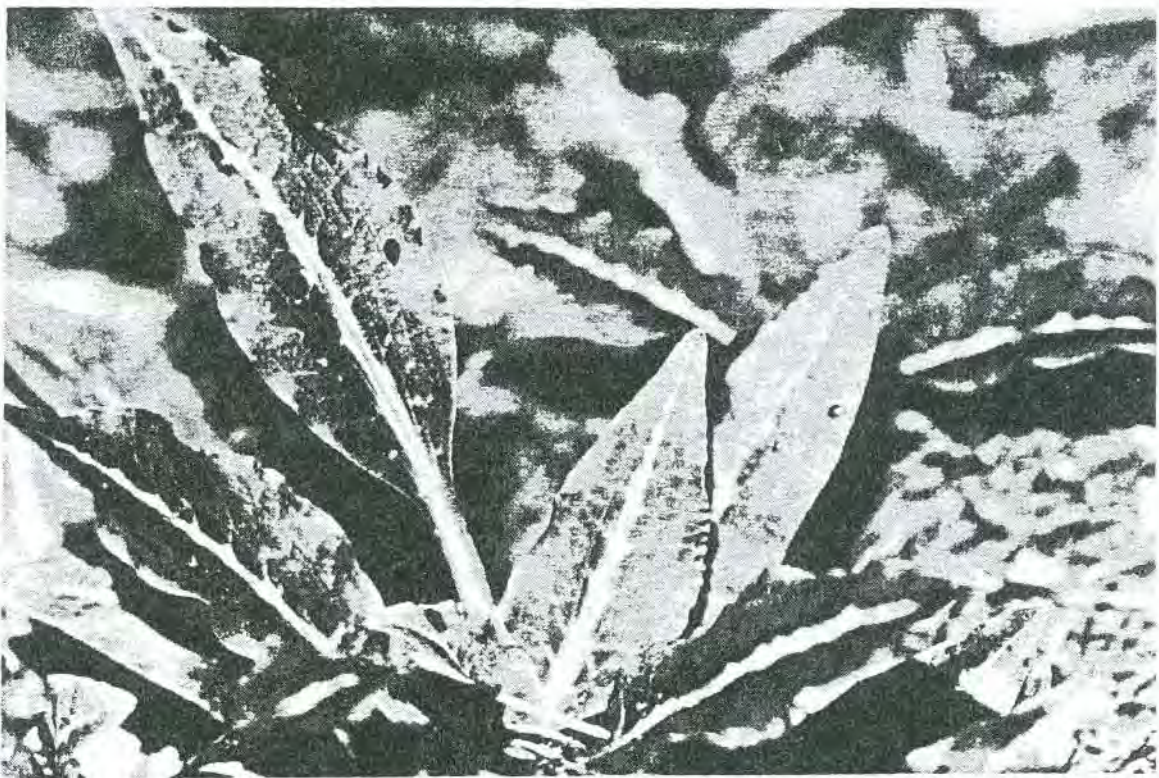
More recent finds of special plants have been made by avid nature lovers visiting the Park. One of these is a colony Rattlesnake plantain *Goodyera oblongifolia*. This orchid occurs in a number of places throughout the Lower Mainland, but is rare in the Park. Also, a rare cattail, *Typha argustifolia*, was an unexpected find in the Fraser River marsh area. These special plants add to the interesting plant diversity within the Park and have important interpretive values.

The trail-side plant inventories being conducted by the Volunteers-in-Parks (VIP) may reveal more such special and interesting plants. Park visitors need to be made aware that it is important to conserve these rare and endangered species for future generations. Picking, cutting, or destroying the vegetation of the Park in any way are prohibited. This Park by-law also applies to picking of edible species such as mushrooms, fiddleheads, nettles, berries, etc.

Park visitors should enjoy the beauty plants offer in the Park, but leave them for others to also enjoy.

Action:

- Compile an inventory of special, rare or endangered plant species and map and record their locations. This information will not be for publication.
- Through interpretive programs and Park information provide public awareness of the special plants and the Park's natural resources and complex bio-diversity.
- Coordinate training sessions with the VIPs and Park maintenance staff so they are aware of the special plant locations and are knowledgeable about these special plants so they can help inform Park visitors.
- Establish a monitoring program to ensure special plants are not being damaged by recreational use.
- Post special notices when certain edible plants, such as mushrooms and fiddleheads, come into season to inform the public that it is illegal, under GVRD bylaws, to collect these plants.



8.0 RECREATION OPPORTUNITIES AND MANAGEMENT

8.1 Walking/Hiking/Jogging

There are over 50 kilometres of trails in Pacific Spirit Regional Park, which are suitable for walking, hiking and jogging. All the trails will be signed. Trail brochures and maps, available at various trail entrances and the Park Centre, will assist the trail users to enjoy the Park.

There are approximately 15 kilometres of trail designated for pedestrian use only. (See Section 9.3 for specific trails.) Trail designations may be changed depending upon environmental concerns and use patterns or conflicts. To ensure the protection of the Park's natural resources, all trail users must realize that it is imperative that they stay on designated trails.

Action:

- Sign and, if necessary, install baffle barriers at entrance points to "pedestrian only" trails.
- Monitor all trail use, especially ensuring multiple use does not occur on "pedestrian only" trails.
- Encourage trail users to be responsible and to apply peer pressure to irresponsible park users.
- Encourage walkers and others to join the VIP program, to monitor and assist GVRD to provide safe, friendly trail use.

8.2 Walking with Dogs

The forest is a pleasant place to walk one's dog and this use has taken place for many years. Dogs have not been on leashes and have been allowed to run relatively free.

GVRD accepts the present situation and will not enforce Regional Parks' regulation that all dogs must be on a leash. So long as dog owners ensure that their dogs are under control and are not a nuisance to other Park users and wildlife, the status quo will remain, except in the Foreshore

Unit of the Park. GVRD on-leash regulations will apply to the Foreshore Unit of the Park because of the high use of the beach area and the wildlife concerns in the marsh area. Provincial health regulations prohibit dogs at swimming-beach areas. Voluntary participation and compliance is requested in enforcing this regulation on the Foreshore Unit. GVRD requests that dog owners at least keep their dogs on a leash during summer months.

Dog owners are also requested to clean up after their dogs and remove their dog's droppings from trail surfaces and the beach area.

Action:

- Monitor dog use of the Park and record conflicts between dogs and other Park users or the natural resources, especially wildlife, to determine future regulation direction.
- Encourage dog owners to be responsible for their dogs and respectful of other Park users, and the Park's wildlife.
- Promote an awareness and understanding of the Provincial health regulations concerning dogs at swimming areas.
- Enforce the on-leash regulation in the beach and marsh areas and in Camosun Bog.

8.3 Horseback Riding

The Southlands area is well known for its horse population and its horse riding interests. The Park is easily accessible from Southlands by a riding trail that crosses S.W. Marine Drive at 41st Avenue. The UEL Trail Riders Association built trails and posted signs in the forest before the area became a Regional Park. Horseback riders have enjoyed riding in the upland forest for many years.

GVRD supports this recreational opportunity and has designated over 35 kilometres of trail as "multi-purpose" trails, to be shared by all Park users. Therefore, trail etiquette is most important.

The UEL Trail Riders Association has developed guidelines for trail use by its members. These guidelines promote respect for other trail users, as well as sensitivity to environmental concerns. For example, they advocate seasonal trail use for specific trails in environmentally sensitive areas. GVRD has adopted many of these guidelines and is extending them to other trail user groups.

Action

- Continue liaison and cooperation with the UEL Trail Riders Association.
- Encourage and work with the Association in sponsoring grants or "adopt-a-trail" programs for trail upgrading and maintenance.
- Sign trail system to ensure users understand trail designations and use requirements.
- Close trails on a seasonal basis if trail conditions are poor, causing a safety or environmental concern.
- Encourage horse riders to join the VIP program to assist GVRD in providing safe, friendly trail use in harmony with the natural environment.

8.4 Mountain Biking

Off-road cycling, sometimes called mountain biking, is a relatively new activity in the outdoor recreation scene. It is a growing sport and is not without its growing pains. Off road cycling can be damaging to the environment depending upon terrain and vegetative cover. When limited to trails, it may create conflicts with other users, but the activity also provides healthy recreation, creating enjoyment for many.

Cycling on the upland forest trails has taken place for many years, and this is an increasing trend. Cycling off the trails through the forest understory has been happening over the last several years. This causes adverse environmental impacts and if allowed to continue will destroy the natural resources that make the Park so significant and enjoyable for many.

Within the GVRD Regional Parks system of sixteen parks, Pacific Spirit is the only Park with an extensive network of trails, on relatively flat ground, with good soils and forest cover. From this point of view it is one of the best Parks in the system to provide the recreation opportunity of off-road cycling which is a growing demand throughout the Region. However, there are natural resources which must be protected and public safety concerns which must be addressed. Therefore, if this recreation opportunity is to continue, it must be strictly managed and regularly reevaluated. A commitment to adequate staffing and patrolling will be required.

Since this is a new management challenge for GVRD, the following management direction and action will be taken:

- The purpose of cycling in the Park is for access and a means of enjoying the Park's natural resources.
- Off-road cycling will only take place on designated "multi purpose" trails and not on any pedestrian only or seasonally closed trails. GVRD may change trail designations with respect to off-road cycling in an effort to maintain a high level of public safety and good environmental management.
- Cycling in the Park is not for racing, the thrill of speed or to seek challenge riding.
- Two years will be dedicated to working with Park cyclists to make them aware of recreating in harmony with the Park environment. Enforcement will be part of the awareness program and cycling will be closely monitored and continually reviewed.
- After two years, the cycling activity in the Park will be fully reviewed and if it is found that cycling can not be managed in accord with the natural resources and other Park users, then cycling will be limited to a few major trails through the Park and perhaps even prohibited in some areas of the Park.
- If cycling in the Park is a positive experience for all Park users, then providing trails that offer more variety for cycling will be considered. The Pacific Spirit Cycle Club has requested that they build a challenge trail. This is considered premature prior to the two year evaluation period.

Action:

- Continue to work with the newly formed Pacific Spirit Cycling Club.
- Encourage the growth of the Club and its participation in assisting GVRD to upgrade and maintain trails and manage cycling for the safety and enjoyment of all Park users.
- Develop and implement an educational awareness program for all Park cyclists promoting recreation in harmony with the Park environment.
- Install the required signs to designate all multi-use trails and where required, install barriers to cyclists on "pedestrian only" or "seasonally closed" trails.
- Monitor trail use and, if necessary, change trail designations to ensure a high level of public safety and good environmental management.
- Encourage all trail user groups and VIPs to increase peer pressure on irresponsible trail users.
- Use enforcement as part of the educational process and increase enforcement after the first year.

8.5 Beach Activities and Swimming

The Foreshore Unit of Pacific Spirit Regional Park offers unique beach activities and unsupervised swimming. Approximately 3 kilometres of sand and rock beach, strewn with ocean washed logs, exists within a natural setting slightly modified due to erosion control measures. A further 3.6 kilometres of shoreline is estuary marsh, with pocket beaches and wave-washed logs in a relatively pristine natural setting.

Most of the foreshore area has a "clothing optional" status. This clothing optional area is known as Wreck Beach and has a social flavour unique in the Lower Mainland. GVRD recognizes the historic use of Wreck Beach. In 1983 the clothing optional boundaries were recognized as being from the Mile Marker (wood bridge just west of Acadia parking lot) to the Musqueam Reserve boundary.

GVRD views the clothing optional boundaries to be from the Mile Marker to the base of Booming Ground Trail (approximately 200m west of the Musqueam Reserve boundary). This corresponds with the Environmental Protection Zone at the marsh end, in which access to all Park visitors is strictly controlled.

Since the foreshore was officially dedicated as part of Pacific Spirit Regional Park, GVRD has had concerns about some environmental and operational aspects. To help address these issues GVRD formed a Task Force with representation from the Wreck Beach Preservation Society (WBPS), beach users and other groups interested or affected by foreshore activities. The Task Force held six meetings from January to March 1991. (See Appendix v for the Task Force's summary of issues and recommendations)

Over the past few years, various authorities and many beach users have become very concerned about anti-social behavior and illicit activities taking place at Wreck Beach. The major concerns are over the sale of illegal substances (drugs), the sale of alcohol in a public place and the vending of food that may not meet health authority standards. GVRD will continue to work with the WBPS, beach users and various agencies to curb anti-social behavior and illegal activities (see Section 9.4). GVRD is committed to making the beach a safe and enjoyable place for Park visitors.

Most beach users support the foreshore being maintained in as natural a state as possible. The addition of any Park amenities, with the exception of more pump out toilets, would detract from the natural setting of the beach and could lead to increased use of the area. Already there are many summer days when the beach area is being over-used. Thus GVRD will manage the beach with the minimum of amenities so as not to increase the use of the area, and maintain it in as natural a state as possible.

Swimming often takes place in the ocean along this stretch of beach (and to a limited extent in the Fraser River North Arm). Swimming is informal and "at your own risk". No lifeguards are on duty. GVRD is responsible

only for ensuring "no swimming" signs are posted when water quality does not meet health standards for public swimming areas. GVRD will continue to take water samples in high use areas and submit results to Vancouver Health Department, who is responsible to advise GVRD when to post "no swimming" signs.

It is a Provincial Health standard that dogs are prohibited on swimming beaches. GVRD tries to comply with other agencies, so in time this will apply to the beach area. In the short-term dogs should be on a leash during the summer months and on a leash in the marsh area at all times, because of wildlife concerns.

Action:

- Ensure the "clothing optional" boundaries are well signed.
- Continue to take water samples, consult with Vancouver Health Department and post "no swimming" signs when water quality does not meet health standards for public swimming areas.
- Place notice signs of "No lifeguard on duty. Swim at your own risk".
- Monitor dog use of the beach and marsh area and start enforcing the on-leash regulation.
- Continue liaison with WBPS, beach users and other interest groups and agencies to ensure safe and enjoyable beach use for all Park visitors.

8.6 Other Activities

Many individuals, groups and organizations use the Park for a variety of activities. Scouts have conducted night exercises and camping for many years prior to the area becoming a Park. Orienteering is an activity that extensively uses the whole Park. The orienteers produced a detailed map of the Park. It shows almost every scatter trail and interesting features such as fire rings, tree houses and play shelters.

