North Coast LRMP

Background Report

Protected Areas: Supporting Information

Prepared by

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BRITISH COLUMBIA

Executive Summary

This report summarizes background information about existing and proposed protected areas in the North Coast LRMP. Its purpose is to assist the planning table with discussions of Protected Areas for the LRMP. This summary includes an overview of the Coast Information Team Ecosystem Spatial Analysis and the Regional Protected Areas Team Study Areas. Additional information to support these discussions may be brought forward by members of the planning table. There is also information on the current provincial policy regarding resource-based activities within protected areas.

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1.0 Definitions

Ecosections: the province's 110 ecosections are the smallest components of the ecoregion classification system, an ecological classification system used to divide the province into distinct ecological units. The complementary use of the ecoregion classification system and the biogeoclimatic classification system allows representation to be assessed in a variety of ways and at a variety of scales.

Biogeoclimatic units represent geographic areas under the influence of the same regional climate. The biogeoclimatic subzone is the basic unit. Subzones are then grouped into zones and divided into variants and phases, reflecting similarities and differences in regional climate. These climatic differences result in corresponding differences in vegetation, soil, and ecosystem productivity. The differences in vegetation are evident as a specific climax plant subassociation on zonal sites.

Protected Areas A designation for areas of land and water set aside to protect natural heritage, cultural heritage or recreational values. Logging, mining, oil and gas development and hydroelectric development are not permitted in protected areas. The Central Coast Planning Table has identified **Protection Areas** in their process. While generally having the same characteristics as Protected Areas the focus, activities and uses within these Protection Areas is still being identified.

Protected Areas Strategy was established in the 1990s to meet BC's commitment to develop and expand the protected areas system in the province. The goals of the strategy are to protect viable, representative examples of natural diversity in the province, and special natural, recreational and cultural heritage features.

Acronyms

RPAT: Regional Protected Areas Team

PAS: Protected Areas Strategy

2.0 Introduction

Protected areas are land and freshwater or marine areas with a land component set aside to protect the province's diverse natural and cultural heritage. They are dedicated to present and future generations for a spectrum of compatible uses: as scientific benchmarks, as nature preserves, as places for education, appreciation and inspiration, and as places to enjoy recreational activities.

There are no specific % limits on the amount of protected areas that may be put forward for recommendation, however, the final set of protected areas recommended should represent a balance of ecological, social and economic considerations. To ensure that recommendations are defensible the North Coast LRMP will use the best available information and establish a transparent process that is open to and respectful of the range of interests represented at the planning table.

There are three primary sources of information guiding the recommendation of protected areas by the North Coast planning table: the Regional Protected Areas Strategy (RPAT) Gap Analysis, Coast Information Team ecosystem spatial analysis (CIT ESA), and First Nations Land Use Plans. In addition, Table members may bring forward their own candidates for protection. First Nations will bring forward their Land Use Plans to the LRMP Table. These Land Use Plans may recommend areas for protection based on criteria developed by each First Nation. A brief description of the RPAT Gap Analysis and the CIT ESA is provided below.

While the main focus of protected areas is to realize goals for conservation of representative ecosystems, biodiversity, and key habitats for rare and threatened species, areas may also be identified for protection based on cultural heritage and recreational values. Areas should be considered for protection in consideration of the implications for the range of resources, including social and economic values. The final decision on areas recommended for protection will be made by the provincial Cabinet.

In addition to identifying areas to be protected, the LRMP Table may also specify the types of activities that are permitted in each protected area. Logging, mining, hydroelectric development, and old and gas development are not permitted in any protected area. However, other uses and tenures may be permitted by grandfathering existing uses and/or by allowing new uses. All of this information will assist in developing management plans for protected areas. Appendix A contains MSRM's *Resource and Recreation Use Guidelines for Protected Areas*, which summarizes the uses that are and are not allowed within parks and under what conditions.

2.1 Regional Protected Areas Strategy Gap Analysis

The provincial Protected Areas Strategy was developed to provide a systematic approach to planning for new protected areas. The goal of the Strategy to protect 12 percent of the

province was achieved in 2000. In additional to its provincial goal, the Strategy has acknowledged that individual regions may end up with more or less than 12 percent, depending upon the values identified in the region.

The North Coast area was assessed by the Regional Protected Areas Team (RPAT) in 1994 -5 to determine the extent to which the existing protected areas represented the variety of ecosystems, special features and recreational uses[i]. This project, called a "Gap Analysis", identified a number of candidate sites, called Study Areas that have features or characteristics that may warrant protection. This Gap Analysis identified areas based upon the following two goals.

Goal 1 (Representativeness)

To protect viable, representative examples of the natural diversity of the province, representative of the major terrestrial, marine and freshwater ecosystems, the characteristic habitats, hydrology and land forms, and the characteristic backcountry recreational and cultural heritage values of each ecosection.

Goal 2 (Special Features)

To protect the special natural, cultural heritage and recreational features of the province, including rare and endangered species and critical habitats, outstanding or unique botanical, zoological, geological and paleontological features, outstanding cultural heritage features, and outstanding recreational features such as trails.

Goal 1 areas tend to be large (several thousand hectares) while Goal 2 areas are usually small (< 1000 ha). The following process was used to identify candidate study areas by the RPAT:

1) On a regional level the Regional Protected Areas Team (RPAT), comprised of government representatives from various resource agencies, including Forests, Energy and Mines, and Environment, Lands and Parks, were tasked with evaluating ecosections requiring protection based on: urgency due to rates of development; extent of remaining natural areas (options); extent of existing, large protected areas; level of existing information and resources; and, level of public interest/concern. Areas of interest from various agencies, including Wilderness Study Areas from Ministry of Forests, Parks and Wilderness Study Areas from BC Parks, formed a baseline for starting the process. Additional study areas were then identified by the Regional Protected Areas team, if required, based on gaps in representation at the ecosection level.

2) Candidate interest areas were then evaluated based on the representation of identified values within the ecosection. "Within each ecosection, protected areas should collectively contain representative examples of the full range of ecosystems and their

[i] A full explanation of the Protected Area Strategy and the regional study area project can be found in *A Protected Areas Strategy for British Columbia: The Prince Rupert Region PAS Report* (RPAT, 1996).

characteristic habitats, animals, plants, hydrology, landforms, and cultural heritage and backcountry recreation values""(Gap Analysis Workbook: PAS Criteria p.2).

The 1994/5 Gap Analysis identified four Goal 1 and fifty-six Goal 2 Study Areas for the North Coast. A summary of the Goal 1 values is shown in Appendix B. The Gap Analysis was reviewed and updated in 2001. As an outcome of the review, the existing Study Areas were confirmed and two new Goal 2 features nominated in the Hecate Lowlands. The report from the 2001 review is shown in Appendix C.

