



*A Component of
British Columbia's
Land Use Strategy*

North Coast Land and Resource Management Plan: Final Recommendations



North Coast Land and Resource Management Plan: Final Recommendations

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ACKNOWLEDGEMENTS

The North Coast Land and Resource Management Plan was produced by the North Coast LRMP Planning Table, which included representatives of nine public sectors, eight First Nations, local governments and the provincial government. These representatives absorbed a massive amount of information and worked hard in producing the land use recommendations contained in this document. Many of those involved volunteered an enormous amount of time. Their efforts made this plan possible. The co-chairs of the Table were Don Scott and Clifford White. At the completion of the LRMP, members of the Table and their alternates were:

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The North Coast LRMP was initiated by the Government of British Columbia as part of the province's strategic land use planning policy. In addition to the co-chairs, numerous government staff and consultants provided facilitation, mediation, process and technical support.

The North Coast LRMP process was designed with an emphasis on providing comprehensive resource information and technical resource analysis to address issues and values within the plan area. The Government Technical Team (GTT) was responsible for providing information and analysis, as well as drafting planning products for the LRMP Table to use during its deliberations. The GTT consisted of domain experts from the Forest Science section of the Ministry of Forests, the Ministry of Sustainable Resource Management and the Ministry of Water, Land and Air Protection. The Coast Information Team, an independent body, provided coast-wide resource information and analysis to the LRMP Table.

EXECUTIVE SUMMARY

The North Coast Land and Resource Management Plan (LRMP) covers approximately 1.7 million hectares of land. The LRMP represents the consensus reached by the participants of the North Coast LRMP Planning Table. The Table met for 29 months from February 2002 to June 2004. The Table consisted of representatives of nine public sectors, eight First Nations, local governments and the provincial government. The LRMP contains seven chapters which are described below.

1. Introduction

This chapter gives a physical, social and economic description of the North Coast LRMP area and its communities. It also describes the planning process, including an overview of the process, participants in the process, the participation of the Nisga'a Nation (which has a treaty with the governments of British Columbia and Canada), the participation of other First Nations (which do not yet have treaties), decision-making and consensus, the relationship to coast-wide planning, and communications.

2. First Nations Planning and Participation

This chapter was prepared by First Nations participants in the North Coast LRMP. It describes their perspective on matters relating to the North Coast LRMP. This chapter has not been formally reviewed, endorsed, agreed to, or ratified by the Table and does not form part of the LRMP recommendations from the Table.

3. Ecosystem-Based Management

The Terms of Reference for the North Coast LRMP Process, and the *General Protocol Agreement on Land Use Planning and Interim Measures* signed in 2001 between the Provincial Government and signatory First Nations, both provide that the North Coast LRMP be developed and based on the principles of ecosystem-based management (EBM). The introduction to this chapter describes the general features of EBM, the importance of traditional ecological knowledge, the relationship between maintaining ecological integrity and providing human well-being, and documents how the North Coast LRMP meets the requirements of an EBM plan.

The second section in this chapter provides more detailed descriptions of an EBM system for the North Coast. The Table recommends adoption of the EBM Framework developed by the Coast Information Team. It also recommends adoption and use of the EBM Planning Handbook (also produced by the Coast Information Team) as guidance in the development of EBM plans, forest development plans and forest stewardship plans. There are also recommendations for: applying the targets from the EBM Planning Handbook to the North Coast LRMP area (including refinement of ecosystem representation targets); making social choices about the targets; and transitional targets that should be revisited by the North Coast Monitoring Team by March 31, 2005. This section also describes the relationship between the EBM Planning Handbook and the General Management Direction presented in Chapter 5 of the LRMP recommendations. The EBM Planning Handbook is considered to provide the primary management direction for those topics covered by the Handbook. The General Management Direction provides incremental management direction for topics covered by the Handbook, and primary management direction for those topics not covered by the Handbook. Any conflicts between the Handbook and the General Management Direction are to be addressed by the North Coast Monitoring Team and the EBM Council.