Now that the area is a Park, GVRD requests that recreational activities are in harmony with the Park environment. Organizations planning special

events such as fun runs, walk-a-thons, bike rallies, overnight camps, etc. are required to contact the Park administration (West Area Office) at the Park Visitor Centre to advise GVRD of their plan. If the activity is beyond regular Park hours or regulations a Special Use Permit may be required.

This coordinating and approving role ensures that special activities do not conflict with other Park users and that all safety issues have been addressed. Often GVRD can assist in planning and organizing such activities. Signs can be posted notifying Park users that an event is taking place in a certain area. If a Special Use Permit is required, special security measures need to be discussed. GVRD encourages open communication between Park staff and Park users. The Park is for everybody to enjoy, but with respect for the Park, other Park users and everyone's personal safety.

Action:

- Coordinate with various users, groups and organizations to ensure their special needs and activities can be accommodated in the Park without adversely affecting the Park and other Park users.
- Ensure proper risk management procedures are followed to minimize safety and liability concerns.
- Use a registration/permit system to coordinate and manage organized group activities in the Park.

9.0 VISITOR FACILITIES AND SERVICES

9.1 Roads

Three main roads, 16th Avenue, University Boulevard and Chancellor Boulevard cut through the Park in an east-west direction. Marine Drive circumnavigates the Park and separates the Foreshore Unit from the rest of the Park as well as from the University of British Columbia (UBC). These roads are major access routes to UBC and are heavily travelled during weekday rush hours, especially during university semesters from September through to May. Traffic travelling at high speeds causes a safety hazard for Park visitors crossing these major routes.

These roads are also the main access roads for the Park. Park identification signs should be prominent along these roads and any Park information or major trailheads along these routes should be emphasized to encourage the travelling public to stop and investigate the Park.

UBC/UEL information is located at pull-outs along SW Marine Drive, 16th Avenue and Chancellor Boulevard. Park information should be added to these pull-out areas.

Imperial Road joining the 29th Avenue extension and Camosun Street are the main north-south connectors linking 16th Avenue to 41st Avenue and SW Marine Drive. Imperial Road splits Camosun Bog off from the rest of the Park and is very close to the heron nesting area. However, since this is an important north-south connector it should remain for vehicular access, although speeds along this section should be reduced.

Blanca Street is also a major north-south connector, from 16th Avenue north to University Boulevard (10th Avenue) and Chancellor Boulevard (4th Avenue), but only a small section (approximately 3 blocks) borders on the Park.

Old Marine Drive is a section of road approximately 2.5 kilometres long. B.C. Highways is in the process of de-gazetting and transferring ownership to GVRD. Upon receiving this land, GVRD will block off the west entrance and install a gate at the east. Creating a single gated entry/exit will assist to control unauthorized dumping that happens along this park edge. Gate opening and closing at times will still allow daily parking along this road for visitor's using the foreshore.

GVRD is responsible for maintenance of road edges within the Park boundaries along Chancellor and University Boulevards, and 16th Avenue, west side of Blanca (from 12th Avenue to 16th Avenue), and along the ocean side of Marine Drive from Acadia parking lot to the western entrance to Old Marine Drive. B.C. Highways maintain within the right of way of S.W. Marine Drive and the City of Vancouver maintains the edges of Imperial and Camosun Street. Maintenance of the GVRD road edges is presently done under contract.

Action:

- Consult with BC Highways and UEL Administration about formalizing safe pedestrian cross-walks and placing more Park identification signs on the four major Park access routes.
- Consult with UBC and UEL Administration about placing Park information at the three information pull-offs.
- Consult with BC Highways and RCMP about reducing and enforcing the speed limit along Imperial Road.
- Consult various authorities about closing the east entrance to Old Marine Drive and gating the west entrance/exit.
- Consult with City of Vancouver about placing a stop sign at Camosun and 33rd Avenue.
- Review maintenance procedures for road edges and boulevards exploring reduced maintenance costs, but achieving a well kept, park-like road edge as stated in Section 7.10.

- Consult with other Agencies responsible for road edge maintenance to achieve maintenance consistency and also make them aware of any significant plants or resource that needs special management and protection.

9.2 Parking

Most parking for Park visitors is on-street parking. S.W. Marine Drive and 16th Avenue have wide paved shoulders where parking is allowed. The paved shoulders are also used by cyclists (mainly commuting to UBC) causing some hazardous conflicts. These conflicts are reduced somewhat along 16th Avenue as there is a paved bicycle path on the north side of 16th Avenue and could be further reduced by upgrading (and perhaps, in the long term, paving) S.W. Marine Trail for safe bicycle use.

There is a paved parking shoulder on the UBC side of Marine Drive, but Park visitors have to compete for this parking with UBC students. There is no shoulder parking on N.W. Marine Drive, and sometimes overflow parking from Spanish Banks encroaches onto park land or restricts traffic flow in this area.

There is shoulder parking for about 30 cars on the north side of Chancellor Boulevard, opposite Pioneer Trail and shoulder parking on Blanca Street. Motorists park on gravel shoulders on 29th Avenue and on Old Marine Drive, but this parking should be better organized.

Within the Park there are three small parking lots, Acadia, Totem (Table 3, Site #10) and at the temporary Visitor Centre (Table 3, Site #1). In the short term these will be upgraded and better organized.

Five schools border the Park. Each have small parking lots. These lots could perhaps be utilized during weekends when Park use is highest. Many trails originate or pass close to these schools. In the long term, when a group picnic area is developed at the site of the old Clinton Stables (Table 3, Site #4), parking at the two schools along Camosun Street will become important as there is no shoulder parking along Camosun.

Utilizing parking on UBC Campus is also a possibility, especially on weekends and during the summer. Integrating Park recreation opportunities with Campus points of interest, such as the Botanical Gardens, Nitobe Gardens, Rose Garden and Museum of Anthropology, could encourage parking on Campus.

In the short term (up to 5 years), parking for park visitors is adequate. In the long term, utilizing parking at schools and on UBC Campus are possibilities. Park visitors will also be encouraged to travel to the Park by transit or bicycle.

Action:

- Upgrade, control and improve parking at Acadia and Totem parking lots and at the Park Visitor Centre.
- Formalize shoulder parking along Old Marine Drive and 29th Avenue.
- Upgrade SW Marine Trail to a high standard for a multi-use trail.
- Consult with schools, the Vancouver School Board, UBC Campus Planning and Administration concerning utilizing their parking areas.
- Coordinate parking and, in certain places, better control of parking, with UEL administration and BC Highways.
- Consult with Vancouver Parks Board concerning the lack of parking at the west end of Spanish Banks.
- Add parking and transit information to park maps, notices and brochures.

9.3 Trails

Prior to the area becoming a Regional Park, approximately 50 kilometres of trails and 6 kilometres of paved bicycle paths had been constructed. Trail standards varied from narrow foot paths, such as Admiralty or Sword Fern Trails, to seven or eight foot wide, well drained trails such as Salish. Trail surfaces also varied from native soils to bark mulch (hog fuel) to gravel. Many of the trails do not withstand heavy use, especially by mountain bikes and horses in wet weather.

Two interest groups - the Endowment Lands Regional Park Committee (now known as Friends of Pacific Spirit) and the UEL Trail Riders (a well organized equestrian group from Southlands) were responsible for most of the trail building. Their members were most knowledgeable about the trails and assisted GVRD in providing trail maps and advice on which trails needed upgrading. They also suggested that trails not being used by equestrians should also be off limits to cyclists. GVRD evaluated these trails and began designating them as "pedestrian only" trails.

As part of the Park's management planning process, a Trail Task Force was formed to include these two interest groups and others such as cyclists and environmentalists. The following trail map (Figure 7) and trail standards (Figure 8) resulted from much discussion and evaluation by the Task Force. GVRD has adopted these, pending further public comment.

Thirty-four trails in the upland forest and seven trails in the foreshore have been officially designated. Approximately thirty per cent (15 kilometres) of the trails are designated "pedestrian only". All the trails on the foreshore are "pedestrian only" trails, along with the following trails in the upland forest.

- North of Chancellor Boulevard:

Trail No. 1 Admiralty
7 East Canyon
27 West Canyon
29 Chancellor

- Between Chancellor and University Boulevard:

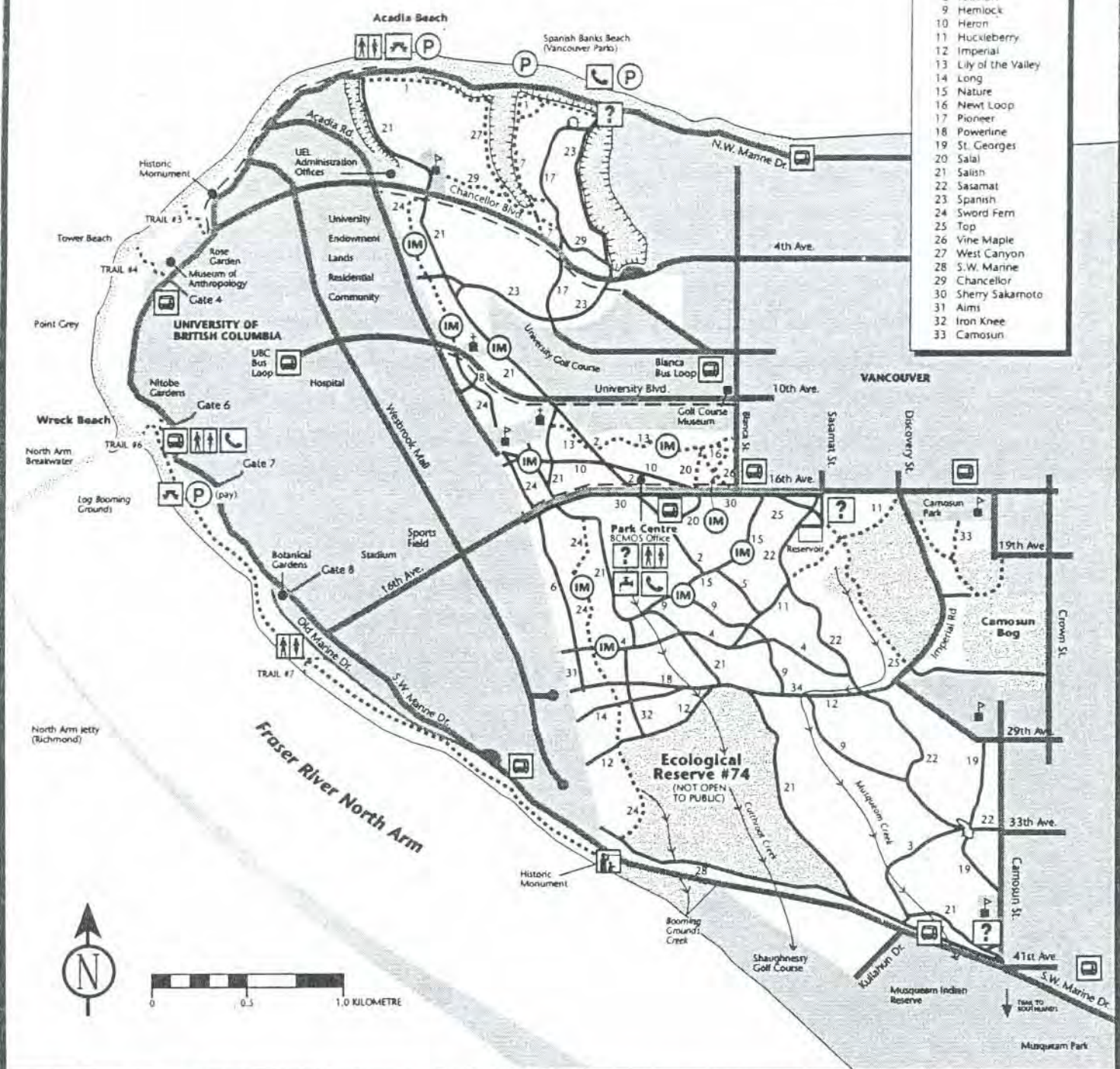
Trail No. 24 Sword Fern

- North of 16th Avenue:

Trail No. 13 Lily of the Valley
16 Newt Loop
20 Salal
26 Vine Maple

PACIFIC SPIRIT REGIONAL PARK

- TRAILS**
- 1 Admiralty
 - 2 Cleveland
 - 3 Clinton
 - 4 Council
 - 5 Deer Fern
 - 6 Douglas Fir
 - 7 East Canyon
 - 8 Fairview
 - 9 Hemlock
 - 10 Heron
 - 11 Huckleberry
 - 12 Imperial
 - 13 Lily of the Valley
 - 14 Long
 - 15 Nature
 - 16 New Loop
 - 17 Pioneer
 - 18 Powerline
 - 19 St. Georges
 - 20 Salal
 - 21 Salish
 - 22 Sasamat
 - 23 Spanish
 - 24 Sword Fern
 - 25 Top
 - 26 Vine Maple
 - 27 West Canyon
 - 28 S.W. Marine
 - 29 Chancellor
 - 30 Sherry Sakamoto
 - 31 Aims
 - 32 Iron Knee
 - 33 Camosun



LEGEND

- | | | | | | | |
|-------------|----------------|------------------------------------|-----------|---|---------------|--------|
| Information | Toilets | Picnic Area | Tree Line | Hiking Trail | | Church |
| Parking | Telephone | Viewpoint | Creeks | Bicycle Path | - - - | School |
| Bus Stop | Drinking Water | Park Boundary | Cliffs | Horseback Riding/
Cycling/Hiking Trail | Iva Mann Walk | ——— |
| | | Environmentally Sensitive Parkland | | | | |