Note that the original Goal 2 areas were identified prior to the Nisga'a Agreement. There are portions of four proposed Goal 2 areas (Kwinimass River Estuary, Nass River Estuary, Winter Inlet and Stagoo) that have since been granted to the Nisga'a Nation as fee simple lands (see attached map). Nisga'a Fee Simple Lands, being privately owned, are outside of the jurisdiction of the LRMP. In addition, proposed Goal 2 areas that are outside of Nisga'a Fee Simple Lands but within the Nass Area may require consideration by the Joint Fisheries Management Committee or the Wildlife Management Committee established under the Nisga'a Final Agreement if decisions are being made that might have an impact on the harvesting of fish or designated wildlife species.

2.2 Coast Information Team Ecosystem Spatial Analysis

The Coast Information Team has conducted an Ecosystem Spatial Analysis (ESA) that identifies a network of priority conservation areas across three coastal planning areas: North Coast, Central Coast (North and South) and Haida Gwaii/Queen Charlotte Islands. This section provides an introductory overview of the ESA. A detailed report on the analysis and its components will be distributed to the planning tables in October, 2003.

The ESA integrates three basic approaches to conservation planning:

(1) *representation* of ecosystems;

(2) *conservation of critical habitats of focal species* i.e., species that (i) need large areas or several well-connected areas or (ii) are sensitive to human disturbance; and

(3) *protection of special elements*, including concentrations of ecological communities, rare or at risk ecological communities, rare physical habitats, and locations of highly values species or their critical habitats.

There are two steps to the analysis:

(1) Data development and analysis, including habitat suitability modelling and identification of ecosystem units, freshwater ecosystem classes, marine and nearshore classes, and salmon trends; and

(2) Portfolio development and assessment, in which the various layers developed in (1) are combined and conservation goals applied to identify "ecological hotspots" or

areas of priority conservation concern. The different ESA layers are brought together in a computer program called SITES that identifies areas of concentrated ecological value where the most conservation goals can be met over the smallest area or at least possible cost to other resource values. SITES does the challenging job of bringing a large number of spatial layers together to identify locations where the greatest number of native plants, animals, and ecological communities can be represented across ecosections.

The layers integrated in SITES are as follows:

1. Ecosystem Representation: The ESA used a combination of biogeoclimatic variant, seral stage (based on forest cover), and site index to define ecosystem units across the landbase. Priority conservation areas produced by SITES using these ecosystem units were then assessed for representation of *floristic types*, which are plant associations identified based on height, age class and inventory type group. The ESA priority is to capture representation of the range of ecosystem types in old forest condition across the three plan areas.

2. Freshwater Classes: Classifies the landbase based on a number of parameters, including type and size of drainage area, BEC zone, geology, stream gradient, glacial connectivity, presence of dominant lake or wetland features, and coastal connectivity. The ESA priority is to capture representation of the range of freshwater classes equally across the plan areas.

3. Focal species: Habitat suitability modelling was conducted for a number of species. The ESA priority is to capture representation of highly suitable habitat for the range of species modelled. These include: grizzly bear, black bear, mountain goat winter range, marbled murrelet, northern goshawk (nesting and foraging), and tailed frog.

4. Salmon biomass and trends: Salmon escapement data for chinook, coho, sockeye, pink [odd and even], chum, and steelhead was assessed to see whether (a) the biomass of stocks is high or low and (b) populations are stable or decreasing. The ESA priority is to capture representation of salmon stocks where the biomass is high and stocks are estimated to be stable. Each salmon species contributed a separate layer in the SITES integration. Note that the analysis does not exclude low biomass or declining stocks; rather it gives preference to stocks that are stable and of high biomass.

Once the SITES run was completed, the ESA product was assessed against the following layers to optimize the final set of priority conservation areas:

Special elements: The final ESA map was compared against point locations of special elements (e.g., CDC listed plants or plant communities) to ensure that representation of these rare features was captured.

Marine and shoreline classes: Marine and shoreline areas of high ecological value were compared to the terrestrial ESA product to see where suitable combinations of marine, nearshore and terrestrial conservation occur, providing a spectrum of representation from the ocean to the land.

3.0 Existing protected areas in the North Coast

The following summary of the existing protected areas in the Plan is taken from the North Coast Current Conditions Report (Tamblyn and Horn, 2001).

The North Coast LRMP area has both marine and terrestrial protected areas. Often the two environments are represented within a single protected area. Eleven protected areas currently exist in the North Coast LRMP area (Table 1). Four are ecological reserves, two are small roadside parks, three are marine parks set aside primarily as protected anchorages, and one is a sanctuary.

The Khutzeymateen Grizzly Bear Sanctuary is by far the largest of the existing protected areas, covering 44,902 ha. It is an intact watershed with high conservation values, containing a range of forested and non-forested habitats and high quality habitat for grizzly bears (RPAT, 1996). The recreation values are also high, with outstanding wildlife viewing opportunities that are managed in consideration of the primary conservation values, particularly grizzly bear management.

The ecological reserves at Dewdney and Glide Islands, Moore, McKenney and Whitmore Islands as well as the Byer, Conroy, Harvey and Sinnett Islands, combine land and marine environments. All the reserves have high conservation values. Moore, McKenney and Whitmore and Dewdney and Glide Islands host seabird colonies, rare plants and internationally significant coastal muskeg, while the other reserve contains habitat for the Red-listed Peale's peregrine falcon, seabird colonies and seal pupping.

The three small marine parks (Lowe Inlet, Klewnuggit Inlet and Union Passage) comprise the Inside Passage Marine Parks occur along the Grenville Channel. Conservation values are presumed low due to their small size; however, inventories to determine the specific conservation values have not yet occurred. The sites have a high recreational value for boaters and sailors requiring shelter and freshwater in a scenic setting (*Ibid.*).

Prudhomme Lake and Diana Lake are small parks located near Prince Rupert on Highway 16. Prudhomme Lake is a campground, while Diana Lake is a day-use area providing educational facilities and recreational opportunities including fishing. The cultural and heritage values for the existing protected areas have not been fully identified (RPAT, 1995).

Table 1. Existing parks and protected areas within the North Coast LRMP area.

Park / Protected Area	Size (ha)	Ecosection	Comments
Khutzeymateen Park (Sanctuary)	44,902	Kitimat Ranges (KIR)	
Dewdney and Glide Islands Ecological Reserve # 25	3,845	Hecate Lowland (HEL)	
Byer, Conroy, Harvey, and Sinnett Islands E.R. #103	Land: 425; Marine: 11,780	HEL / QCS	Actually in QCS, but included with HEL for analysis by RPAT
Moore, McKenny, Whitmore Islands E.R. #23	73	HEL / QCS	Actually in QCS, but included with HEL for analysis by RPAT
Kitson Island Marine Park	Land: 20 Marine: 24.7	HEL	From 1996 Ecosystem Management Steering Committee Report
Inside Passage Marine Parks (3 areas)	Land: 2,962; Marine: 911	HEL	Lowe Inlet Marine Union Passage Marine Klewnuggit Inlet Marine
Gamble Creek E.R. #133	984	HEL	
Prudhomme Lake	7	HEL	Highway 16 campground
Diana Lake	233	HEL	Day-use site – Hwy. 16

Source: RPAT (1996); Price and Daust (1999); *Protected Areas of BC Act*.