Some of the work on developing General Management Direction was not completed prior to the deadline for completing LRMP recommendations. The Table provides recommendations for how that work should be completed.

The Table also recommends: the use of adaptive management to update the plan; a process for establishing legal objectives; and a transition process for achieving EBM. Additional recommendations address the reallocation of operating areas for forest license holders and the establishment of a community forest licence for the City of Prince Rupert.

4. Land Use Designations and Direction

The Table recommends four different land use designations: Protection Areas, Biodiversity Areas, Special Forest Management Areas, and EBM Operating Areas. Together, the existing Protected Areas, recommended Protection Areas, Biodiversity Areas and Special Forest Management Areas comprise approximately 603,000 hectares, or 35% of the land base.

The Table also recommends a flexibility principle, an equivalency provision, and community priorities to be considered as land use designations are finalized through government-to-government discussions.

4.1 Protection Areas

The primary purpose of Protection Areas is habitat conservation, maintenance of bio-diversity, ecosystem representation and function, protection of key habitats for wildlife, including rare and threatened species, seral stage diversity, and/or the protection of special landscape, recreation and cultural heritage features. In Protection Areas:

- a) commercial forestry, mineral exploration and development, and hydro-electric development are prohibited;
- b) First Nations sustenance traditional and cultural uses are permitted provided that they are carried out within ecological limits; and
- c) other permitted uses, and the levels of such permitted uses (e.g. tourism, recreation, etc.) are to be determined in a manner that respects and recognizes the primary purpose of Protection Areas.

The Table recommends the establishment of 18 Protection Areas larger than 4,000 hectares in addition to the existing Protected Areas:

Banks North	KsiX'anmas (Kwinamass)	Sparkling
Campania	Khyex	Stagoo South
Crab Lake	Lowe-Gamble-Alty	Stephens Island Group
Dundas-Melville	Lower Ecstall	Tuck-Woodworth Lakes
Europa Lake	Monkton	Union Lake
Khtada Lake	Porcher West	Upper Ecstall

The Table also recommends the establishment of 37 smaller Protection Areas, five of which are included within the larger Protection Areas:

Aristazabal North	Gunboat Harbour	Shearwater Hotsprings
Aristazabal West	Kitkiata Inlet	Skeena River Estuary Sites
Ashdown Island	Kitsault Estuary	Stair Creek Eco Reserve
Bishop Bay	Larcom Lagoon	Thulme Falls
Bonilla Island	Lower Skeena River Sites	Turtle Bay
Captain Cove	Lucy Islands	Union Passage
Crow Lagoon	MacDonald Inlet	Wales Harbour
Dudevoir Passage	Manzanita Cove	Weeteem Bay
East Simpson Lake	Maple Bay	Winter Inlet
Ethelda Bay	North Danger Rocks	Zumtela Bay
Fin Island	Quottoon Narrows	

Three additional areas will be addressed in government-to-government discussions.

Together, existing Protected and recommended Protection Areas comprise approximately 408,000 hectares, or 24% of the land base.

The Table recommends that the North Coast Monitoring Team finalize the list of values and develop strategic management direction for each Protection Area.

4.2 Biodiversity Areas

Biodiversity Areas are defined as areas where commercial forestry and major hydro-electric development¹ are prohibited but mineral exploration and development are permitted. These areas are considered part of the Mineral Zone of the Two-Zone system for mineral exploration and mining in BC, in accordance with EBM. The primary role of the Biodiversity Areas is conservation and the contribution to the maintenance of species, ecosystems and seral stage diversity and ecosystem function. Biodiversity Areas contribute to strategic level conservation values by being located adjacent to Protection Areas or existing parks, resulting in large aggregations of lands managed for biological diversity. The specific purpose of individual Biodiversity Areas will vary depending upon the specific resource values and attributes found within that area. Biodiversity Areas can contribute to increasing knowledge by serving as control sites for research (e.g. benthic monitoring). Biodiversity areas may also contribute significantly to recreational, cultural heritage and tourism economic objectives provided they are consistent with EBM, Biodiversity Area objectives and final management plans drafted by the North Coast Monitoring Team. In Biodiversity Areas:

- a) commercial forestry and major hydro-electric development are prohibited.
- b) First Nations traditional uses are permitted provided that they are carried out within ecological limits.