FIGURE 7 (revised)
16 August 1994

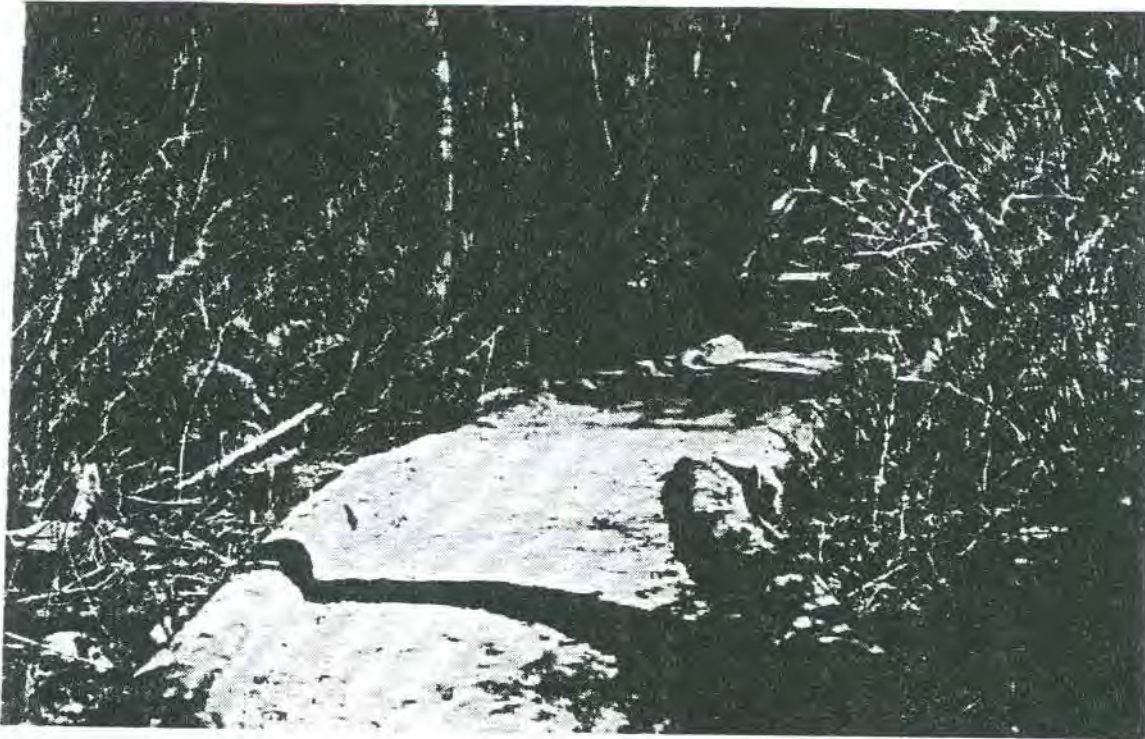
- South of 16th Avenue:
 - Trail No. 4 Council, between Sasamat (9) and Salish (21) (On a temporary basis, as this needs upgrading to be a safe multi-purpose trail.)
 - 11 Huckleberry, north of Sasamat (22)
 - 21 Salish, from entrance at Camosun Street (and 41st Avenue) to Clinton (3)
 - 24 Sword Fern
 - 34 All trails in Camosun Bog

There are approximately 35 kilometres of multi-purpose trails for walkers, joggers, equestrians and cyclists to enjoy. This split in trail use will be monitored over the years and adjusted, if need be, to reflect environmental concerns, user safety, and/or changes in use patterns.

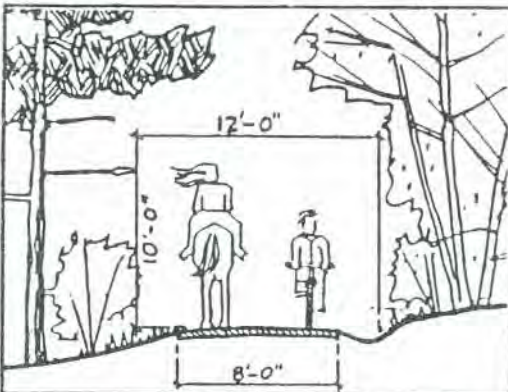
The following trails have been designated as fire access routes and are part of the multi-purpose trail use system:

- North of Chancellor Boulevard
 - Trail No. 17 Pioneer
 - 21 Salish
- North of 16th Avenue
 - Trail No. 10 Heron (also a maintenance access for Hydro)
- South of 16th Avenue
 - Trail No. 12 Imperial (also a maintenance access for Hydro)
 - 21 Salish (to south end of Clinton (3) then onto SW Marine (28) to the trail entrance/exit at Camosun and 41st Ave.

As part of the Park's annual trail maintenance program, supplemented by grant funding, the trails will be upgraded to reflect the suggested standards shown (Figure 8). These standards show the maximum dimensions for trail clearing and tread width. For variety and minimum development purposes, some trails, especially in the foreshore area, will

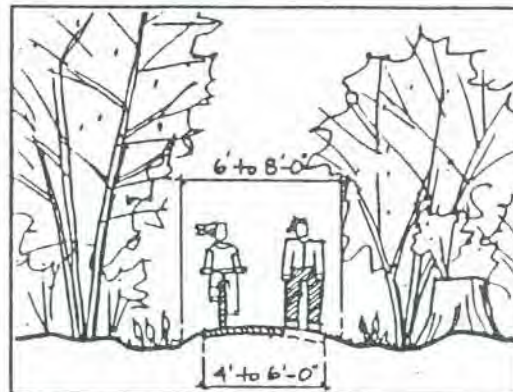


Trail Standards



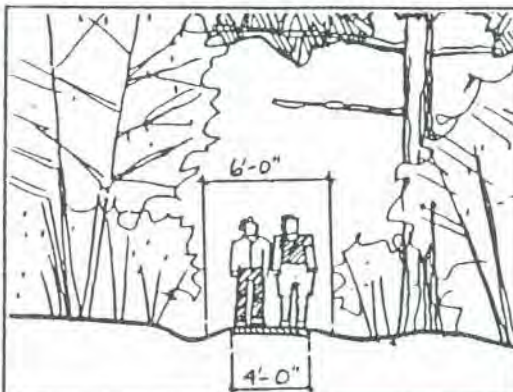
Fire Access/Multi-use Trail

Trail surface: gravel.
Ditches and culverts as required.
Bridges wide enough to accommodate uses.



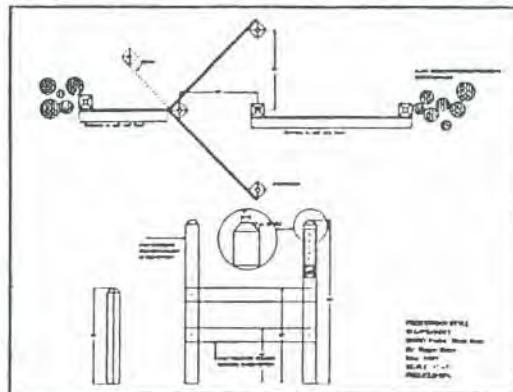
Multi-use Trail

Trail surface: native soils, gravel or chipseal on steep slopes.
Ditches and culverts as required.
Bridges wide enough to accommodate uses.



Pedestrian Trail

Trail surface: native soils, gravel where wet.
Ditches and culverts as required.
Bridges as required.



Plan View

Detail of Baffle at Entrance to Pedestrian Trail with timber posts, name signage and use designations.

not be to these maximum dimensions. However, risk management will have to be considered for any trail not meeting the suggested standard.

Various trail surfaces will be used to provide variety, but more importantly for environmental reasons. Native soils surfaces can be left in well drained, gently sloping areas. However, where native soil is quite sandy and easily eroded on slopes, gravel (road mulch) will be used. Keeping trails well drained by crowning, ditching and where necessary, culverting is essential to stop trail deterioration through heavy use, especially in wet weather conditions. In low, wet spots with organic soils a filter cloth (geotextile) may be required before applying a gravel surface.

In many places, sandy or organic soils have been loosened and eroded away from around the base of trees, exposing tree roots. Damage to tree roots in the long term will cause the death of these trees. Trails with exposed tree roots should be gravelled. This may only be required in spots and not along the entire trail length.

In the short term (1 - 5 years), the following new trail construction is proposed:

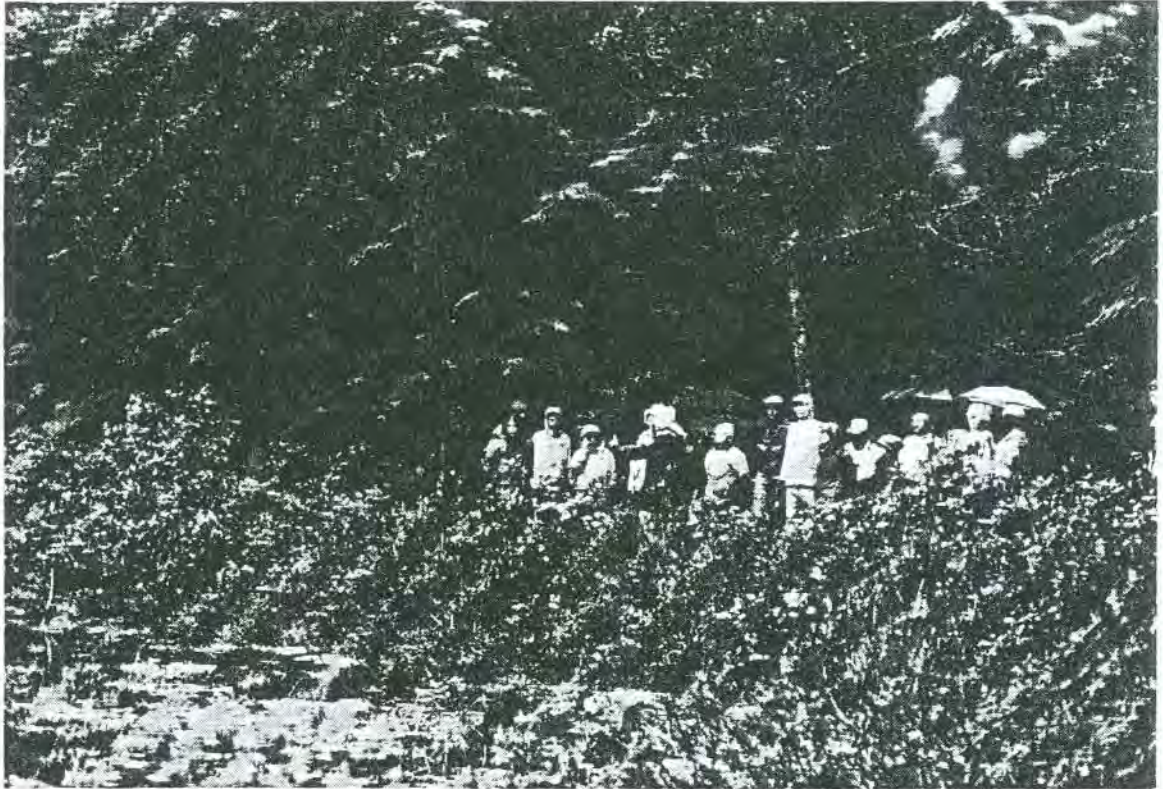
- A new "pedestrian only" trail to replace Old Wreck Beach Trail (Trail 7) which is being severely undercut by an adjacent stream.
- New "pedestrian only" trails in Camosun Bog. These will require boardwalks to prevent damage by foot traffic to the organic soils and fragile bog plants.
- A new "multi-purpose" trail on the east edge of Imperial Road to reduce the potential hazards of vehicular traffic to Park users along this north-south connector.
- Consideration will be given to a nature trail loop and a wheelchair accessible trail loop. Both would be in the vicinity of the temporary Visitor Centre.

There are many unofficial (scatter) trails in the Park. Many of them lead nowhere. They should be closed off immediately and rehabilitated, either naturally or by planting native forest plants. Scatter trails within Environmental Protection Zones, the Environmental Restoration Zones and Buffer Areas will be closed and rehabilitated. Scatter trails that do lead somewhere, or provide a logical connection between official trails will be evaluated and some may be designated as official trails.

VIPs and members of the newly formed Pacific Spirit Cycling Club have started a program of blocking off scatter trails and monitoring unofficial trail use. It is important that Park visitors understand that staying on designated trails is necessary to sustain the natural resources of the Park.

Action:

- Sign official trails at trailheads and trail intersections.
- Designate trail uses (multi purpose or pedestrian only) by way of maps and signage.
- Install barrier (baffles) at entrance points to "pedestrian only" trails.
- Continue to upgrade trails to meet designated standards.
- Upgrade fire access routes to accommodate a small, four-wheel drive truck with fire equipment trailer (presently housed at UBC Fire Station). Priorities are SW Marine Trail from Camosun Street to Salish Trail, Pioneer and Salish Trails, both north of Chancellor Boulevard.
- Consult with user groups to encourage their assistance in establishing trail maintenance priorities and trail variety.
- Liaise with volunteers concerning trail edge plant inventory and the closing and rehabilitation of scatter trails.
- Encourage interest groups and organizations to sponsor grants to assist in implementing the Park trail program.
- Continue to encourage Park users to stay on designated trails and recreate in harmony with the environment.



9.4 Beach and Foreshore

The Foreshore Unit of Pacific Spirit Regional Park extends from the Park boundary just east of Acadia parking lot around to the Musqueam Reserve. The upland boundary is Marine Drive which mostly interfaces with UBC and with some residential areas along Northwest Marine Drive. As described in Section 8.5 the beach is known as Wreck Beach and is a unique natural foreshore with "clothing optional" status.

To access the foreshore, parking is along Marine Drive, Old Marine Drive and small parking lots at Totem and Acadia. During winter months these parking areas are well used by UBC students. During the summer, beach users fill all available spaces and on peak days overflow onto UBC parking. There is no intention of increasing parking for the beach and foreshore as an increase in use is not desirable. Bicycle racks are provided at the top of Trail #6, Trail #3 and Acadia for those visitors arriving by bicycle and wishing to use the foreshore.

There are seven official trails that lead down the steep slopes from Marine Drive to the foreshore. These are:

- 1) Acadia, which is a short, gently sloping trail that also provides service vehicle access to that end of the beach.
- 2) Trail #3, also known as Graham's Gully, which is steep in places.
- 3) Trail #4, behind UBC's Museum of Anthropology. This is very steep with high step risers in many places.
- 4) Trail #6, opposite UBC's gate 6. This is the most highly used trail. It is quite steep and descends to almost opposite the Fraser River North Arm breakwater which divides the ocean beach portion of the Park from the river estuary and marsh area.
- 5) Trail #7 also known as Old Wreck Beach Trail, descends from Old Marine Drive. This trail is located adjacent to a stream and has

consequently been washed out. It is proposed to relocate this trail away from the stream edge.

- 6) Booming Ground Trail, which starts at the Fraser Historic Monument and leads east along the top of the slope before descending steeply down to the marsh. The steep section is not well constructed and difficult to maintain.
- 7) An unnamed, recently constructed trail leads west from the Fraser Historic Monument and ramps down at an easy grade to the marsh edge and then connects along the base of the foreshore slope to Trail #7. Another trail continues along the slope base to the base of Trail #6.