4.0 Current representation of ecosystems in protected areas in the North Coast

Table 2 summarizes the current state of representation of ecosystems in the North Coast and BC in protected areas, by ecosection and biogeoclimatic variant. Not represented in this table, but also important to consider are adjacent protected areas in the United States. For example, Misty Fjords National Monument to the immediate north of Portland Canal provides extensive representation of the Meziadin Mountains and Southern Boundaries ecosections, both of which might be considered under-represented by just considering the provincial statistics.

Table 2. Representation of biogeoclimatic variants and ecosections within the North Coast and BC

North Coast LRMP Area Analysis - Indicator/Zones		North Coast LRMP Landbase			Provincial Landbase		
Area in Hectares		**Total**	**Existing Protected Areas**	**P.A. representation as % of North Coast Landbase**	**Total**	**Existing Protected Areas**	**P.A.'s Represent'n**
Total Land Base		**1,672,019**	**52,279**	**3.13%**			
INDICATORS							
Biogeoclimatic Zones							
Alpine Tundra (unp)	AT (unp)	123,583	5871	**4.75%**	16,815,709	3,750,658	**22.54%**
Coastal Western Hemlock, Very Wet Hypermaritime, Central	CWHvh2	690,592	6922	**1.00%**	1,618,537	166,279	**10.27%**
Coastal Western Hemlock, Very Wet Maritime	CWHvm	241,617	4896	**2.03%**	557,064	115,975	**20.82%**
Coastal Western Hemlock, Very Wet Maritime, Submontane	CWHvm1	36,564	-	**0.00%**	1,940,347	136,955	**7.06%**

North Coast LRMP Area Analysis - Indicator/Zones		North Coast LRMP Landbase			Provincial Landbase		
Area in Hectares		**Total**	**Existing Protected Areas**	**P.A. representation as % of North Coast Landbase**	**Total**	**Existing Protected Areas**	**P.A.'s Represent'n**
Coastal Western Hemlock, Very Wet Maritime, Montane	CWHvm2	31,211	-	**0.00%**	1,233,421	107,542	**8.72%**
Coastal Western Hemlock, Wet Maritime	CWHwm	102,427	12,262	**11.97%**	323,122	24,109	**7.46%**
Coastal Western Hemlock, Wet Submaritime, Submontane	CWHws1	6538	-	**0.00%**	233,954	3097	**1.32%**
Coastal Western Hemlock, Wet Submaritime, Montane	CWHws2	12,343	-	**0.00%**	645,305	66,723	**10.34%**
Mountain Hemlock, Moist Maritime, Windward	MHmm1	272,867	21,479	**7.87%**	1,740,790	303,364	**17.43%**
Mountain Hemlock, Moist Maritime, Leeward	MHmm2	39,425	-	**0.00%**	1,269,708	129,930	**10.23%**
Mountain Hemlock, Wet Hypermaritime, Windward	MHwh	114,852	849	**0.74%**	193,239	10,013	**5.18%**
Total*		**1,672,019**	**52,279**	**3.13%**			
Ecosections							
Hecate Lowlands		738,975	7,917	**1.07%**	1,540,470	61,690	**4.00%**

North Coast LRMP Area Analysis - Indicator/Zones		North Coast LRMP Landbase			Provincial Landbase		
Area in Hectares		Total	Existing Protected Areas	P.A. representation as % of North Coast Landbase	Total	Existing Protected Areas	P.A.'s Represent'n
Kitimat Ranges		611,651	43,146	**7.05%**	2,257,985	473,899	**20.99%**
Meziadin Mountains		64,875	-	**0.00%**	444,340	2,235	**0.50%**
Southern Boundary Regions		282,723	-	**0.00%**	735,260	15,530	**2.11%**
Total*		**1,698,224**					

* There are minor differences in the total land areas shown for BEC and ecosection representation. This is because the representation was calculated in two separate assessments, resulting in minor differences in the GIS outputs.

5.0 References

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Appendix A: Resource and Recreation Use Guidelines for Protected Areas

August 1995

The protected areas component of B.C.'s Land Use Strategy

Resource and Recreation Use Guidelines for Protected Areas

In June 1993, the Government of British Columbia released *A Protected Areas Strategy for British Columbia – the protected areas component of B.C.'s land use strategy.* This policy sets forth a vision for a comprehensive protected areas system in British Columbia and a set of policies related to system goals, definitions and criteria to meet this vision; sets forth a process and associated guidelines for identifying candidate protected areas; defines linkages to land use planning processes; addresses transitional issues such as existing land and resource use tenures and the compatibility of some existing designations with the definition of protected areas; and commits the government to increase the percentage of the provincial land base dedicated to protected areas from 6% to 12% by the year 2000.

The Protected Areas Strategy identifies the broad framework within which protected areas will be examined and protected. It does not, however, explicitly address resource use issues or the appropriateness of a variety of recreation and tourism activities and services within protected areas, causing uncertainty among resource users and others participating in land use processes or potentially impacted by the designation of new protected areas.

The management of protected areas differs markedly from that of other lands and waters. The maintenance of ecological integrity, consistent with supporting recreational and cultural experiences where and when appropriate, will be the primary factor in management decisions while respecting government's land use plan commitments.

The protected areas management principles are intended to provide overall management guidance and to serve as a decision-support framework for determining appropriate uses in protected areas. The principles and accompanying policies on allowable activities within protected areas should be viewed as guidelines rather than absolutes. They are intended to provide the necessary flexibility to respond to practical realities, incorporate Cabinet directions stemming from earlier land use decisions and provide increased certainty respecting the long-term management of protected areas.

Compatibility of Selected Activities, Services and Use in Protected Areas

Activity/Use/Facility	Allowed/Not Allowed	Comments
Logging	Not Allowed	As approved by Cabinet (PAS)
Mining	Not Allowed	As approved by Cabinet (PAS)
Hydroelectric Development	Not Allowed	As approved by Cabinet (PAS)
Grazing	Allowed Subject to the Management Plan	As approved by Cabinet. Existing tenures are normally replaceable and transferable. No new tenures to be issued except for expressed management purposes as defined by a protected area management plan.
Hunting	Allowed Subject to the Management Plan	
Fishing	Allowed Subject to the Management Plan	
Fish Stocking and Enhancement	Allowed Subject to the Management Plan	The use of species or stocks not native to the watershed will not be allowed.
Trapping	Not Allowed/ Existing Tenures Grandparented	May be permitted for expressed management purposes as defined by Protected Area Management Plan. Existing tenures are normally renewable and transferable.
Horse Use	Allowed Subject to the Management Plan	Limited to designated zones and/or trails
Pack Animal Use	Allowed Subject to the Management Plan	Limited to designated zones and/or trails
Water Control Structures	Allowed Subject to the Management Plan	Only in intensive recreation zones to enhance recreational opportunities or for expressed management purposes as defined by management plan. Infrastructure existing at the time of area establishment normally allowed to remain.