The Table recommends the establishment of five Biodiversity Areas:

¹ Major hydro-electric development is defined in terms of the ecological impact of the development, not in terms of the size of the development (e.g., power output, length of transmission line, or size of creek developed). Major developments include dams on major drainages, major river and creek diversions, and developments requiring major infrastructure with a potentially large impact on water, fish, or ecosystems. Examples of acceptable minor developments with low impact are: dams on small creeks to supply power for local facilities like tourism lodges and exploration camps; and small run-of-river developments where some water is pipe-fed to a turbine to generate power for a local project.

Alwyn Lake
Johnston-Quaal

Kingkown
Pa'aat

Porcher Island

These areas comprise approximately 96,000 hectares.

The Table recommends that the North Coast Monitoring Team finalize the list of values and develop strategic management direction for each Biodiversity Area.

4.3 Special Forest Management Areas

Special Forest Management Areas are areas where:

- a) commercial forestry and major hydro-electric development are prohibited.
- b) First Nations traditional uses, mineral exploration and development, tourism, recreation and other activities are permitted and shall take place as if in EBM Operating Areas.

The Table recommends the establishment of two Special Forest Management Areas:

Kitsault-Stagoo

Kshwan

These areas comprise approximately 99,000 hectares.

The Table recommends that the North Coast Monitoring Team finalize the list of values for each Special Forest Management Area.

4.4 EBM Operating Areas

The areas not designated as existing Protected Areas, recommended Protection Areas, Biodiversity Areas, or Special Forest Management Areas are recommended as EBM Operating Areas. These areas are available for the full range of economic uses, provided that such uses are consistent with the application of EBM principles described in Chapter 3 and the general management direction described in Chapter 5. These areas comprise approximately 1.1 million hectares, or 65% of the land base.

5. General Management Direction

This chapter contains the recommended General Management Direction to be applied on Provincial Crown land in the LRMP area. General Management Direction includes:

- Management Intent – a broad goal statement describing the desired outcome of management
- Objectives, Indicators and Targets – detailed descriptions of desired outcomes of management
- Management Considerations – additional considerations provided as advice to developers

General Management Direction applies to all parts of the LRMP, provided that it is consistent with the values and land use designations described in Chapter 4. General Management Direction is provided for the following resources or values:

Access Management	Grizzly Bears	Timber
Aquatic and Riparian Ecosystems	Marbled Murrelets	Tourism
Black/Kermode Bears	Mineral and Energy Resources	Ungulates
Coarse Filter Biodiversity	Non-commercial Recreation	Visual Management
Cultural Heritage Resources	Northern Goshawk	

The Table agreed on Management Intent for all resources and values. The Table agreed on all Objectives for all resources and values, except for one Objective for Coarse Filter Biodiversity. Indicators or targets were still under development at the LRMP deadline for the following resources or values:

Aquatic and Riparian Ecosystems	Marbled Murrelets	Timber
Coarse Filter Biodiversity	Non-commercial Recreation	Ungulates
Grizzly Bears	Northern Goshawk	

6. Community Stability and Economic Development

This chapter describes the Table’s community and economic development interests for the LRMP area. It includes an agreement on “**No net job loss or better**” as well as economic and social goals for the area.

7. Implementation, Monitoring and Amendment

The Table recommends a structure to implement the LRMP that involves a local North Coast Monitoring Team (with representation from stakeholders and First Nations), an EBM Council and a Science Team. The recommendations describe the relationships between these bodies and local government, provincial government, and First Nations. The Table recommends that the North Coast Monitoring Team receive information and advice from the EBM council and Science team, but maintain the responsibility for making social choice recommendations on the North Coast LRMP. They also recommend a seamless transition from the planning into a Monitoring Team, and require appropriate levels of funding to support monitoring and amendment activities. Monitoring and amendment processes are also described.