All these trails are designated "pedestrian only" trails, as the steep slopes and sandy soils can only withstand foot traffic, and also make the trails difficult to maintain. There are a number of scatter trails throughout the foreshore slopes. Many of these add to slope erosion and should be closed off. All scatter trails will be reviewed and a rehabilitation program established.

Toilet facilities are provided at the top of Acadia Trail, Trail #3, Trail #6 (top and base of trail) and Trail #7. All toilets at the top of trails are rental pump-out units behind wood screens. These will be replaced with the standard Park vault toilets. At the base of Trail 6 there are four toilets on a 3,000 gallon holding tank, which is pumped out by barge at high tides during the summer months. This type of facility will be added to the base of Trail #3 and Trail #4. All toilets are well cleaned daily during the high use summer months. In keeping with the natural setting of the foreshore, no other facilities are proposed.

From a health, safety and fire protection concern, no fires are allowed on the beach and no camping is allowed anywhere in the Park. There is no drinking water at the beach and no supply of potable water is proposed. This creates health concerns over food vending that may not meet Vancouver Health Department's standards. In the short term, all vendors will be required to have a licence to sell goods on the beach and the vending of foods will be increasingly monitored, with respect to Health Department concerns.

Litter on the beach is often a problem, even though beach users have traditionally carried litter to the top of the trails. GVRD supplies litter bins at trailheads and collects the litter from these locations. Beach users will be encouraged to continue to bring their litter to the top of the trails. A system of issuing litter bags will be investigated.

GVRD, local authorities and beach users have become most concerned about the anti-social behaviour especially the sale of drugs, that is taking place on Wreck Beach, especially at the base of Trail #6. Over the years pressure has built to construct a road along the beach from Acadia to Trail #6 to allow easier access for police and emergency services. This would be very costly and have devastating, irreversible impacts on the natural setting of this unique area. Alternative strategies for policing and emergencies must be found.

The Wreck Beach Task Force established during the planning process recommends that all beach users work with GVRD and the other agencies in a cooperative manner to deal with the policing and emergency issues. (See Appendix v for Task Force issues and recommendations). An Action Plan will be developed by establishing a Beach Liaison Committee.

Action:

- Name and sign all the trails in the Foreshore Unit as "pedestrian only".
- Post signs, notices and explanatory information concerning the no fires, no camping and dogs-on-leash regulations. Explain that no drinking water is available and encourage litter collection of "pack-in/pack-out".
- Provide fire-fighting tool stashes at strategic spots along the beach for initial fire-fighting response.
- Provide first-aid supplies and beach safety equipment.
- Designate and train a beach first-aid crew (volunteers from beach users) to respond to Emergency Health Services and Fire Department needs in initial emergency response.
- Provide a pull-out at the top of Trail #6 for emergency vehicles.

- Continue and improve working relationship with Coast Guard Hovercraft operation and Police, Fire, EHS and GVRD.
- Provide more Park staff patrols and increase their presence on the beach.
- Seek additional RCMP summertime staff specifically to cover the beach.
- Establish a Beach Liaison Committee to include WBPS, other beach users, UEL Ratepayers and GVRD. Consult with UBC Security, RCMP and EHS as required.
- Increase self-policing on the beach. With the WBPS, seek voluntary compliance to beach rules and regulations. Through the use of peer pressure, word of mouth, newsletters and flyers, encourage beach users to be responsible for their actions and use of the area.
- Closely monitor the curbing of illegal activities and returning the beach to a safe, user-friendly environment.
- Work with vendors to move towards compliance with the Provincial Health Act on what is acceptable to Vancouver Health Officer.

2.5 Park Information and Orientation

At present there are four un-manned information kiosks in the Park that display a Park trail map and other posted information. Three of these kiosks were constructed by the UEL Trail Riders, prior to the area becoming a Park, and are placed at:

- the trail entrance at S.W. Marine Drive and 41st Avenue
- the entrance on 16th Avenue to Sasamat Reservoir
- the entrance to Admiralty and Spanish Trails, an area sometimes referred to as "Doggie Park"

The fourth kiosk was installed by GVRD on the north side of 16th Avenue by Cleveland Trail, which is also the entrance to the Temporary Visitor Centre.

The three older kiosks will be modified so that additional information can be posted, and the trail maps will be updated. Additional kiosks will be installed at:

- the east entrance to Imperial Trail
- the trail entrance opposite 33rd Avenue
- the north side of Chancellor Boulevard at the entrance to East Canyon Trail.

The toilet screens used at the Park's Foreshore Unit will continue to be used for posting information to the Park visitor. All information kiosks (and toilet screens) will display a Park trail map and Park rules and regulations.

Additional trail maps will be posted at key trail intersections to help orient trail users along the network of trails. At certain major trailheads Park "information posts" will be installed for posting special notices and flyers. Interest groups and Park users may use these "information posts" for their own special notices, but such notices must first be approved for posting, by GVRD West Area administration. Notices without a stamp of approval will be removed by Park staff during their daily patrols of the trails.

All Park signs will be in accordance with the GVRD Parks' standards. The majority of signage is already in place. Additional signs highlighting special or environmentally sensitive areas still need to be installed. These signs should be small and unobtrusive in the natural setting, yet legible. The signage program is aimed at the casual Park visitor who is not familiar with the area, yet, it is important to strike a balance where the everyday Park user does not feel that there are too many signs.

Action:

- Continue with Park signage program.
- Upgrade the three kiosks originally constructed by UEL Trail Riders.
- Place three new kiosks as designated above.

- Ensure all kiosks and toilet screens display Park trail map, Park Rules and Regulations and emergency phone numbers.
- Install "information posts" at major trailheads.

9.6 Picnic Areas

Picnic sites are a standard park facility which will be provided in all Regional Parks. They are always well used and enjoyed by many Park visitors, especially families.

Five Park amenity sites have been identified as possible picnic areas (see Table 3, Section 6.3). These are:

- 1) Site #4 - an open grass area cleared in the 1930's when the Clinton Stables occupied the site.

This site is easily accessed from opposite 33rd Avenue for servicing and maintenance purposes (grass cutting, litter pick-up, etc.)

Picnickers would be encouraged to park at the north or south end of St. George's Trail and walk or cycle into the site. This site also has good potential for a group picnic area.

- 2) Site #7 - an open grass area known as the "Plains of Abraham" which was the site of the old Stuart farmstead.

This site will have easy access for servicing and maintenance once Pioneer trail is upgraded to fire route/multi-purpose standard. Picnickers would be encouraged to park on Chancellor Boulevard or at Spanish Banks and walk or cycle into the site. This site also has good potential for a group campground (See Section 9.7 following).

- 3) Site #8 - this site is proposed in the young alder stand north of University Hill Elementary School.

The School is ideal for providing the parking requirements. Access to the site would be down Salish Trail once it is upgraded to fire-

Some alders would have to be removed to form openings for the picnic tables. Other trees would be left to grow as shade trees. This area also has good potential for a group picnic area or group campground.

- 4) Site #9 - this large existing mowed-grass area is located on N.W. Marine Drive, 500 - 600 metres west of Acadia parking lot.

Up to ten picnic tables could be placed along the lower tree edge away from Marine Drive. A well-used unofficial trail ramps gently down to the beach towards Acadia parking lot and ends at another grassed area that could also accommodate some picnic tables. This area of foreshore is not in the "clothing optional" boundaries.

Parking for this picnic site will be difficult as Acadia parking lot is usually used to capacity and there is no shoulder parking along this section of Marine Drive.

- 5) Site #10 - this is a small, mowed-grass area with an existing parking lot opposite UBC's Totem Residence.

The mowed-grass area contains some lovely large shade trees. Up to ten picnic tables could be placed throughout this grass area. The existing paved parking lot would have to be better controlled for Park visitor use as at present the parking lot is totally utilized by UBC students. Even in the summer Totem Residence is often operational, and this parking lot is close and convenient for the residence. The scatter trail leading to the foreshore from this area should be closed and rehabilitated as it is causing an erosion problem on the steep foreshore slope.

A study of demand for picnic areas for large groups recently conducted by GVRD, indicates there is a high demand for such areas throughout the region. Sites #4 and #8 have been identified as having potential for group picnic areas and will be held in reserve for future development as funds become available.

Action:

- In the short term (1 to 5 years), establish picnic areas at Sites #4, #7, #9 and #10, consisting of mowed grass areas with five to ten picnic tables fastened down on concrete pads. Also provide well maintained litter containers. Note, Site #7 will not be established until Pioneer trail is upgraded to fire access standard.
- In the short term, but as a lower priority, install Park standard vault toilet units at Sites #4 and #7.
- Monitor use of picnic areas.
- In the long term, if demand warrants it, develop a picnic area at Site #8, and develop a group picnic area at Site #4. If demand warrants, Site #8 could also be a group picnic area.

9.7 Group Campground

GVRD recently conducted a demand study for group campgrounds. These are areas within a natural setting that organized groups, such as Scouts, Guides, Community Associations, etc., can book for an overnight camp out. Facilities at group campgrounds can range from very primitive to a full residential setting with cabins and central hall.

The demand study indicated a shortage of such facilities in close proximity to highly urbanized areas throughout the Region. GVRD presently operates two group camps, one at Campbell Valley and the other at Deas Island, along with a residential camp at Capilano River. These are well used and enjoyed by a variety of regional groups during the summer months.

Scouts within the vicinity of Pacific Spirit have used the Park for overnight exercises and camps for many years. Their request is for very primitive facilities (no shelters or tent pads). Such overnight areas should be localized so as to reduce environmental impact, and should be easily accessible for security and maintenance purposes yet isolated enough so as not to disturb neighbours or other Park users.

Sites #7 and #8 best meet these requirements and could, in the long term, be developed into group campgrounds.

Action:

- Accommodate Scouts and other groups who may wish to reserve a site for overnight use in the Park. In the short term this can be done on a Special Use Permit basis and using Site #7 on a trial basis.
- Monitor and record the demand for overnight group camping in Regional Parks and, specifically, requests for overnight use in Pacific Spirit Regional Park.
- In the long term, if demand warrants, designate Site #7 or #8 as a group campground.

9.8 Park Service Yard

The Park service yard is presently located at Chancellor Boulevard and Acadia Street adjacent to the UEL Administration and service area . It consists of an unfenced gravel area with a rental trailer (12' x 30') for office, washrooms and work space, plus two small out buildings for dry storage of flammables and tools.

GVRD is negotiating with UEL Administration for a permanent location within their service area. GVRD proposes to construct a modular building (24' x 40') for office, washroom, lunch room and some storage, with a separate structure for covered work space and additional dry storage. These structures would be housed in a fenced-off gravel yard, approximately in the same location as the existing facilities.

Action

- Provide a site plan for UEL Administration approval of the proposed Park service yard, indicating function and relationship to UEL service area.
- Negotiate a long-term agreement with UEL Administration for the required space for the Park service yard to remain in its approximate location in the existing UEL service area.

- Build a suitable fenced-off Park service yard complete with buildings for staff office, washrooms, lunch room, covered work space and dry storage. The yard area must be sufficient to accommodate Park vehicles (trucks, tractor, etc.) tools and equipment and storage of materials used on a regular basis.

9.9 Park Centre

At present the administrative headquarters for GVRD Parks West Area is located in Pacific Spirit Regional Park. The West Area administers five Regional Parks - Crippen (on Bowen Island); Capilano River and Lynn Headwaters (both on the North Shore); Iona Beach (in Richmond) and Pacific Spirit.

The administrative headquarters is located in the temporary Visitor Centre (modular unit building), north of 16th Avenue at Cleveland Trail. In time, the permanent Park Centre, proposed at Site #1, adjacent to the temporary Centre, will accommodate the West Area Park's administration and other visitor services.

Park visitors can drop by the present temporary Visitor Centre during regular office hours for Park and West Area information, and orientation to Park trails. In summer, the Visitor Centre is open daily and some interpretive displays and materials are provided. The Visitor Centre also acts as a focus for interpretive programs. In time, these functions will expand and be accommodated in the permanent Park Centre.

GVRD is presently initiating a public input process and fund-raising strategy for the Park Centre. An information display will be prepared and a public questionnaire designed to identify community needs, by the various Park interest groups.

Preliminary thinking envisages three components for the Park Centre. These are:

1. An education component including an ecology laboratory, library, and classroom/lunchroom spaces. The education component could be funded

- and managed separately with the support of a non-profit agency.
2. A public auditorium component including a multi-purpose program/seminar/rental space, a display area, public washrooms and other public support amenities.
 3. A parks administration component incorporating offices, workspace and storage for GVRD Parks West Area management activities.

Action:

- Compile preliminary public input from the questionnaire to ensure there is public commitment to a Park Centre. Ensure public participation concerning site and building design, fundraising activities and management strategies.
- Investigate the concept of a non-profit Cooperating Association management team for the educational component of this facility, assisting with planning, and providing ongoing management direction.
- Develop interpretive master plan for the Park including the visitor services component of the Park Centre with input from the public.
- Build a Park Centre, providing there is positive public support and capital and operating funds have been identified.

9.10 Interpretation and Education

Interpretation programs have been offered to the public and to school and community groups since 1985 (four years prior to the area being dedicated a Park). Interpretation programs enhance Park user's experience and increase awareness, appreciation and understanding of park resources and features. The primary intent is to promote attitudes of responsible Park stewardship among users.

Presently, park interpretation programs are for all ages and focus on developing awareness, appreciation, and understanding of special natural features and processes characteristic of Pacific Spirit. Environmental education programs are provided to school and

community groups on request. Interpretive displays are exhibited in the temporary Visitor Centre during summer.

Interpretation programs and displays to date have mostly featured the forest and Camosun Bog.

A major annual special event provides entertaining, hands-on participation by Park users and community groups. The intent is to provide public awareness of the Park's unique areas and management issues.

Action

- Design interpretive programs to enhance appreciation and understanding of the many regionally significant features of Pacific Spirit.
- Continue to offer an exciting variety of park interpretation programs in Pacific Spirit and provide a wider understanding of the Regional Park system.
- Target environmental education programs for specific areas of Park management concern.
- Encourage park users to be sensitive to and respectful of the Park environment.