Activity/Use/Facility	Allowed/Not Allowed	Comments
Powerline/Transmission Line and Other Rights-of-way	Not Allowed	Allowed if there are no practical and feasible alternatives. If present at time of area establishment, normally allowed to continue.
Communication Sites	Not Allowed	Allowed for essential protected area management communication needs or if there are not practical or feasible alternatives. If present at time of area establishment, normally allowed to continue.
Commercial Guiding Hunting Fishing Nature Tours River Rafting	Allowed Subject to the Management Plan	Permits from managing agency will be required.
Commercial Oyster and Marine Plant Harvesting	Not Allowed/ Existing Licences Grandparented	Existing licences are normally renewable and transferable.
Recreational Shellfish and Marine Plant Harvesting	Allowed Subject to the Management Plan	
Finfish, Shellfish and Marine Plant Farming	Not Allowed /Existing Licences Grandparented	Existing licences are normally renewable and transferable.
Commercial Fishing: Non-Tidal Waters Marine Waters	 Not Allowed Not Allowed	Subject to agreement by DFO
Tourism-Related Infrastructure: Resorts Lodges/Cabins Guest Ranches Backcountry Huts	 Not Allowed Allowed Subject to the Management Plan	As Approved by Cabinet (PAS) Facilities existing at the time of area establishment allowed to remain.
Marinas	Not Allowed	Infrastructure existing at the time of area establishment allowed to remain.

Activity/Use/Facility	Allowed/Not Allowed	Comments
Roads Within Protected Areas	Allowed Subject to the Management Plan	New road developments must be identified in management plan.
Off-Road Activities: Snowmobiling	Allowed Subject to the Management Plan	Limited to designated zones and/or trails
Motorized Activities (vehicles with motors)	Not Allowed	
Mechanical Activities (vehicles which are not motorized, e.g. mountain bikes)	Allowed Subject to the Management Plan	Limited to designated zones and/or trails
Water: Motorized Activities	Allowed Subject to the Management Plan	
Aircraft Access	Allowed Subject to the Management Plan	For destination access purposes only (drop visitors off)
Heli-Skiing	Allowed Subject to the Management Plan	
Heli-Hiking	Allowed Subject to the Management Plan	
Cat-Assisted Skiing	Allowed Subject to the Management Plan	
Fire Management Wildfire Management	Allowed Subject to the Management Plan	Wildfires are a naturally occurring ecological process. Policy recognizes need to protect public safety/facilities, values on adjacent lands, etc.
Prescribed Fire Management	Allowed Subject to the Management Plan	Only for expressed management purposes as defined by a protected area management plan.

Activity/Use/Facility	Allowed/Not Allowed	Comments
Prevention and Preparedness	Allowed Subject to the Management Plan	
Insect/Disease Control	Allowed Subject to the Management Plan	Indigenous insect/disease outbreaks are naturally occurring phenomena. Policy recognizes the need to prevent unacceptable damage to values on adjacent lands, prevent damage to significant recreation features or values etc. Commercial logging to remove infected trees MAY be allowed.
Exotic Organisms Control	Allowed Subject to the Management Plan	
Scientific Research	Allowed Subject to the Management Plan	Manipulative activities normally not allowed. Specimen collections only allowed if results in information providing increased scientific knowledge (e.g. geology, forestry, etc.) or protection and/or understanding of protected area values. Permits from managing agency will be required.
Ecosystem and Habitat Enhancement	Allowed Subject to the Management Plan	

Appendix B: Regional Protected Areas Team Gap Analysis - 1996

1. Campania Island Area of Interest / Official Study Area

The Campania Island Official Study Area (OSA) is found within the Hecate Lowlands Ecosection (HEL) in the North Coast Forest District. The Regional Protected Areas Team (RPAT) has classed this ecosection as a Class II ecosection, on a scale of I to IV (highest to lowest priority). This ranking is based on the current gaps in representation and the extent of existing and anticipated disturbance. The OSA consists of approximately 17,000 hectares of land and a marine component of 10,000 hectares.

Gap analysis identified the following gaps in representation in the HEL:

- complete, intact island ecosystem
- wetland complex: bogs and fens (muskeg)
- estuaries, fjord inlets and lakes
- offshore islets / seabird nesting colonies
- marine feeding areas
- marine passages with strong tidal currents
- internationally significant range of coastal marine settings - greater representation required to accommodate high levels of use
- protected anchorages

Terrestrial Ecosystem Representation

Ecosystem	Area in HEL		Area in Campania	
	hectares	Protected %	hectares	%
Alpine Tundra - AT	4,200	0	0	0
Coastal Western Hemlock very wet hypermaritime subzone - CWHvh	1,398,200	4.2	16,400	1.2
Coastal Western Hemlock very wet maritime - CWHvm	10,500	0	0	0
Mountain Hemlock wet hypermaritime subzone - MHwh	112,100	1.2	600	0.5
Total	1,525,000	4.0	17,000	1.1

Values and Attributes of the Campania Island OSA

- Ratings: Conservation - high; Recreation - high
- Special Features: Weinberg Inlet; McMicking Inlet (Goal 2 areas)
- intact island ecosystem
- lowland coastal muskeg (fens and bogs) with several rare/unusual plants
- long, narrow inlets linked to freshwater lakes
- marine habitats, including small estuaries and extensive kelp beds off west coast
- presence of rare benthic marine algae (*Codium ritteri*) off north coast of island
- recreational opportunities: protected anchorages, remote white sand beaches, good hiking opportunities, easy overland travel through muskeg, warm upland lakes

2. Dundas Island Area of Interest / Official Study Area

The Dundas Island Official Study Area (OSA) is in the northern portion of the Hecate Lowlands Ecosection (HEL), in the North Coast Forest District. The Regional Protected Areas Team (RPAT) has classed this ecosection as a Class II ecosection, on a scale of I to IV (highest to lowest priority). This ranking is based on the current gaps in representation and the extent of existing and anticipated disturbance. The OSA consists of approximately 22,000 terrestrial hectares, with a marine component of 36,000 hectares.