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1. INTRODUCTION

This document represents the Recommendations Package for the North Coast Land and Resource Management Plan (LRMP). The Recommendations Package was prepared by a dedicated group of individuals including First Nation, local and provincial government representatives as well as sectors representing a broad cross-section of the interests in the North Coast Plan Area.

The North Coast LRMP recommendations were developed over 29 months and are part of an overall Coast Sustainability Strategy coordinated by the provincial Ministry of Sustainable Resource Management. The plan strives to find a balance between economic, social and ecological values in the management of the North Coast Land and Resource Management Plan area.

All land use and resource management activities within the North Coast LRMP area are subject to legislation and regulations related to the management of provincial Crown lands and resources. The LRMP, once it is approved by Cabinet, will provide direction to land use and resource management activities at more detailed levels of planning. This management direction has been developed to be consistent with goals and principles of ecosystem-based management where environmental, economic, and social (including cultural) values are to be balanced on the land base.

This document contains:

- A description of the plan area, including social, economic, and environmental attributes;
- An overview of the planning process, including a description of ecosystem-based management;
- An explanation about the participation of the First Nations and the Nisga'a Lisims Government in the planning process;
- General management direction, in the form of zones, objectives, indicators and targets;
- Objectives and indicators for community stability and economic development; and
- A process for implementation, monitoring, and amendment of the plan, including provisions for transition to ecosystem-based management.

1.1 The Plan Area

1.1.1 Physical Description

The North Coast LRMP area is located in northern BC at the southern end of the Alaska Panhandle. The plan area is bounded by the Pacific Ocean to the west and the Coast Mountains to the east (Map 1). The Skeena River bisects the mainland, while ocean straits, channels and inlets cut through the rugged landscape and separate the mainland from numerous islands. Small to mid-sized lakes dot the coastal lowlands and numerous streams and small rivers originate in the mountains to the east.

Reflective of the area's geography, the climate is coastal. The ocean moderates temperatures and prevailing westerly winds deliver large amounts of rain. Winters are mild and summers are cool relative to areas further inland. Temperatures range from an average of 15.5°C in July to -2.2°C in January. Prince Rupert averages 1408 hours of sunshine and greater than 250 centimetres (98 inches) of precipitation per year. Snow is not uncommon at sea-level in the winter months, although it does not tend to accumulate. Deep accumulations of heavy, wet snow are common at high elevations. This combination of cool and wet conditions supports a lush and diverse vegetation typical of temperate rainforests along the coast of British Columbia.

The North Coast LRMP area has three biogeoclimatic zones: Coastal Western Hemlock (CWH: 66.7%), Mountain Hemlock (MH: 25.8%) at higher elevations, and non-forested Alpine Tundra (AT: 7.5%). The area overlaps one eco-province, three eco-regions and seven eco-sections (four terrestrial and three marine). Organisms on the North Coast are adapted to the structural and functional features of these ecosystems. The forested portion of the North Coast is part of the perhumid coastal temperate rainforest. This forest type is characterized by old-growth conifer stands with a complex structure, often including very large, old trees. Some of the unique and sensitive ecosystems contributing to the diversity and productivity of the LRMP area include riparian corridors, floodplains, estuaries, tidal marshes, marine shoreline salt spray zones, limestone and karst geologies, freshwater wetlands (including sloped blanket bogs), talus slopes, and rock bluffs. Approximately half of the land base in the North Coast is non-forested (alpine and low elevation muskeg).

The area is highly diverse biologically. The area supports over 500 known salmon stocks in at least 167 different streams. In addition to the five species of Pacific salmon, the plan area supports a diversity of vertebrates, including 33 species of fish, 6 amphibian species, 1 reptile species, 248 bird species, and 62 species of mammals (rodents, bats, small carnivores etc. to large mammals excluding whales and dolphins)².