9.11 Volunteers-in-Parks

Prior to the area becoming a Regional Park, many nearby residents were frequent users of the existing trail network. The local community also lobbied long and hard to have the area designated a Park, so when it happened, GVRD had many Park supporters. To continue the community involvement and to assist GVRD in patrolling such a large area and the vast network of trails, the Volunteers-in-Parks (VIP) program was developed.

VIPs assist GVRD in being the eyes and ears for the Park. They patrol trails, provide maps and information to other Park users and report existing and potential problems. New volunteer tasks include rare plant inventories and trailside vegetation surveys, to identify significant plant communities adjacent to trails before trail work begins. VIPs are also

involved with closing off unofficial trails. VIPs submit monthly reports to GVRD park staff which assist GVRD to understand what is happening throughout the Park.

The VIP program is very informal and is participant-directed. Orientation sessions are held periodically for new VIPs. Organizational and social sessions are held for regular members. Field trips are scheduled to periodically orient VIPs to sensitive or environmentally significant areas of the Park.

Action:

- Continue to encourage volunteer involvement in Pacific Spirit through ongoing cooperative management of the VIP program.
- Provide materials or support where necessary to assist VIPs in specific tasks, such as managing unofficial trails by erecting simple barriers and planting native vegetation.
- Develop new opportunities for volunteer involvement and learning as warranted by park management needs and participant needs.
- Develop and implement a system of volunteer appreciation and continuing education.

9.12 Revenue Operations

Contract commercial ventures in Regional Parks have existed for a number of years. A variety of services such as food concessions, building rentals and movie productions are supported by the public and often enhance Park visitors' experience. These types of rentals are successful because of the proven public need and because of the way these contracts area managed by GVRD. A 1989 GVRD Parks visitor survey concluded that Park visitors rated the need for food services in some parks as the second most frequent request, provided that there was a demonstrated public need and that the concession did not detract from the visitor experience.

In addition to public need for concessions is the concept of a revenue generation plan for the entire GVRD Parks. All park agencies (and other

public services as well) are under pressure to moderate costs because of the heavy demand on the property tax payer for all purposes. Generating park revenue by a variety of strategies will be investigated in order to preserve tax funds for new land purchases, park development, and essential services. Revenue generating proposals may therefore be initiated by GVRD Parks or by outside interests.

GVRD Parks System Plan and Policies (Greater Vancouver Regional District, 1985) provides direction in assessing proposals from private enterprise and special interest groups. A decision tree for special purpose projects on active and land-banked parkland provides an evaluation procedure that makes the basis for decision clear to the public and sponsors.

At Pacific Spirit various revenue proposals are beginning to emerge. Being a relatively new Park with many management issues and concerns, it is important that any revenue proposal have a strong demonstrated need and substantial public support.

Action:

- GVRD is developing a system-wide policy with respect to revenue proposals and will consider only those proposals which are consistent with that policy.
- Any proposal received will be submitted to public review before a decision is reached.
- Each proposal will be submitted for Park Committee approval.

9.13 Park Boundaries and Rights-of-Way

The 1980 report, A Regional Park for the Endowment Lands, recommended a minimum Park boundary to provide a Park area of about 608 hectares (1,520 acres). It also recommended approximately 73 hectares (180 acres) of Crown Land outside the Park boundary be labelled "Reserve" and that any use of the Reserve Lands be decided with input by GVRD, UBC, the City of Vancouver, and local residents. Part of the Reserve Lands had been identified for "good quality, reasonably priced housing" and "lower density townhouses" in a 1977 UEL study.

Marine Drive Foreshore Park (Wreck Beach) was not included in the minimum Park boundary. It was being managed by the Vancouver Parks Board and the recommendation was that its management pass to GVRD in the third year following dedication of the Regional Park.

In December 1988, Premier Vander Zalm announced the formation of a Regional Park on the Endowment Lands, including Marine Drive Foreshore Park and all the Reserve Lands (except for a small parcel on Acadia Road, opposite University Hill High School, which is reserved for a church).

The City of Vancouver also contributed land east of Camosun right-of-way that forms part of Camosun Bog. The City land consisted of 54 separate parcels with an estimated market value of over \$7 million. No estimated value was placed on the Crown Land.

Between December 1988 and April 1989 the entire Park area was legally surveyed and a total of 763 hectares (1,885 acres) was granted in fee-simple to GVRD Parks. The transfer agreement allowed a blanket easement for all utilities and roads passing through the Park. GVRD has negotiated rights-of-way for all the utilities. The negotiation was also an opportunity to discuss maintenance practices under powerlines, etc.

GVRD has a commitment from the Ministry of Transportation and Highways that the old road rights-of-way of Imperial Trail and Old Marine Drive will be transferred to GVRD Parks.

Action:

- Continue to work with Highways and utility agencies to ensure maintenance of rights-of-way are compatible with Park environment.
- Ensure Parks staff are familiar with all boundaries and monitor for encroachments such as tree cutting and dumping of refuse.
- Investigate increasing the Park boundary to include the water lots around the Park's foreshore.

9.14 Interface with the University of British Columbia

The Park surrounds UBC campus which has a population of over 35,000. Most students commute through the Park and many of them recreate in the Park. UBC Intramural Sports organizes events that often utilize the Park. Students and professors conduct research in the Park and utilize certain areas as outdoor laboratories.

Over the past year UBC has developed a Campus Master Plan. There are many design issues to be addressed to ensure the appropriate transition between the Park's natural forest and the Campus' urban landscape. There are also a number of operational issues such as parking, pedestrian access, etc. to be resolved to ensure coordination of public services.

The opportunity exists to coordinate activities proposed in the Park Centre and the Museum of Natural History proposed for UBC. Other projects such as the Incinerator Replacement, the TRIUMF-KAON project, and Hampton Place development need input and coordination with the proponents, GVRD, and the public, especially the Park users

Action:

- Work with UBC Campus Planning to ensure Campus population can enjoy the Park, and that Campus/Park interface problems are minimized.
- Continue to work with UBC Technical Committee to coordinate research and technical information that assists in the resource management of the Park.
- Ensure all UBC projects deemed to adversely impact the Park environment will receive full public review, coordinated by the proponent, to ensure the public has input to these projects.



10.0 DEVELOPMENT PROGRAM

10.1 Past Developments (1989/90)

Since the area became a Regional Park in April 1989 the GVRD has completed the following developments:

- Site Services (electrical, telephone, water, sewer and gas) installed to the temporary Visitor Centre and sized to accommodate the future permanent Park Centre.
- Temporary Visitor Centre. This building (2,400 sq. ft. modular units) contains administration offices for the GVRD Parks West Area, public washrooms, and a small multi-purpose space for meetings, visitor information and interpretation programs.
- Gravel parking areas - one in front of the temporary Visitor Centre and one adjacent to 16th Avenue, just west of Cleveland Trail.
- Fire Hydrants installed along the south side of 16th Avenue to provide better forest fire protection for this area.
- Fire-fighting equipment, which includes a small trailer outfitted for initial response to forest fires.
- Toilet Facilities provided along the Foreshore Unit of the Park. This includes temporary rental units behind screens at the top of Trail #3, Trail #6, Old Wreck Beach Trail and at Acadia parking lot and four permanent pump-out toilets at the base of Trail #6.
- Realignment of Swordfern Trail north of 16th Avenue due to impacts from adjacent development of Hampton Place.
- Trail upgrading and improvements to approximately 10 kilometres of trail; upgrading as a continuous maintenance practice.

- Camosun Bog Access - a controlled access road built to the edge of the bog from Imperial Road, and a new trail constructed from this access point through the Bog to 19th Avenue and Camosun Street.
- Camosun Bog restoration started by hand removing non-bog plant species, manipulating water levels and removing over 150 large hemlock trees by helicopter. Monitoring changes to the Bog's water levels, water nutrients, and plant growth will be an ongoing process.
- Vegetation management, for view purposes and erosion control, along the Foreshore Unit of the Park. Specifically opposite the David Lam Centre (UBC Botanical Gardens) and along Northwest Marine Drive approximately from Trail.#3 to the open grass area west of Acadia parking lot.
- Signs. Over 320 signs installed for Park identification, regulations and trail names and direction.

10.2 Proposed Park Development - Short term (1 - 5 Years)

- Park Centre to include interpretive and educational facilities, meeting space for public use and administration offices for GVRD Parks West Area. The facility will be located on the clay mound north of 16th Avenue (Table 3, Site #1).
- Main entrance area to Camosun Bog with parking/drop-off area, interpretive displays, toilets and up to six picnic tables. It will be located on the clay-fill area on the edge of Camosun Bog (Site #3).
- Picnic sites with five to ten tables and litter containers, to be located in the open grass areas (Sites #4, #7, #9 and #10). If funding is available, Old Clinton Stables (Site #4) will be developed into a group picnic area, and Plains of Abraham (Site #7) will serve as a primitive group camping area for organizations such as Scouts, Guides and other community groups.

- Toilet Facilities - plans include:
 - Installation of 3,000 gallon holding tank (pump out system) and two units (similar to base of Trail #6) at the base of Trail #3 and #4.
 - Replacing rental units with standard Park vault units at Acadia, top of Trail #3, #6 and #7 (Old Wreck Beach Trail).
 - Installation of standard Park vault units at trail entrances off 41st Avenue and off Chancellor Boulevard (opposite shoulder parking area).
 - Installation of standard Park vault units at picnic sites at Old Clinton Stables (Site #4) and Plains of Abraham (Site #7).
- Park Service Yard and Maintenance Building to include a modular building of approximately 2,000 sq. ft. and a fenced service yard in approximately the present location in conjunction with the UEL Administration service area (at Chancellor and Acadia Street).
- Construction of New Trails - plans include:
 - To replace Trail #7 (Old Wreck Beach Trail). Once this new trail is in place the existing trail will be closed off and rehabilitated.
 - Construction of boardwalks and additional trails and interpretation loop in Camosun Bog.
 - Interpretation loop and wheelchair access loop in conjunction with temporary Visitor Centre.
 - A new trail paralleling the east side of Imperial Road to make this section of road safer for cyclists, pedestrians and equestrians.

- Parking Areas, upgrading and control

- Pave Acadia parking lot and formalize with line painting.
- Place control gates and barrier rail fencing at Totem parking lot (Site #10).
- Place control gate and barriers on Old Marine Drive, define and maintain parking on gravel shoulder.
- Upgrade gravel shoulder and brush back forest edge along 29th Avenue from Camosun Street west to Imperial Road.

- Resource Management

Most of the action items as listed under Section 7.0 Natural and Cultural Resource Management will be undertaken over the next 5 years.

- Capital Maintenance

- Continue with the Park signage Program and maintenance and upgrading of existing trails.
- Continue with forest edge cleanup, closing off scatter (unofficial) trails and tree cutting for safety or erosion concerns.
- Maintain filtered or window views at the Simon Fraser Historic Monument, the view point at the east end of Old Marine Drive, opposite David Lam Centre and along Northwest Marine Drive.

10.3 Summary of Park Development Program

Past Developments (1989/90)

1. Site services (for Visitor Centre)
2. Temporary Visitor Centre
3. Fire hydrants at 16th Avenue
4. Toilet facilities
5. Trail work
6. Camosun Bog access (road and trail)
7. Camosun Bog restoration:
 - Water levels and monitoring nutrients
 - Large tree removal
 - Monitoring (from Environmental Partners Fund)
8. Vegetation Management
9. Park Signs
10. Existing Maintenance Yard

<u>Proposed Developments (Short-Term)</u>	<u>Priorities</u>		
	<u>High</u>	<u>Med</u>	<u>Low</u>
1. Park Centre			X
2. Camosun Bog:			
- Trails and Boardwalks	X	X	
- Restoration (water levels and (removal) of trees)	X	X	
- Interp. signs & pamphlets	X		
- Main entrance		X	
3. Picnic Sites			
- Sites 4 and 7	X		
- Sites 9 and 10		X	
4. Toilet Facilities			
- Base of Trail #4	X		
- Base of Trail #3		X	
- Replace Rentals	X	X	
- Park standard at 41st & Chancellor	X		
- Park standard at picnic areas			X
5. Park Service Yard and Maintenance Building	X		
6. New Trail Construction (Assisted by grant funding)			
- Replace Trail #7	X		
- Interp. loop and wheelchair access		X	
- Imperial Road Trail		X	
7. Parking Areas (Upgrading & Control)			
- Pave Acadia		X	
- Totem (Gates and barriers)	X		
- Old Marine Drive (gates & shoulders)	X		
8. Resource Management		Ongoing	
9. Trails (maintenance, signs clean up etc.)		Ongoing	

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Revised Schedule for Planning Process for Pacific Spirit Regional Park

April 1991

	1990 Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1991 Jan.	Feb.	Mar.	Apr.
A. Information Presentation & Informing the Public Presentation to:															
- WBPS _____		on-going monthly meetings													
- ELRPC _____		28													
- VNHS _____			15												
- Other(s) _____															
- Open Houses _____	25		11												
- Special Events(Eco Fair 1990) (PS Quest 1991)			22												21
B. Issue Scoping/Ranking & Suggested Resolutions															
- Workshops _____				24	21		23								
- Trail Task Force _____					26	9 30	23	13		14				12	
- Foreshore(Wreck Beach)Task Force _____												3/14/2a	13 25	7	
C. Issue Resolution Review															
- Steering Committee(GVRD Staff)								on-going (every 2 or 3 weeks)							
- Public Meetings _____										4				24	
- Park Committee _____															10
D. Keeping the Public Informed															
- VIP Meetings _____															
- Newsletter _____				*			*			*		*		*	
- Temp. Visitor Center _____															
E. UBC Liaison															
- Technical Committee _____		5			19			30			29				

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Pacific Spirit Regional Park Management Plan

OBJECTIVE

To establish a long term management plan (10 to 15 years) that:

1. Provides guidelines for park
 - resource conservation
 - developments and improvements
 - visitor services and interpretation
 - operations and maintenance
2. Estimates financial and manpower needs
3. Establishes continuing public involvement to evaluate plan refinement and achievements.