Gap analysis identified the following gaps in representation in the HEL:

- complete, intact island ecosystem
- wetland complex: bog and fens (muskeg)
- fjord inlets, estuaries and lakes
- offshore islets / seabird nesting colonies
- marine feeding areas
- marine passages with strong tidal currents
- internationally significant range of coastal marine recreation settings - greater representation required to accommodate high levels of use
- protected anchorages

Terrestrial Ecosystem Representation

Ecosystem	Area in HEL		Area in OSA	
	hectares	Protected %	hectares	%
Alpine Tundra - AT	4,200	0	0	0
Coastal Western Hemlock very wet hypermaritime subzone - CWHvh	1,398,200	4.2	22,300	1.6
Coastal Western Hemlock very wet maritime - CWHvm	10,500	0	0	0
Mountain Hemlock wet hypermaritime subzone - MHwh	112,100	1.2	0	0
Total	1,525,000	4.0	22,300	1.5

Values and Attributes of the Dundas Island OSA

- Ratings: Conservation - very high; Recreation - high to very high
- cluster of intact island ecosystems along outer coast
- marine feeding habitats - shallow reefs and bays, mudflats
- coastal muskeg and scrubby forest
- rocky islets - seabird colonies including pigeon, guillemot, black oystercatcher, glaucous-winged gull and the red-listed pelagic cormorant
- extensive kelp beds
    - passages with strong tidal currents which ensure a good exchange of water and nutrients
    - recreation opportunities and settings including fishing, sea kayaking, rock / sand beaches, coastal marine channels / inlets

3. Pearse Island Area of Interest / Official Study Area

The Pearse Island Official Study Area (OSA) is entirely within the Alaska Panhandle Mountains (APM) ecosection. This ecosection has been ranked by the Regional Protected Areas Team as a Class II ecosection, on a scale of I to IV (highest to lowest priority). This classification is based on the current gaps in representation and the extent of existing and anticipated disturbance in this ecosection. The OSA, which encompasses an intact watershed between the Pearse Canal and the Portland Inlet, is 11,000 hectares.

Gap analysis identified the following gaps in representation in the APM:

- low elevation productive forest - Coastal Western Hemlock
- estuaries and riparian habitats
- maritime elements
- mountain hemlock - amabilis fir - yellow-cedar forest (montane/subalpine)
- fjord, river/floodplain/delta, estuarine and forested slope to alpine backcountry recreational settings
- boating, sport fishing and wildlife viewing opportunities
- marine park candidates for representation of fjords and estuaries

Terrestrial Ecosystem Representation

Ecosystem	Area in APM		Area in OAS	
	hectares	Protected %	hectares	%
Coastal Western Hemlock very wet hypermaritime subzone- CWHvh	192,100	0.4	10,300	5.4
Coastal Western Hemlock - CWH (all other subzones)	152,400	0.5	0	0
Mountain Hemlock, moist maritime subzone - MHmm	168,200	0.4	0	0
Mountain Hemlock - wet hypermaritime, windward variant - MHwh1	5,100	0	1,000	19.6
Alpine Tundra - AT	106,300	0.4	0	0
Total	471,500	0.4	11,300	2.4

Values and Attributes of the Pearse Island OSA

- Ratings: Conservation - very high; Recreation - medium
- intact watershed
- coastal temperate rainforest ecosystems - Coastal Western Hemlock very wet hypermaritime subzone (CWHvh)
- riparian habitat
- recreational boating and ocean fishing
- maritime elements
- alpine backcountry recreation setting/opportunity

4. Stephens / Porcher Islands Area of Interest / Official Study Area

The Stephens / Porcher Islands Official Study Area (OSA) is found within the Hecate Lowlands (HEL) ecosection, in the North Coast Forest District. The Regional Protected Areas Team (RPAT) has classed this ecosection as a Class II ecosection, on a scale of I to IV (highest to lowest priority). This ranking is based on the current gaps in representation and the extent of existing and anticipated disturbance. The OSA consists of approximately 16,000 hectares of land, with a marine component of 40,000 hectares.

Gap analysis identified the following gaps in representation in the HEL:

- complete, intact island ecosystem
- wetland complex: bogs and fens (muskeg)
- fjord inlets, estuaries and lakes
- offshore islets / seabird nesting colonies
- marine feeding areas
- marine passages with strong tidal currents
- internationally significant range of coastal marine recreation settings - greater representation required to accommodate high levels of use
- protected anchorages

Terrestrial Ecosystem Representation

Ecosystem	Area in APM		Area in OAS	
	hectares	Protected %	hectares	%
Alpine Tundra - AT	4,200	0	0	0
Coastal Western Hemlock very wet hypermaritime subzone - CWHvh	1,398,200	4.2	16,300	1.2
Coastal Western Hemlock very wet maritime - CWHvm	10,500	0	0	0
Mountain Hemlock wet hypermaritime subzone - MHwh	112,100	1.2	0	0
Total	1,525,000	4.0	16,300	1.1

Values and Attributes of the Stephens / Porcher OSA

- Ratings: Conservation - very high; Recreation - high
- Special Features: Oval Bay/Welcome Harbour; Stephens Passage; and Kitkatla Inlet (Goal 2 areas)
- large protected marine inlets - Kitkatla, Porcher, Billy Bay
- coastal muskeg and scrubby forest
- very important wetlands, tidal flats and marine shallows for waterfowl
- red and blue-listed species - trumpeter swan, brant, oldsquaw, western grebe, pacific loon and great blue heron
- large herring spawn
- Oval Bay - long sandy / pebble beach with excellent beachcombing opportunities
- protected anchorages, including Welcome Harbour
- existing BC Forest Service Recreation Site at Welcome Harbour

Appendix C: Protected Areas Strategy Gap Analysis Update – 2001

Prepared by Jim Pojar and Denise Van Raalte

1. Hecate Lowlands

The Hecate Lowland Ecosection - HEL - is part of the Coastal Gap Ecoregion. This narrow band of coastal lowland and island archipelago has been heavily glaciated and exhibits large areas of glacially abraded, exposed bedrock. The topography is quite rough, but total relief does not exceed 650 meters. The climate is dominated by frontal systems moving inland from the Pacific Ocean and subsequently rising over the Coast Mountains to the east. While windward rainfall is heavy , it is less intense than in other coastal stretches because the Coast Mountain barrier is significantly lower and the orographic effect less pronounced.. A-frame logging has occured along most marine channels, as well as some hand and clear-cut logging. There is also mining activity, commercial and recreational fishing, and shipping corridors. The area has high potential for commercial recreation and aquaculture. Commercial recreation has significantly increased in the last decade.