1.1.2 Social and Economic Description

Approximately 17,000 people lived in the North Coast LRMP plan area in 2001. Roughly half of this population base is of First Nation ancestry. Most inhabitants of the North Coast (>80%) live in the town of Prince Rupert. The remainder of the population live in communities in various locations along the Coast. Communities outside of Prince Rupert include Port Edward, Metlakatla, Hartley Bay, Lax Kw'alaams, Gitxaala, and Oona River. Most of these communities are remote and are accessible only by air or water. All North Coast communities maintain a strong connection with the ocean and natural environment, which provides sustenance, livelihood, and recreation to those who live there.

² Liepins, S. 2002. *NCLRMP vertebrate species list by lifeform*. Draft 1: 15 April 2002. Also see: Gordon, D. and M. Bahr. 2003. *Freshwater and Anadromous Fish and Fish habitat in the North Coast*. LRMP Background Report.

Most of the coastal communities outside of Prince Rupert are First Nations villages. The Tsimshian, Nisga'a and Haisla people note they have inhabited the area for thousands of years. Tsimshian communities located in the plan area include Hartley Bay, Gitxaala, Lax Kw'alaams, and Metlakatla. Other Tsimshian communities that are involved in the process due to their historical relationship of use in the area include Kitselas and Kitsumkalum. The Haisla community of Kitimaat is located outside of the plan area; however, Haisla traditional territory includes portions of the North Coast LRMP area. The Tsimshian First Nation of Kitasoo has land and resource interests within the North Coast LRMP boundary, but will be involved in developing land use planning outcomes through government-to-government discussions. The Tsimshian First Nations and Haisla Nation are each involved in treaty negotiations and have signed framework agreements (in 1997 and 1996, respectively).

The Nisga'a Nation has a treaty with B.C. and Canada. Nisga'a Lands as defined in the *Nisga'a Final Agreement* are outside of the area discussed in the LRMP. However, the Nisga'a Nation has fee simple properties within, and specific treaty rights over, that part of the LRMP area that coincides with the Nass Area and the Nass Wildlife Area as defined in the *Nisga'a Final Agreement*.

The North Coast has one of the most diversified resource economies in northern British Columbia. The City of Prince Rupert is the main administrative and service centre for the region. The mainstays of the economy in the plan have historically been commercial fishing and fish processing, timber harvesting and processing, tourism (salt water fishing) and the public sector. Primary resource industries (fishing and forestry) are the key private sector contributors to the local economy. Transportation and tourism are significant and growing sectors. Mining and high technology have a good probability of contributing significantly to the economy in the future. The economy of the North Coast is tied strongly to economies outside of the region.

Commercial fishing, forestry, and public administration are the primary sources of employment in the First Nations communities. Several communities are exploring opportunities in timber, aquaculture, and tourism. In general, community populations have been steady to slightly declining during the latter 1990's with some positive growth in recent years.

A reliance on primary resource extraction makes the economy of the North Coast very sensitive to economic cycles. The economy of the area has been hard hit in recent years, with severe reductions in the fishing, forestry and related transportation industries.

1.2 The Planning Process

1.2.1 Process Overview

The North Coast LRMP is a terrestrial plan and does not address marine issues, such as aquaculture and offshore oil and gas, except to the extent that these activities might require some land-based infrastructure. The LRMP Planning Table did consider protection of foreshore and near shore areas under provincial jurisdiction, where adjacent terrestrial values were being considered for protection. Members of the LRMP Table have noted that the separation of the marine and terrestrial components of the plan area is not ideal, yet recognize the limitations of operating within existing administrative boundaries and the allotted timeframes.

The overall purpose of the North Coast LRMP plan is to:

- Foster economic and environmental sustainability through an ecosystem-based management (EBM) approach which relies on traditional, local and scientific knowledge and includes the establishment of Protection Areas and mechanisms to ensure the maintenance of ecological integrity and healthy human communities in the plan area;
- Deliver a comprehensive system of area specific management direction that clearly describes the location of each area and its resource values, general management direction for each area, management objectives and strategies applicable to specific areas, and any implementation requirements such as policy or legislative change; and
- Identify economic, environmental, social and community transition requirements and strategies.

The LRMP recommendations package was developed over 29 months, beginning with the first Table meeting in February, 2002. Table 1 summarizes the planning process from its initiation in February 2002 until its completion in June 2004:

Table 1: Planning process and products.