The planning process will start in spring 1990 and end in spring 1991■

STATEMENT OF PRINCIPLES

1. GVRD recognizes public involvement is essential to the planning process and guideline development.
2. GVRD is committed to the broadest possible public input process from all regional residents.
3. All sectors of the public will be encouraged to raise issues, preferences and proposals which will be circulated to participants before any policy proposals or changes are taken forward for Committee and Board decisions.
4. GVRD will maintain records of written public input and questionnaires and will indicate how this input is used in decision-making.
5. All responsible existing uses are considered basic to this plan but there must be room to discuss changes and guidelines in defining issues and prospective solutions.
6. The Plan will be developed within GVRD mandate and respect other agencies jurisdictions.
7. It is the obligation of all participants to accept the planning process as the primary means to decision making and advise GVRD if they feel the process is being circumvented■

PROCESS GUIDELINES

1. GVRD takes leadership role and facilitates planning process.
2. Workshops, task forces, public meetings are to facilitate consensus building.
3. Public input assists decision making process, but GVRD make the final decision.
4. Task forces will have equitable representation and clear terms of reference, including duration.
5. A spirit of cooperation is essential to achieve a common goal■

STARTING PREMISES

PARK MANAGEMENT

1. GVRD Regional Park policy and regulations.
2. GVRD Parks Department philosophy and management style.
3. GVRD staffing levels and budget.
4. Final decisions approved by GVRD Park Committee and Board of Directors.

ECOLOGICAL MANAGEMENT AND ENHANCEMENT

1. Protection zones
 - Ecological Reserve
 - Heronry
 - Stream corridors
 - Canyons
 - Steep slopes/bluffs
 - Old growth forest
 - Archaeological sites

2. Areas of restoration and enhancement

- Camosun Bog restoration
- U.B.C. Botanical Garden view corridor
- N.W. Marine Dr. vegetation management

PHYSICAL DEVELOPMENT

1. Temporary Visitor Centre on 16th Avenue at Cleveland Trail (including services).
2. Fire hydrants on 16th Avenue (south side) for forest fire protection.
3. Camosun Bog public access (road and parking off Imperial Road).
4. Signs - GVRD standard

RECREATION OPPORTUNITIES

1. 50+ km of existing trails.
2. Clothing optional beach.
3. Diverse forest for research, education, interpretation and enjoyment.

PUBLIC PARTICIPATION AND INPUT

There are a number of ways for people to become involved in the plan.

Workshops-The public attends round-table discussions to assist defining and resolving issues. The process is consensus-building.

Task Forces-Representatives from various recreation organizations, interest groups and enthusiastic individuals form groups to review specific issues and make recommendations for GVRD to bring forward to the general public. Equal representation and team work is desired. Terms of reference and finite time frame would be established by GVRD.

Liaison Committee-Representatives of agencies having jurisdiction or a direct interest in the Park to form a committee to coordinate information, actions, and policies on various issues pertaining to the Park Management Plan and this information is communicated to the general public.

Sub - Committee- A committee of selected Park Committee members to advise the Park Committee on various issues pertaining to the Park Management Plan.

The public will be kept informed through open houses, on-site meetings and the newsletter ■


ISSUES

PHYSICAL DEVELOPMENT

1. **Roads** - Review function of
 - Imperial Road
 - Old S.W. Marine Drive
2. **Parking** - Is more required? (If so, where?)
 - Review s.w. Marine Drive parking proposal for impacted site (opposite Kullahan Drive)
3. **Trail Heads**-Identify major and minor entry points. Determine facility/signage requirements.
4. **Trails**-Determine single versus multiple use. Standards & Signage requirements.
5. **Permanent Visitor Centre**-Determine function, size, style.
6. **Forest Fire Protection**-Review need for hydrants along Imperial and Salish Trail.
7. **Park Sanitation facilities** (size, location(s), maintenance, access, etc.)
8. **Picnic Areas Group Camp-ground**
 - Determine need, size and location
9. **Revenue Opportunities**

ECOLOGICAL MANAGEMENT AND ENHANCEMENT

1. **Urban forest management**
 - establish objectives
 - determine management prescriptions
2. **Forest edge interface with urban development** (houses, streets, schools, etc.)
3. **"Wilderness" setting along foreshore** (no views of buildings, etc.)
4. **Aspen grove management**
5. **Fish habitat enhancement** (ponds in streams, etc.)
6. **Wildlife habitat enhancement** (Bitter Cherry grove, snags, etc.)
7. **Butterfly habitat enhancement** (power line Right of Way, exotic plantings, etc.)
8. **Erosion control measures** - beach, cliffs, canyons ■

 GVRD Parks
4330 Kingsway, Burnaby B.C.
V5H 4G8 Phone: 432-6350

TERMS OF REFERENCE FOR TRAIL MANAGEMENT TASK FORCE PACIFIC SPIRIT REGIONAL PARK

BACKGROUND

Trail development and use was well established in the forested area of the Endowment Lands prior to this area becoming a Regional Park.

Approximately 50 km of trails exist and are well used by horsemen, cyclists, joggers, dog walkers, and casual hikers. Some trails are too environmentally sensitive to accommodate all uses and in some instances conflicts are apparent.

GVRD Parks will be completing a Park Management Plan for Pacific Spirit Regional Park in late 1990 or early 1991, with the objective of establishing a long term plan (5 - 10 years) that provides guidelines for Park conservation, development, interpretation, and recreational use of the Park.

SCOPE OF WORK

The Task Force will assist GVRD Parks to evaluate and provide recommendations for public review of the following:

1. Trail uses (single versus multiple, including fire access)
2. Trail standards in accordance with uses, environmental sensitivity, and maintenance budgets.
3. Trail signage requirements.
4. Define major trail-heads (park entrance points) versus minor ones and determine facilities and signage requirements at trail-heads.
5. Access management.

RESPONSIBILITIES

Task Force members will be advisory to GVRD West Area staff for a duration of approximately 3 months. Members are expected to attend approximately 6 meetings.

The Task Force will be chaired by Gordon Smith, Park Planner, who will ensure the Task Force work and recommendations are presented to the general public and reflected in the Park Management Plan.

Rules of Conduct

1. Task Forces will have equitable representation and clear terms of reference including duration.
2. Task Forces are to facilitate consensus building.
3. A spirit of cooperation is essential to achieving a common goal.
4. GVRD takes leadership role and facilitates process.
5. Task Force members are to represent their organization's interests in resolving issues and to ensure that their organization is kept informed.
6. GVRD presents information to the general public, and GVRD Park Committee.

**TERMS OF REFERENCE
FOR
FORESHORE UNIT TASK FORCE
PACIFIC SPIRIT REGIONAL PARK**

BACKGROUND

The Foreshore Unit within Pacific Spirit Regional Park is defined as the area extending from Acadia parking lot to the Musqueam Indian Reserve, and from the mean high water mark to Marine Drive, or on the boundary with UBC where the Park does not meet Marine Drive.

The Foreshore Unit, commonly know as Wreck Beach, has been known as a "clothing optional" beach since the early 1960's. In 1977 beach users realized that to keep the area in a natural state and retain the clothing optional status, beach users must organize.

The organization spearheaded by Judy Williams, took the form of various committees, but by 1980 became the Wreck Beach Preservation Society. Their mandate has remained the same from inception to the present day, and is "to preserve the Wreck Beach area in as nearly natural a state as possible".

For over a decade the Wreck Beach area was leased from the Province to the Vancouver Parks Board and was known as Foreshore Park. Administration of the area passed to GVRD Parks when the Foreshore became part of Pacific Spirit Regional Park, officially dedicated 22 April 1989.

GVRD has undertaken a Management Plan for the Park to be completed in 1991. An Interim Management Program for the Foreshore Unit of Pacific Spirit Regional Park was approved by the GVRD Park Committee in May 1990 to help address seven specific issues (see attached).

These issues are:

- A. Sanitary Facilities and Litter Control
- B. Security
- C. Emergency Services and Medical Evacuation
- D. Parking
- E. Vendors
- F. Water Quality
- G. Clothing Optional Beach Status

SCOPE OF WORK

The Task Force will assist GVRD Parks staff to evaluate issues and formulate recommendations to establish short term (5 year) operating and management strategies for Pacific Spirit Regional Park Foreshore Unit.

The following will be evaluated:

1. The above seven (7) issues as identified in the Interim Management Program, and review Zoning as proposed at the 4 November 1990 Public Meeting.
2. Any other issues as deemed priority issues by the Task Force.
3. GVRD's mandate and responsibilities as related to the Foreshore and what action can be taken.
4. Other Agencies' mandates on the Foreshore and how GVRD works to resolve issues beyond GVRD's jurisdiction.
5. Ongoing liaison after the Task Force work is complete.

RESPONSIBILITIES

Task Force members will be advisory to GVRD West Area staff for a duration of approximately three months (January to March 1991). Members or their alternate are expected to attend approximately five meetings.

The Task Force will be chaired by Bob Gibson, Administrator of Park Operations and Construction, who will ensure the Task Force work and recommendations are presented to the general public and reflected in the Park Management Plan. Use of an outside facilitator will be determined by the Task Force at the end of each meeting.

GVRD staff will formulate recommendations which will be subject to public review prior to the Park Committee for approval.

RULES OF CONDUCT

1. Task Forces are to facilitate consensus building.
2. Respect for others' differences, needs and expectations is required to provide a spirit of cooperation which is essential to achieving a common goal.
3. GVRD takes leadership role, facilitates process and Chairs the meeting. (An independent facilitator may be used from time to time.)
4. Task Force members are to represent their organization's interests in resolving issues and ensuring that their organization is kept informed.
5. GVRD staff will present recommendations to the general public by way of Public Meeting prior to taking recommendations to GVRD Park Committee. Any GVRD staff recommendations in conflict with Task Force recommendations will be flagged and justified.
6. All meetings will be open to the public (unless deemed otherwise by the Task Force). The public will have a passive role of no input or interruptions during the meetings.
7. All meetings will be formalized by having an Agenda. They will be tape recorded and minutes of each meeting produced and accuracy approved at the following meeting.



PACIFIC SPIRIT REGIONAL PARK
QUESTIONNAIRE

As a beginning to the Park Management Planning process GVRD has listed a number of Principles, Guidelines, Givens and Issues. Please read these over carefully, discuss them with Parks' staff and give us your input by answering the following questions:

1. Do you agree with these Principles? Check one: Yes No

What other ones can you suggest?

2. Do you agree with these Guidelines? Check one: Yes No

What other ones can you suggest?

3. Do you agree with these Givens? Check one: Yes No

What other ones can you suggest?

4. Do you agree with these Issues? Check one: Yes No

What other ones can you suggest?

GVRD has also defined a number of ways for you to become involved in the planning process and for you to be kept informed.

Indicate your preference by prioritizing the following (one (1) being the highest priority).

- Involved by: Workshop
Task Force
Other (specify) _____

- Kept informed by: Open Houses
On-site meetings
Newsletters
Other (specify) _____

Other information that will assist GVRD in future public participation.

1. In which Municipality do you live? _____

2. How did you hear about this Open House?

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Newspaper | GVRD
Newsletter | Poster | Word of
Mouth | Other
(specify) |

3. Did you find this Open House informative? How could the Open House be improved?

4. Other comments?

PACIFIC SPIRIT REGIONAL PARK

5 YEAR MANAGEMENT PLAN

Questionnaire

Thank you for attending the public meeting. Please state your opinions and concerns by filling out this questionnaire and leaving it with us before you depart.

1. Do you agree with the Park Management Zones?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(Please circle one)	5	4	3	2	1
RESPONSES	25	51	12	17	8

Comments:: _____

2. Do you agree with the Summary of Zone Use and Management?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(Please circle one)	5	4	3	2	1
RESPONSES	16	53	15	11	11

Comments:: _____

3. Do you agree with the Trail Uses and Standards?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(Please circle one)	5	4	3	2	1
RESPONSES	15	46	13	29	11

Comments:: _____

5 YEAR MANAGEMENT PLAN

4. List any issues you feel should be immediately addressed.

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

5. Rank the importance of the following issues on a scale of 1 to 10 (10 being the most important).

	<u>AVERAGE</u>	<u>PRIOR</u>
<input type="checkbox"/> Forest ecology and management _____	8.95	1
<input type="checkbox"/> Foreshore management _____	7.25	2
<input type="checkbox"/> Erosion control measures on beach, cliffs & canyons _____	7.37	3
<input type="checkbox"/> Fish and Wildlife habitat enhancement _____	6.51	6
<input type="checkbox"/> Roads and parking _____	3.08	10
<input type="checkbox"/> Trail heads and facility/signage requirements _____	6.98	4
<input type="checkbox"/> Trail maintenance and upgrading _____	6.62	5
<input type="checkbox"/> Permanent Visitor Centre _____	2.49	10
<input type="checkbox"/> Visitor facilities such as toilets, picnic areas and Group Camp Ground _____	2.82	9
<input type="checkbox"/> Forest Fire protection _____	5.26	7

6. Did you find the public meeting useful? How could we make it better? Any other comments?

Questionnaire about Wreck Beach

Thank you for attending the public meeting of 24 March 1991. Please state your opinions and concerns by completing and leaving this questionnaire with us BEFORE YOU LEAVE. (or mail into GVRD Parks prior to 30 March 1991).

1. Which Municipality do you live in? VANCOUVER 192; BURNABY 19; RICHMOND 8; MAPLE RIDGE 5; COQUITLAM 4; NORTH VAN 6; NEW WESTMINSTER 1; WEST VAN 1; DELTA 1; UEL/POINT GREY 4; GREATER VANC. 1; OTHER 5 (including one from Winnipeg); NO ANSWER 6.

2. How often do you visit Wreck Beach? _____

3. Do you agree with the following Park Management Zoning of the marsh area?

a) The marsh area between Booming Ground Trail and the Musqueam Reserve be in the ENVIRONMENTAL PROTECTION ZONE?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Answer
(Please circle one)	5 (130)	4 (60)	3 (13)	2 (15)	1 (24)	(11)

b) The marsh area between Booming Ground Trail and the base of the new trail from the Historic Monument site be in the ENVIRONMENTAL RESTORATION ZONE?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Answer
(Please circle one)	5 (90)	4 (73)	3 (28)	2 (13)	1 (32)	(17)

c) The rest of the marsh area be in the BUFFER ZONE?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Answer
(Please circle one)	5 (141)	4 (60)	3 (22)	2 (7)	1 (9)	(14)

Comments: _____

4. Do you agree that the CLOTHING OPTIONAL boundaries be from the Mile marker/bridge (approx. 300m from the Park boundary at Acadia) to the Booming Ground Trail (start of the Environmental Protection Zone)?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Answer
(Please circle one)	5 (164)	4 (35)	3 (22)	2 (4)	1 (13)	(15)

Comments: _____

5 YEAR MANAGEMENT PLAN

5. Do you agree with minimum development (no drinking water, no concession buildings, etc.) but that more toilet facilities are required?