Attributes of the Hecate Lowland

- long, deep fjords, fjord lakes, fjord lagoons with tidal rapids
- intricate shoreline with myriad reefs and islands, large and small with one of the world's largest tidal ranges
- extensive shoreline with diverse intertidal and subtidal habitats provides essential habitat to shorebirds and waterfowl of the Pacific Flyway
- productive estuaries and protected inlets, which provide very important habitat for a variety of, salmonids, eulachon, finfish and shellfish
- marine feeding areas; passages with strong tidal currents; seasonal concentrations & migration of cetaceans, salmon, and finfish
- complex of hypermaritime peatlands (bog and fens), colloquially known as muskeg, is a unique and internationally significant feature of the lowland
- lots of old, height-class 3 forest and scrubby bog forest
- rocky islets provide important nesting habitat for seabirds, Bald Eagle, Peregrine Falcon, Sea Lion haul-outs and pupping areas. Sea otters, extirpated during the fur trade, are re-establishing populations in the south. They are a keystone species in the maintenance of kelp-forest ecology.
- Inside Passage marine route is internationally significant with high scenic values
- recreational activities - marine boating, sport fishing, sea kayaking, wildlife viewing, beach combing
- native and European heritage sites

Current Protected Areas (Terrestrial)

Hakai RA	52,289 ha
Dewdney / Glide Islands ER	3,703 ha
Klewnuggit Inlet Marine PP	1,476 ha
Lowe Inlet Marine PP	547 ha
Union Passage Marine PP	991 ha
Penrose Island Marine PP	890 ha
Codville Lagoon Marine PP	493 ha
Diana Lake PP	252 ha
Jackson Narrows Marine PP	34 ha
Oliver Cove Marine PP	29 ha
Kitson Island Marine PP	14 ha
Prudhomme Lake PP	5 ha
Gamble Creek ER	963 ha

These areas represent 4.0% of the ecosection. Additional representation within the HEL arising from the Coast Land Use Process Agreement and Central Coast LRMP are expected to increase representation of this ecosection in the near future.

Terrestrial Ecosystem Representation

Ecosystem	Total	Protected	
	hectares	hectares	%
Alpine Tundra - AT	4,160	0	0
Coastal Western Hemlock very wet hypermaritime subzone, southern variant - CWHvh1	123,655	0	0
Coastal Western Hemlock very wet hypermaritime subzone, centrral variant - CWHvh2	1,220,125	59,000	4.84
Coastal Western Hemlock very wet maritime subzone - CWHvm	10,500	0	0
Mountain Hemlock wet hypermaritime subzone, windward variant – MHwh1	117,030	1,180	1.01
Lakes	65,000	1,510	2.32
Total	**1,540,470**	**61,690**	**4.00**

Gaps in Representation

In 1994, the Regional Protected Areas Team (RPAT) ranked each ecosection based on existing gaps in representation and the extent of existing and anticipated disturbance. The HEL was and still is ranked as a Class II ecosection on a scale of I to IV (highest to lowest priority).

Updated (2001) identification of gaps in representation:

- complete intact island ecosystem
- bogs and fens (coastal muskeg)
- fjord inlets and lakes
- estuaries and maritime habitats
- offshore islets - seabird nesting colonies and marine mammal haulouts
- productive oldgrowth (temperate rainforest) on richer bedrock types, especially metamorphics
- karst ecosystems
- marine feeding areas
- marine passages with strong tidal currents
- range of coastal marine settings and recreational activities are internationally significant - greater representation is required to accommodate levels of use.

Areas of interest evaluated by the RPAT to fill these identified gaps included:

Simpson / Gamble PAS

Aristazabal Island

Anger / Pitt Island PAS

Bardswell Group

Banks Island PAS

Campania Island PAS

Koeye PAS

Dundas Island PAS

Stephens / Porcher Islands PAS

Spirit Bear (Princess Royal)

Johnston Creek

Allard Creek Watershed

Tuwartz Inlet

Goal 1 Areas of Interest:

The RPAT identified four high-ranking Goal 1 areas of interest (see Appendix B):

- Campania Island -- this intact island ecosystem has other-worldly coastal bogs and fens and adjacent marine habitat. the northern half of the west coast has long narrow inlets, extensive kelp beds and recreational values such as protected anchorages and remote white sand beaches that are uncommon for this Ecosection. There is high potential for backcountry activities.
- Dundas Island -- This outer coast island with rocky islets supports colonies of both red- and blue-listed seabirds. There are extensive kelp beds and marine feeding habitats, in shallow reefs and bays. Recreation values are very high, with sand beaches, boating, fishing and sea kayaking opportunities.
- Spirit Bear (Princess Royal Island) -- This proposal is centred around a long, protected fjord inlet. The area has high cultural / heritage values and is the home to a population of black bear with a high frequency of white bears, called the Kermode or Spirit Bear. Recreational opportunities include fishing, boating and wildlife viewing. Part of Princess Royal Island has been recommended as a "Protection Area" through the Coast Land Use Process Agreement reached in April 2001 and is currently being implemented through the Central Coast LRMP pursuant to the Coastal Agreement and associated Accords and Measures. Direction on this and other "Protection Areas" arising from the Central Coast is expected in the near future. Additional "Protection Areas" identified as part of the Coastal Land Use Process Agreement in the Central Coast are also within the HEL.
- Stephens / Porcher Islands -- The large sheltered marine inlets are very important wetlands for shorebird and waterfowl abundance and diversity. Red- and blue-listed bird species overwinter, breed or stage from this area. Recreation values are very high, with good camping, kayaking, fishing and diving opportunities.

Goal 2 Special Features:

- Bonilla Island / North Danger Rocks -- This small island and surrounding islets are a popular sea lion haul-out.
- Big Bay / Pearl Harbour -- This large, shallow intertidal zone is listed as critical to migratory waterfowl and has high waterfowl abundance and diversity.
- Lucy Islands -- Supports seabird colonies including largest rhinoceros auklet colony on BC coast, and receives high recreational use.
- Skeena River Estuary -- These tidal mudflats and wetlands are critical juvenile salmon habitat and important migratory / wintering waterfowl habitat.
- Chapple Inlet (Princess Royal Island) karst -- transferred to Central Coast LRMP.
- Aristazabal Island karst (2001 proposal) -- isolated occurences of forest on limestone (and potential karst) in a vast plain of muskeg.

- Alwyn Lake oldgrowth forest (2001 proposal) -- Includes impressive stands of temperate rainforest in Port Edward watershed.
- Recreational Systems -- In addition to the sites listed above, approximately 40 recreational boating sites have also been identified in this ecosection. These are generally smaller sites that are suitable for anchorage, camping or other recreational activities, and complement the Inside Passage Marine boating system.

2. Kitimat Ranges Ecosection

The Kitimat Ranges - KIR - is the mountainous portion of the Coastal Gap Ecoregion. This ecosection includes both the windward and the leeward slopes of the Kitimat Ranges. While this portion of the coast receives the greatest frequency of frontal weather systems, the lower Coast Mountain barrier and the long fjords allow some of the moist coastal air to flow eastward to the interior, thereby reducing the overall precipitation. Logging has occurred along the Nass, Skeena, Kitimat, Kimsquit, Dean and Bella Coola valleys, as well as A-frame and hand logging along marine channels. There are sea terminal developments in the Kitimat and Bella Coola river estuaries.

Attributes of the Kitimat Ranges

- massive rounded mountains of monolithic granite, dissected by internationally significant fjords
- fjord lakes, fjord lagoons with tidal rapids
- extensive floodplains - Terrace - Kitimat valley is a large glacial outwash plain
- temperate rainforest with western hemlock, western redcedar, amabilis fir, Sitka spruce; subalpine forest with mountain hemlock, amabilis fir, yellow-cedar
- floodplains dominated by Sitka spruce, black cottonwood, red alder and willows
- estuaries, tidal marshes, rich intertidal and marine environments
- fish/wildlife including Grizzly Bear, Black Bear (also the white colour [Kermode] phase) Mountain Goat, salmonids, Eulachon, overwintering and migratory waterfowl
- recreational settings: coastal marine channels, forested, freshwater lakes, coastal rivers, alpine backcountry
- part of Inside Passage recreational corridor traverses the KIR
- special features: spectacular fjords, hotsprings, estuaries, coastal temperate rainforest
- cultural heritage - extensive traditional settlements; trading trails to interior

Current Protected Areas in the KIR

Exchamsiks River PP	21 ha
Fiordland RA	77,115 ha
Gitnadoix RA	56,320 ha
Green Inlet Marine PP	13 ha + marine
Khutzeymateen PP	43,225 ha
Kitlope Heritage Conservancy PP	232,740 ha
Sir Alexander Mackenzie	5 ha
Skeena River ER	105 ha

Protected areas that have been government accepted resulting from the Kalum LRMP and the Kalum portion of the Coastal Land Use Process agreement are as follows:

Foch Gilttoyees Park and Protected Area	60,000 ha (inc. marine)
Exchamsiks River Protected Area Addition	1,565
Brim River/Oywacumish River	1,386 ha
Dala / Kildala River Estuaries	452 ha (inc. marine)
Nalbeelah Creek Wetlands	311 ha
Kitimat River Ecological Reserve	39 ha
Douglas Channel Recreation System (inc. marine)	
Eagle Bay	259 ha
Coste Rocks	35 ha
Jesse Falls	19 ha
Sue Channel – Hawkesbury Island	60 ha
Sue Channel – Loretta Island	148 ha
Weewanie Hotsprings	31 ha

These sites total 64,359ha within the KIR. The break down by biogeoclimatic zone is not currently calculated for these areas, so sites are not included in table below. These areas increase the amount of protected areas by 3% from 18.14 % of the ecosection to 21%.

Terrestrial Ecosystem Representation

Ecosystem	Total	Protected	
	Hectares	Hectares	%
Alpine Tundra – AT	368,450	103,785	28.17
Coastal Western Hemlock - CWHms2	52,720	0	0
Coastal Western Hemlock - CWHvh2	57,245	0	0
Coastal Western Hemlock - CWHvm	550,040	89,140	16.21
Coastal Western Hemlock – CWHvm1	258,800	27,830	10.75
Coastal Western Hemlock – CWHvm2	179,200	24,545	13.70
Coastal Western Hemlock - CWHwm	12,260	12,260	100.0
Coastal Western Hemlock - CWHws2	58,090	28,585	49.21
Mountain Hemlock – MHmm1	593,250	107,790	18.17
Mountain Hemlock – MHmm2	51,465	8,980	17.45
Mountain Hemlock – MHwh1	25,080	0	0
Lakes	51,385	6,625	12.89
Total	2,257,985	409,540*	18.14

*Total does not include recently protected sites recommended by the Kalum LRMP totalling ~64,359 ha..

Gaps in Representation

In 1994, the Regional Protected Areas Team (RPAT) ranked each ecosection based on existing gaps in representation and the extent of existing and anticipated disturbance. The KIR was and still is ranked as a Class IV ecosection, on a scale of I to IV (highest to lowest priority).

Since this gap analysis, the boundaries of the ecosection have been modified, moving the eastern boundary westward (creating the KIM and NAM ecosections).

Identified gaps in representation:

- estuaries and marine environments
- coastal temperate rainforest (CWHws) in main Kitimat Valley
- additional marine park candidates
- coastal marine channels / islands

Areas of interest evaluated by the RPAT to fill these gaps in representation included:

Khyex/ Exchamsiks PAS

Cascade Inlet PAS

Kalone/ Dean River PAS

Ellerslie/ Ingram/ Mooto Foch/ Miskatla/Kitsaway PAS

Green Inlet/ Carter Lake

Brim/Oyacumish Rivers

Gribbell Island

Spirit Bear

Dean River

Goal 1 Areas of Interest:

The RPAT identified one high-ranking Goal 1 area of interest:

- Spirit Bear(Princess Royal Island) -- This proposal was ranked high in the Hecate Lowland ecosection. To maintain biologically significant boundaries, the adjacent portions of the watershed in the KIR are also being recommended, even though the area does not fill the identified gaps in the KIR. Part of Princess Royal Island has been recommended as a "Protection Area" through the Coast Land Use Process Agreement reached in April 2001 and is currently being implemented through the Central Coast LRMP pursuant to the Coastal Agreement and associated Accords and Measures. Direction on this and other "Protection Areas" arising from the Central Coast is expected in the near future.

Goal 2 Special Features:

- Brim River Hotsprings/Oyacumish River -- Hotsprings with unusual plant communities, spectacular waterfall, boat anchorage and shelter. Oldgrowth temperate rainforest in Oyacumish River valley. The Kalum LRMP has recommended these sites for protection
- Dala / Kildala Estuaries -- Important wetlands / estuary complex. The Kalum LRMP has recommended this site for protection.
- Douglas Channel Recreation System -- This system of 14 locations includes boat anchorage sites and shelters, hotsprings, waterfall, beaches, fishing opportunities and a scuba dive site. The Kalum LRMP recommended 9 of the 12 sites within the plan area for protection. These areas include: Coste Rocks, Foch Lagoon estuary and narrows; Giltoyees Inlet estuary and the "Hook"; Jesse Falls, Sue Channel – Hawkesbury Island, Sue Channel – Loretta Island and Weewanie Hotsprings. Two sites, Shearwater Hotsprings and Bishop Bay Hotsprings will be addressed by the upcoming North Coast LRMP.

- Swanson Bay -- Historic site of the first pulp mill in BC. This area is being considered by the ongoing Central Coast Land and Resource Management Plan.
- Kitkiata Creek / Quaal River Estuary -- Highly productive wetlands. This area will be considered by the North Coast Land and Resource Management Plan.
- Lower Kyhex River -- To protect a small intact watershed and an excellent stand of old-growth Sitka spruce. This area will be considered by the North Coast Land and Resource Management Plan.
- Lower Skeena River Sites -- Very productive wetlands and mudflats. This area will be considered by the North Coast Land and Resource Management Plan.
- Nass River Estuary -- Highly productive wetlands and estuaries. This area will be considered by the North Coast Land and Resource Management Plan.
- Nass River ERP #118 -- Floodplain island and associated plant communities. There is no LRMP process scheduled for this area.
- Kwinamass River Estuary -- Important wetlands and saltmarsh for waterfowl and grizzly bears. This area will be considered by the North Coast Land and Resource Management Plan.
- Crow Lagoon -- This scenic anchorage is formed by a perfectly circular flooded crater, with steep to vertical walls. This site is part of Portland Canal/Observatory Inlet Recreation System. This area will be considered by the North Coast Land and Resource Management Plan.