	Strongly					Strongly	No
	Agree	Agree	Neutral	Disagree	Disagree	Disagree	Answer
(Please circle one)	5 (170)	4 (60)	3 (4)	2 (8)	1 (4)		(7)

Comments: _____

6. Do you agree that sand should be placed on Wreck Beach, provided it is clean and uncontaminated?

	Strongly					Strongly	No
	Agree	Agree	Neutral	Disagree	Disagree	Disagree	Answer
(Please circle one)	5 (78)	4 (77)	3 (49)	2 (17)	1 (18)		(14)

If Yes, any preferred location(s) _____

Comments: _____

7. The sale of food is controlled by the Provincial Health Act. What steps could GVRD and Vendors take to help meet the regulations?

8. The Provincial Health Act states that no dogs are allowed on public swimming beaches. What steps can be taken to help meet the regulations?

9. Do you agree with the Action Plan for Law Enforcement and Emergency Services (as written in the Task Force Summary)?

	Strongly					Strongly	No
	Agree	Agree	Neutral	Disagree	Disagree	Disagree	Answer
(Please circle one)	5 (60)	4 (81)	3 (42)	2 (13)	1 (21)		(36)

What other issues and recommendations should be considered in the Action Plan?

1. Agree (#4) with some aspects
Disagree (#2) with others - gave detailed comment.

10. Did you find the public meeting informative? Yes (189) No (6) No Answer (58)

Comments: _____

List of Wildlife Species found in Pacific Spirit Regional Park

Legend:

A = Abundance

H = Habitat

GB = General Biology

+ = Some information available

- = No specific information available

MAMMALS	A	H	GB	MAMMALS	A	H	GB
Comineus Shrew	? -	-	-	Townsend Vole	+	+	+
Bendire Shrew	+	+	-	Oregon Vole	+	+	+
Northern Water Shrew	+	+	+	Western Redbacked Vole	+	-	+
Vagrant Shrew	+	+	+	Roof Rat	-	+	-
Dusky Shrew	+	+	+	Norway Rat	-	+	-
Shrew Mole	+	+	-	House Mouse	-	+	+
Pacific Mole	+	+	+	Snowshoe Hare	+	+	-
Western Big-eared Bat	-	-	-	Black-tailed Deer	-	-	-
Silver-Haired Bat	-	-	-	Canadian River Otter	+	+	+
Big Brown Bat	-	-	-	Spotted Skunk	-	-	-
California Myotis	-	-	-	Red Fox	+	+	+
Long-eared Myotis	-	-	-	Northwestern Chipmunk	+	+	-
Long-legged Myotis	-	-	-	Chickaree (Douglas Squirrel)	+	+	+
Yuma Myotis	-	-	-	Northern Flying Squirrel	-	+	-
Little Brown Myotis	-	-	-	Deermouse	+	+	+
Raccoon	+	+	+	Mink	+	+	+
Short-tailed Weasel	+	+	+	Coyote	-	-	-

APPENDIX iv CONT'D

AMPHIBIANS AND REPTILES	A	H	GB	AMPIBIANS AND REPTILES	A	H	GB
Oregon Salamander	+	+	-	Northwestern Garter Snake	-	+	-
Western Toad	-	+	+	Northern Alligator Lizard	+	+	-
Pacific Tree Frog	+	+	+	Pacific Coast Newt	-	+	+
Red-legged Frog	+	+	+	Red-backed Salamander	-	+	+
Common Garter Snake	-	+	+	Western Terrestrial Garter Snake	+	+	-
BIRDS				BIRDS			
Great Blue Heron	+	+	+	Band-tailed Pigeon	+	+	+
Canadian Goose	+	+	+	Rock Dove	+	+	+
Mallard	+	+	+	Mourning Dove	-	+	+
Shoveller	+	+	-	Screech Owl	+	+	+
Turkey Vulture	+	-	-	Great Horned Owl	+	+	+
Goshawk	-	+	-	Saw-whet Owl	+	+	+
Sharp-shinned Hawk	+	+	-	Common Nighthawk	-	+	+
Cooper's Hawk	+	+	-	Black Swift	+	-	+
Red-tailed Hawk	+	+	+	Vaux's Swift	+	+	+
Rough-legged Hawk	+	+	+	Anna's Hummingbird	-	+	+
Bald Eagle	+	+	-	Rufous Hummingbird	+	+	+
Marsh Hawk	+	-	-	Belted Kingfisher	+	+	+
Osprey	+	+	-	Common Flicker	+	+	+
Pigeon Hawk	+	-	+	Pileated Woodpecker	+	+	+
American Kestrel	-	+	+	Yellow-bellied Sapsucker	+	+	+
Blue Grouse	-	+	+	Hairy Woodpecker	+	+	+
Ruffed Grouse	+	+	+	Downy Woodpecker	+	+	+

APPENDIX iv CONT'D

BIRDS	A	H	GB	BIRDS	A	H	GB
Ring-necked Pheasant	+	+	-	Eastern Kingbird	+	+	-
Killdeer	+	+	+	Western Kingbird	-	+	-
Common Snipe	+	+	-	Willow Flycatcher	+	+	-
Spotted Sandpiper	-	-	-	Dusky Flycatcher	+	+	-
Glaucus-winged Gull	+	+	+	Western Flycatcher	+	+	-
Mew Gull	+	+	+	Hammond's Flycatcher	+	+	-
Bonaparte's Gull	+	+	+	Western Wood Peewee	+	+	-
Violet-green Swallow	+	+	+	Olive-sided Flycatcher	+	+	+
Tree Swallow	+	+	+	Bohemian Waxwing	+	-	+
Rough-winged Swallow	+	+	+	Cedar Waxwing	+	+	+
Barn Swallow	+	+	+	Northern Shrike	+	+	+
Cliff Swallow	+	+	+	Starling	+	+	+
Purple Martin	+	-	+	Crested Mynah	+	+	+
Steller's Jay	+	+	+	Hutton's Vireo	+	+	+
Common Raven	+	+	+	Solitary Vireo	-	+	-
Northwestern Crow	+	+	+	Red-eyed Vireo	+	+	-
Black-capped Chickadee	+	+	+	Warbling Vireo	+	+	+
Chestnut-backed Chickadee	+	+	+	Orange-crowned Warbler	+	+	-
Common Bushtit	+	+	+	Yellow Warbler	+	+	-
Red-breasted Nuthatch	+	+	+	Yellow-rumped Warbler	+	+	-
Brown Creeper	+	+	+	Black-throated Gray Warbler	-	+	+
House Wren	-	+	+	Townsend's Warbler	+	+	+
Winter Wren	+	+	+	MacGillivrays' Warbler	+	-	-
Bewick's Wren	+	+	+	Common Yellowthroat	+	+	+
Long-billed Marsh Wren	-	+	+	Wilson's Warbler	+	+	+

APPENDIX iv CONTD

BIRDS	A	H	GB	BIRDS	A	H	GB
American Robin	+	+	+	Dark-eyed Junco	+	+	+
Varied Thrush	+	+	+	White-crowned Sparrow	+	+	+
Hermit Thrush	+	+	+	Golden-crowned Sparrow	+	+	-
Swainson's Thrush	+	+	+	Fox Sparrow	+	+	-
Townsend's Solitaire	-	+	+	Lincoln's Sparrow	+	-	-
Golden-crowned Kinglet	+	+	-	Song Sparrow	+	-	-
Ruby-crowned Kinglet	+	+	+	Western Meadowlark	+	-	-
House Finch	+	+	+	Red-winged Blackbird	+	+	+
Pine Grosbeak	+	-	-	Brewer's Blackbird	+	+	+
Common Redpoll	+	-	-	Brown-headed Cowbird	+	-	+
Pine Siskin	+	+	+	Western Tanager	+	+	-
American Goldfinch	+	+	+	Black-headed Grosbeak	+	+	+
Red Crossbill	+	+	-	Evening Grosbeak	+	+	-
Rufous-sided Towhee	+	+	-	Purple Finch	+	+	+
Savannah Sparrow	+	+	-				

**WRECK BEACH TASK FORCE
SUMMARY OF
ISSUES &
RECOMMENDATIONS
TO
GVRD PARKS DEPARTMENT
AND
THE PUBLIC (PUBLIC MEETING 24 MARCH 1991)**

Pacific Spirit Regional Park

Wreck Beach Foreshore

WRECK BEACH TASK FORCE - SUMMARY

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Important Highlights

- Clothing optional boundaries are unchanged (with the possible exception of the east end of marsh area)
- The Beach is to be left in as natural a state as possible
- Minimum Park development
- The Marsh is a special and fragile environment
- Recognition that public safety issues must be dealt with
- Establishment of Beach Liaison Committee and Action Plan Guidelines

1. LAW ENFORCEMENT AND EMERGENCY SERVICES ACTION PLAN

The Task Force has listened to the presentation made by the agencies and acknowledges that there are problems which must be dealt with, especially regarding safety to the public (predominantly in the Trail #6 area).

The issue is how to provide emergency services and deal with the sale of illegal substances without disrupting the natural environment and destroying the character of the beach.

Specific Issues:

- Difficulty of access to the area because of the steep terrain and erosion problems.
- Difficulty of apprehension of drug dealers.
- Inadequate parking on Marine Drive for police and emergency vehicles.
- Inadequate staff for police, emergency and administrative agencies.

Recommendations:

- Improve cooperation and coordination among agencies and beach users.
- Formation of a Beach Liaison Committee.
- Greater advantage should be taken of access from the water for emergency services.
- GVRD should consider its own hovercraft or amphibious-type craft.
- Drug sweeps should begin early and continue throughout the season in cooperation with the Vancouver Police Beach Patrol Squad.

- GVRD should request extra police and other staff for the summer months, as they do in other Regional Parks. This should be endorsed by other agencies and interest groups involved.
- GVRD staff presence and visibility should be increased.
- Education and peer pressure from beach users should be continued by newsletters, flyers, and word of mouth.
- Coordinated training exercises among fire department, coast guard, GVRD staff, EHS, beach first aid volunteers and others.
- The possibility of putting more sand on Acadia Beach should be explored. This would enlarge the Acadia Beach area and encourage people to use it rather than Trail #6, thus relieving some of the congestion at Trail #6. The more people there are at Trail #6 the more likely it is that there will be a problem.
- More fire hydrants along Marine Drive.
- Fire fighting tools and first aid supplies stashed at strategic spots along the beach area for initial response.
- Coordinate GVRD staff and Fisheries Officers regarding fires and other problems on the beach during smelt season.

Monitoring:

Results should be assessed periodically and all the players involved should be included in these assessments. (Assessments at end of each summer for the next 5 years.)

Conclusions:

A determined effort on the part of all agencies and users to get the situation under control, using the resources presently available, should be made. This should be coordinated by the GVRD.

The primary goal is to maintain the beach character, incorporating the natural beach environment without impeding the established public access and usage patterns.

2. CLOTHING OPTIONAL BOUNDARIES

Issues:

- Nudity causes discomfort to some Park visitors.
- Social tensions.
- Social clashes to be minimized, yet protect the beach character.
- Naturists do not condone anti-social behaviour (see WBPS newsletter).
- Existing boundaries (Mile marker/foot bridge to Musqueam Reserve) have been agreed upon by WBPS, RCMP and Attorney General's office since 1983.
- East end of marsh to be placed in high environmental protection zone. This limits use (whether clothed or not) and therefore limits boundary from being Musqueam Reserve.
- Earlier discussions re environmental issues recommended from Log Booming. Ground Trail to Musqueam Reserve to be placed in Environmental Protection Zone. (Environmentalists suggest larger area required in that Zone.)

Recommendations:

- West end boundary remains the same, i.e. Mile marker/foot bridge. (UEL Ratepayer's representatives on record as opposed).
- GVRD to determine area at marsh east end that will be placed in Environmental Protection Zone and establish marsh base line data and monitoring program to determine exact boundary of use.

3. VENDING

Issues:

- WBPS and beach users do not want concession stands or concession buildings on Wreck Beach.
- No potable water exists (and will not be supplied) to Foreshore.
- Food vending must meet with Provincial Health regulations to protect the public.
- GVRD strategy must be to meet the Vancouver Health Dept. requirements.
- All vending is controlled under GVRD Park regulations and may require licensing to be allowed to continue.

Recommendations:

- Work towards compliance with the Health Act or what is acceptable to Vancouver Health Officer.
- Summer 1991 continue with survey of vendors to help understand vendors and beach users'.
- Seek voluntary cooperation from vendors in seeking a solution to Health Act compliance.

4. POLLUTION/HEALTH

Issues:

- Fraser River North Arm has poor water quality.
- Sand dredged from North Arm has been proven highly contaminated with coliform bacteria.
- Dog waste.
- Toilet facilities inadequate to serve high visitor use.
- Combined sanitary and storm drain may be causing a problem.
- The Towers storm drain has been specifically flagged as being contaminated with raw sewage. (Sewer line cracks because it is too close to the surface of Marine Drive where it crosses the storm drain.)

Recommendations:

- Continue to monitor water quality. GVRD presently takes samples in both North Arm and ocean side and submits sample results to Vancouver Health Dept. Vancouver Health Dept. advises GVRD when to post "no swimming" signs. It is up to the Vancouver Health Dept. whether they release geometric mean sample results to the public (WBPS presently gets both actual and geometric mean sample results, sent to Judy Williams).
- Pressure UBC to fix the sewer line under Marine Drive where it crosses the storm drain.
- Storm drains to be phased out in the long term.
- If sand is to be placed on the Beach, contaminated sand is not acceptable.
- RODAC standards are presently used, but perhaps higher standards are required. This also applies to Point Grey Dump Site.

- It is a Provincial Health standard that dogs are prohibited at swimming beaches. GVRD tries to comply with other agencies, so in time this may apply at Wreck Beach (long term). In the short term dogs should be on a leash during summer months.
- More pump-out toilets (see AMENITIES/FACILITIES - recommendations for toilet facilities) should help the problem of inadequate toilet facilities. WBPS has agreed to continue their beach education program through newsletters, flyers and word of mouth.