3. Meziadin Mountains Ecosection

The Meziadin Mountains Ecosection - MEM - is found in the Nass Ranges Ecoregion. This new ecosection is made up of the eastern portion of the old Alaska Panhandle Mountains ecosection and the south-eastern portion of the old Boundary Ranges ecosection. This rugged mountain area lies on the leeward side of the Boundary Ranges. There is a strong rainshadow, as the western summits protect this area from some Pacific air, at the same time cold interior air can build up in this ecosection, providing some drying, although the interaction of cold and warm air can lead to heavy snowfalls. The mountain summits have small icefields or glaciers.

Current Protected Areas

Gingietl Creek Ecological Reserve	1,737 hectares (1,163 ha in NAB)
Bear Glacier Protected Area	502 hectares (80 ha in SBR)

These areas make up about 0.5 % of the ecosection.

Terrestrial Ecosystem Representation

Ecosystem	Area in MEM	Protected	
	Hectares	hectares	%
Alpine Tundra - AT	197,550	500	0.25
Coastal Western Hemlock wet submaritime - CWHws2	35,840	755	2.11
Engelmann Spruce Subalpine Fir wet very cold - ESSFwv	103,880	330	0.32
Mountain Hemlock moist maritime – MHmm2	43,160	605	1.40
Lakes	5,770	45	0.80
Unknown	58,140	0	0
Total	444,340	2235	0.50

Gaps in Representation

In 1994, the Regional Protected Areas Team (RPAT) ranked each ecosection based on existing gaps in representation and the extent of existing and anticipated disturbance. The MEM did not exist at the time of the gap analysis. Gap analysis was completed on the Alaska Panhandle Mountain and Boundary Ranges ecosections.

Identified gaps in representation of the Boundary Ranges ecosection were:

- full range of forested ecosystems
- coastal temperate rainforest (CWHwm)
- low elevation river valleys dissecting the ranges
- riparian habitats with high fish, wildlife and waterfowl values

Identified gaps in representation in the Alaska Panhandle Mountain ecosection were:

- low elevation, productive forest (CWHvh, wm)
- estuaries and riparian habitats
- maritime elements
- mountain hemlock - yellow-cedar subalpine forest
- fjords
- recreation settings such as river / floodplain / delta, fjord, estuarine, sheltered anchorage, cultural heritage, and forested slope to alpine backcountry

Goal 1 Areas of Interest:

No areas of interest were identified in the area that is now classified as the MEM.

4. Southern Boundary Ranges Ecosection

The Southern Boundary Ranges Ecosection - SBR - is found in the Boundary Ranges Ecoregion. Most of this ecosection occurs in Alaska. The communities of Stewart and Kincolith occur near the southern boundary. This ecosection used to be part of the Boundary Ranges (BOR) ecosection and the Alaskan Panhandle Mountains (APM) ecosection. The SBR tends to be lower in elevation than the Central and Northern Boundary Ranges (CBR, NBR) ecosections, with a greater proportion of summits and ridges that were over-ridden by Pleistocene ice. The climate is more coastal, due to Portland Canal and Observatory Inlet, which bisect the ranges as far north as the Cambria Icefield. Logging to date has been limited to the Kincolith drainage and A-frame and selective logging of the forests adjacent to Portland Canal and Observatory Inlet.

Attributes of the Southern Boundary Ranges

- granitic and volcanic bedrock; long, coastal fjord channels
- wet and snowy, rugged mountains; extensive icefields
- steeply graded creeks, productive estuaries
- coastal climate, leeward location relative to Alaskan Panhandle
- coastal muskeg common along outer coast
- coastal temperate rainforest (CWHvh, wm, ws); western hemlock and Sitka spruce predominate; less western redcedar, amabilis fir (except Kitsault valley)
- riparian habitats with Sitka spruce and western hemlock; extensive cottonwood, alder, willow (no aspen) on wetter sites
- mountain hemlock - yellow-cedar forest is typical at higher elevations
- alpine is predominantly covered by glaciers and snow, including the Cambria Icefield
- recreation opportunities include boating, sport fishing, backcountry recreation and mountaineering

Current Protected Areas

Bear Glacier	80 hectares (500 ha in MEM)
Border Lake Park	800 hectares
Craig Headwaters PA	7,400 hectares
Lava Forks Park	7,258 hectares

These areas make up 2.11% of the ecosection.

Terrestrial Ecosystem Representation (in BC only)

Ecosystem	Area in SBR	Protected	
	hectares	hectares	%
Alpine Tundra – AT	314,350	4,000	1.27
Coastal Western Hemlock wet maritime - CWHwm	149,900	6,520	4.35
Mountain Hemlock unresolved - MHun	109,350	4,520	4.13
Lakes	8,135	490	6.02
Unknown*	153,525	0	0
Total	735,260	15,530	2.11

* unknown pending revised ecosection analysis

Gaps in Representation

In 1994, the Regional Protected Areas Team (RPAT) ranked each ecosection based on existing gaps in representation and the extent of existing and anticipated disturbance. This ecosection has been defined since that time. Gap analysis has not been completed for this new ecosection. Gap analysis was completed on the old APM and BOR ecosections.

Identified gaps in representation of the Boundary Ranges ecosection were:

- full range of forested ecosystems
- coastal temperate rainforest (CWHwm)
- low elevation river valleys dissecting the ranges
- riparian habitats with high fish, wildlife and waterfowl values

Identified gaps in representation in the Alaska Panhandle Mountain ecosection were:

- low elevation, productive forest (CWHvh, wm)
- estuaries and riparian habitats
- maritime elements
- mountain hemlock - yellow-cedar subalpine forest
- fjords
- recreation settings such as river / floodplain / delta, fjord, estuarine, sheltered anchorage, cultural heritage, and forested slope to alpine backcountry

Goal 1 Areas of Interest:

The RPAT identified one high-ranking area of interest:

- Pearse Island -- This area includes an intact watershed on Pearse Island between Pearse Canal and Portland Inlet. This site includes representative coastal temperate rainforest (CWHvh), and riparian habitat.

Goal 2 Special Features:

The Portland Canal / Observatory Inlet Recreation System was identified. The following briefly summarizes the values of the 6 sites within the system (Crow Lagoon is also in the system but is in KIR ecosection):

- Wales Harbour -- safe anchorage with opportunity for sport fishing
- Manzanita Cove -- historic site location of an old concrete block house from the US / Canada boundary dispute era; beach and hiking trail, suitable anchorage
- Winter Inlet -- excellent anchorages and good crabbing
- Maple Bay -- safe harbour with sport fishing and camping opportunities
- Larcom Island -- harbour with sport fishing opportunities
- Stagoo Bay -- safe anchorage; estuary with representative wetland vegetation