5. AMENITIES/FACILITIES

a) PARKING

Issues:

- Acadia end of Beach could handle more use but only if parking can be upgraded or placed on Vancouver's Spanish Banks' west end.
- Better parking could help spread usership over entire Foreshore.
- Formalizing parking reduces environmental impact.
- Emergency vehicle parking at top of Trail #6 too limited.
- UBC concerned about beach users parking on campus and blocking emergency vehicle access spots.
- UBC has only limited parking space available for beach users. Parking lot has been eliminated posing a greater parking problem for summer 1991. (New parking structure in this area is proposed, which will help in the future.)
- UBC's proposed increases in public parking rates are excessive.
- More public transit along Marine Drive is required.

Recommendations:

- Pave Acadia Parking Lot.
- City of Vancouver should provide more parking at West Spanish Banks.
- Review parking along Old Marine Drive (Highways to turn this land over to GVRD shortly)
- Safety - speed bumps required along Old Marine Drive.
- Improve existing parking areas (but no increase in parking areas).

- Better parking at the top of Trail #6 for emergency vehicles.
- UBC will supply map to GVRD re parking availability on campus.
- Increase in parking fees should be reviewed.

b) POTABLE WATER

Issues:

- Easy access to potable water adds to problem of overnight camping and would increase general use of the area.
- Adverse environmental impact caused by installation of water lines.
- Incremental development is not desirable - supplying water could lead to flush toilets, concession building, etc. Concession stands or buildings are not wanted or needed on Wreck Beach.

Recommendations:

- No potable water to be supplied.

b) TOILET FACILITIES

Issues:

- Toilet facilities inadequate to serve high visitor use.

Recommendations:

- Expand existing pump-out toilet system.
- Add two more toilets to existing holding tank at base of Trail #6.
- Install two toilets with holding tank (same as Trail #6) at base of Trail #4. (In long term - install same at base of Trail #3).

6. USES/ACTIVITIES

Issues:

- Majority of Foreshore highly used.
- Certain areas over-used at certain times.
- Undesirable uses/activities.
- Low flying aircraft over the Foreshore is undesirable, particularly helicopter and float plane flight paths which parallel the estuary.

- Small craft impacts.
 - water skiing and parasailing dangerous
 - often too many boats moving, anchored, or beached (often left unattended)
 - engine oils/gas contaminate water

Recommendations:

- No camping.
- No mountain bikes.
- No expansion of summer-time beach activities.
- Low flying aircraft:
 - GVRD to liaise with Transport Canada re helicopter and float plane flight paths over the estuary
 - Interest groups can lobby Transport Canada by way of letters of complaint and/or give GVRD letters of support
 - Users can monitor and report offenders to Transport Canada (Call 276-6397)
- Small craft impacts
 - GVRD to liaise with Vancouver Port Authority, Coast Guard, RCMP Marine Unit, and North Fraser Harbour Commission

7. ENVIRONMENT/ENVIRONMENTAL ISSUES

a) LOG BOOMING TIE UPS/CHIP STORAGE

Issues:

- Log booms tied up with cables to trees in Park (cables damage trees and cause a safety hazard where they cross trails).
- Log booms grounding out on marsh (fish) habitat.
- Wood chips blow off storage scows and contaminate recreational water quality and beach.
- Long-term objective of removal of log booms and scows (Moorage Site #3)

Recommendations:

- GVRD to liaise with North Fraser Harbour Commission on removal of cables, additional dolphins to tie up booms, adherence to provincial/federal legislation relating to water debris, etc. (e.g. federal Fisheries Act, section on deleterious material).

b) FOREST FIRE PROTECTION

Issues:

- Cliff-face vegetation, important erosion control and natural/visual environment, must be protected in case of fire.

Recommendations:

- All agreed to fire hydrants on uplands side of Marine Drive.
- Determine what hydrants exist and feasibility of extending UBC water line to where hydrants may be required.
- GVRD liaise with UBC Fire Dept., UBC and other agencies.

c) CLEAN-UP OF FOREST AREA

Issues:

- Clean-up of forest area needed, particularly along the estuary trail.

Recommendations:

- That GVRD implement a major clean-up program of the Foreshore slopes and funds be allocated for an annual maintenance clean-up. Highest priority should be given to the estuary trail.

8. EROSION

Issues:

- Major cliff erosion problems exist behind UBC President's house above Trail #4, (west of BC Telephone towers). In addition, the gully east of Trail #3 (will impact NW Marine Drive in the near future and needs urgent attention)
- Watering (at UBC President's House) must be controlled to comply with 1979 Cliff Erosion Task Force Committee recommendations.

- Some toe-of-slope erosion (extent needs to be identified).
- Previous erosion control (rock groins and bio-engineering) not visually natural. The over armament of the Trail #4 groins are particularly unsightly.
- Buildings on ocean side of Marine Drive increases potential for erosion.
- Potential impact of extension to Green College and other proposed Campus development.
- UBC not complying with 1979 Cliff Erosion Task Force Committee recommendations.
- Additional sand or berm for toe erosion control could provide easier pedestrian access and more useable beach at high tides.

Recommendations:

- GVRD to liaise with UBC Campus planners. Seek compliance with 1979 Cliff Erosion Task Force Committee recommendations.
- More information required (perhaps study update to include hydrological study required) and update on Wolf Bauer report.
- Public must be kept informed and have input to any study and erosion control recommendations.

9. MARSH

Issues:

- Rare plants (*Typha angustifolia*), especially east end of Marsh.
- Fragile area - easily trampled.
- Depleting Fraser River resource.
- Productive fish and wildlife habitat.
- Nice place to be (visually pleasing and tranquil)
- Musqueam Indian Band exercise their native rights of hunting in marsh area.
 - hunting (by Musqueam) poses a danger and safety problem to Park visitors. Shots have been fired towards public use areas.
- Marsh has high interpretation/education values.
- Dogs trampling marsh vegetation and chasing wildlife.
- Log booms grounding at low tide impacts marsh and Foreshore.
- Increased mountain biking due to trail improvements.

Recommendations:

- Park zoning to provide high environmental protection but recognize and allow continued use, with monitoring.
- Musqueam Reserve to Logging Boom Trail placed in Environmental Protection Zone. The rest of the marsh area placed in Buffer Zone.
- Establish marsh baseline study (work with FREMP, Fisheries and UBC).
- Improve water quality through inter-agency action and governing legislation (e.g. Fisheries Act).
- GVRD liaise with Musqueam Band and B.C. Fish and Wildlife (Wildlife Act) about not shooting towards shore.
- Limits of hunting area must be defined and safety to Park users reviewed. More information required.
- Dogs on leash in marsh area at all times due to wildlife concerns.
- In the long term GVRD obtain water lot lease of marsh area.

10. VEGETATION MANAGEMENT

Issues:

- Slope and cliff-face vegetation.
 - important erosion control and natural/visual environment.
 - trees on slopes falling and roots pulling out soil, causing erosion.
- Viewing envelopes of filtered views at:
 - Fraser Historic Monument, overlooking Iona.
 - Viewpoint at east end of Old Marine Drive.
 - David Lam Centre (UBC Botanical Gardens).
 - Historic Monument on NW Marine Drive.
 - NW Marine (approx. from Trail #3 to open grass area).
- Dangerous trees on trails.

Recommendations:

- Plant slopes with a variety of indigenous species and encourage successional forest growth.
- The five important viewing locations to be maintained as pocket and filtered views.

- Danger trees and erosion causing trees will be cut in consultation, whenever feasible, with user groups. In addition, where possible leave stem 12' to 15' in place for wildlife habitat (Piliated woodpeckers) and leave the rest of the tree to rot on the forest floor.
- Letter of understanding required between GVRD and UBC concerning view policy.
- GVRD's tree planting policy (plant 2 for every one removed) should be continued , as a minimum requirement.

APPENDIX 1: Wreck Beach Task Force Members.

Wreck Beach Preservation Society:

- Judy Williams, Chairman
- Takis Elefinsiotis, Vice-Chairman
- Vernon Hale
- Chris Shelton
- James Loewen
- John Munro

Alternates:

- Craig Wilson
- Drake Barem
- Dr. Bob Brubaker

UEL Ratepayers Association:

- Joan Sprague
- Ben Moyls

Friends of Pacific Spirit:

- Bowie Keefer
- Ken Hewett
- Tom Nichols (Alternate)

Vancouver Natural History Society:

- Linda Kingston
- Steve Partington (Alternate)

Fraser River Coalition:

- June Binkert

Unaffiliated Member:

- Alan Herbert

UBC, AMS Student Environment Centre:

- Mary Jean O'Donnell

GVRD STAFF:

- Bob Gibson, Chairperson
- Mitch Sokalski, Area Superintendent
- Dave Chater, Park Operations Supervisor
- Gordon Smith, Park Planner
- Susan Cawley, Recording Secretary

GVRD staff express their sincere thanks to Task Force Members for their participation. Their time, interest and valuable input has resulted in a greater understanding of the issues and resolutions for managing the Foreshore Unit of Pacific Spirit Regional Park.

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Interest Groups

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Federation of B.C. Naturalists (FBCN)
Fraser River Coalition (FRC)
Friends of Pacific Spirit Park
Pacific Spirit Cycling Club
Save Our Parks Association (SOPA)
Scouts Canada
Southlands Planning Committee
UBC Intramural Sports
UBC Student Environment Committee
UBC Technical Committee
UEL Trail Riders
UEL Ratepayers Association
Vancouver Natural History Society (VNHS)
Volunteers in Parks (VIPs)
Wreck Beach Preservation Society (WBPS)

Agencies

B.C. Ambulance Service (UBC Station)
Coast Guard Canada (Hovercraft Service)
Canadian Wildlife Service (CWS)
Department of Fisheries and Oceans (DFO)
Fire Department (UEL/UBC Station)
Ministry of Highways and Transportation
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UEL Administration
UBC Security and Parking
Vancouver City Health Department

Workshop Participants

Friends of Pacific Spirit

Tom Nichols

Jacque Cronin (also VIP)

Ken Hewett

Wreck Beach Preservation Society

Judy Williams (also Fraser River Coalition)

Takis Elefsiniotis (also VIP)

Save Our Parkland Association

Wendy Turner

Dick Stace-Smith

UBC Student Environment Committee

Joanne Gislason

Vancouver Natural History Society

John Young

Terry Taylor (also VIP)

Frank Skelton (also VIP)

Erin Skelton (also VIP)

Fraser River Coalition

June Binkert

Federation of B.C. Naturalists

Lawrence Brown (also VIP)

Bert Brink

UEL Trail Riders

Maggie Cumming (also VIP)

Bernice Ramsay (also VIP)

Dayle Farenholtz

Margaret Young

Bicycle Association of B.C.

Dean McKay

Cyclists

Guy Mitchell

Scott Stuart

VIP Hikers/Walkers

Susanne Clouthier

David Wei

Susan Campbell

Scouts

Jim Hilton

Interest Individuals

George Ostray (area resident)

Michael Beaudry (area resident/writer)

John Ray (WC², not official)

Len Ryan (with Vancouver Parks Board, retired)

Trail Task Force Members

(Chaired by Gordon Smith, GVRD Parks)

Friends of Pacific Spirit Regional Park

Tom Nichols

Jacquie Cronin

Ken Hewett

Marjorie Maddigan

Pacific Spirit Cycle Club

Graham Clark

Sheila Clark

Dean McKay

Guy Mitchell

Scott Stewart

Dan Royea

UEL Trail Riders

Maggie Cumming

Elsie Guglick

Bernice Ramsay

Margaret Young

Vancouver Natural History Society

Erin Skelton

Frank Skelton

Terry Taylor

Volunteers-In-Parks

Susan Campbell

Terry Slack

Wreck Beach Preservation Society

Judy Williams
Takis Elefsiniotis
Marine Elger
Les Gillus
James Loewen
John Munro
Nola Stewart
Craig Wilson

Unaffiliated

Ian Belcher
Pat Harrison
Gerry Thomson
Chris Shelton

Wreck Beach Task Force Members

(Chaired by Bob Gibson, GVRD Parks)

Wreck Beach Preservation Society

Judy Williams*
Takis Elefsiniotis
Vernon Hale
James Loewen
John Munro

Alternates: Craig Wilson, Drake Barem, Dr. Bob Brubaker

UEL Ratepayers

Joan Sprague*
Ben Moyls

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Bowie Keefer
Ken Hewett
Tom Nichols (Alternate)

Vancouver Natural History Society

Linda Kingston
Steve Partington (Alternate)

Fraser River Coalition

June Binkert*

Unaffiliated Members

Alan Herbert*

Chris Shelton*

UBC, AMS Student Environment Centre

Mary Jean O'Donnell

* Sub-committee members (Chaired by June Binkert)

The principal author Gordon Smith, Park Planner thanks the following Parks, West Area staff for their assistance in producing the Management Plan:

Mitch Sokalski
Area Superintendent

Sue Ellen Fast
Park Interpretation Specialist

Roger Bean
Park Operations Supervisor

Jan West
Secretary

Participating Municipalities

Village of Anmore

Village of Belcarra

District of Burnaby

District of Coquitlam

District of Delta

Village of Lions Bay

City of New Westminster

City of North Vancouver

City of Port Coquitlam

City of Port Moody

District of North Vancouver

Electoral Area A (University Endowment Lands)

Electoral Area B

Electoral Area C (Bowen Island)

City of Richmond

District of Surrey

City of Vancouver

District of West Vancouver

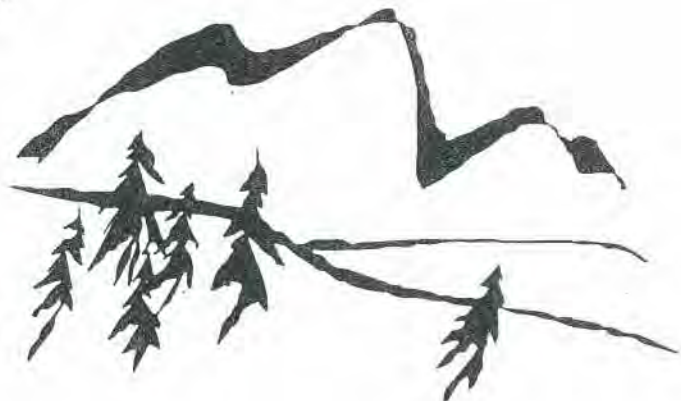
City of White Rock

Langley City

Langley Township

District of Matsqui

District of Maple Ridge



Greater Vancouver Regional District Parks