Planning Step	Products
1. Process Initiation	<ul style="list-style-type: none"> • Terms of Reference/ Ground Rules • Work plan
2. Assess Situation	<ul style="list-style-type: none"> • Develop plan vision and goals • Review resource maps and background reports, including the benchmark socio-economic and environmental assessment • Identify sector interests and indicators • Policy review
3. Scenario Development and Analysis	<ul style="list-style-type: none"> • Scenario development, including map products and management intent • Scenario analysis, including socio-economic and environmental analysis of preliminary scenarios
4. Negotiate Agreement	Develop recommendations package: <ul style="list-style-type: none"> • General and area-specific management direction • Implementation and transition strategies • Other recommendations, as required • Interim public review
5. Ratify and Approve Plan	<ul style="list-style-type: none"> • Final recommendations drafted, • Final Socio-Economic and Environmental Assessment (SEEA) completed, • Minister, Deputy Minister and Executive briefed on final recommendations and SEEA, • Final recommendations and SEEA go out for public review and comment, • Government to government process to address unresolved First Nations interests, • Recommendations from government-to-government process drafted. • Final Table recommendations, recommendations from government-to-government, SEEA and public review comments go to cabinet for final approval.

Negotiations by the LRMP Table were supported by an extensive body of information from a number of sources. These included the North Coast Government Technical Team (GTT), domain experts in various fields from outside of government, local and traditional ecological knowledge and the Coast Information Team. The Coast Information Team was an independent science body with the mandate of undertaking research and analysis to provide a coast-wide context for strategic planning (see Section 1.2.6).

1.2.2 Participation in the planning process

The LRMP Table followed a sectoral model of representation, with representation from members of public and First Nations, local and provincial governments. The following sectors and governments participated in the LRMP process:

- Community Economic Development
- Conservation and Environment
- Fish and Wildlife Habitat
- Labour
- Major Forest Companies
- Mining and Exploration
- Recreation
- Small Business Forestry
- Tourism
- Gitga'at
- Haisla
- Gitxaala
- Kitselas
- Kitsumkalum
- Allied Tsimshian Tribes of Lax Kw'alaams
- Local government (2seats)
- Metlakatla
- Nisga'a Lisims Government
- Provincial Government

1.2.3 Nisga'a Nation

The Nisga'a Nation, Canada and British Columbia entered into the *Nisga'a Final Agreement* on May 11, 2000. The *Nisga'a Final Agreement* is a treaty and land claims agreement within the meanings of sections 25 and 35 of the Constitution Act, 1982. Specific rights and obligations of the Nisga'a Nation, British Columbia and Canada are identified within the Agreement.

The Nisga'a Nation has certain interests within the northern part of the North Coast LRMP plan area, mandated by the *Nisga'a Final Agreement*, including:

- Specific properties owned in fee simple;
- Commercial recreation tenure areas;
- Specific designated heritage sites;
- Guide outfitter area;
- Specific angling guide license streams.

These listed areas of Nisga'a Nation ownership and/or interest are identified on Map 2: Nisga'a Land Interests.

In addition, under the *Nisga'a Final Agreement*, the Nisga'a Nation and Nisga'a citizens have certain rights over the northern part of the North Coast LRMP plan area, including:

- Rights to harvest wildlife and migratory birds;
- Rights to harvest fish and aquatic plants;
- Rights of access.

The *Nisga'a Final Agreement* also establishes a number of joint Nisga'a / provincial / federal committees to facilitate the planning of certain activities in areas that include the northern part of the North Coast LRMP plan area, such as:

- Joint Fisheries Management Committee, mandated to facilitate cooperative planning and conduct of Nisga'a fisheries and enhancement initiatives in the Nass Area; and
- Wildlife Committee, mandated to facilitate wildlife management within the Nass Wildlife Area.

Besides its rights and obligations under the *Nisga'a Final Agreement*, the Nisga'a Nation and its associated corporations hold other licenses of occupation in support of its activities in the North Coast LRMP area. The areas covered by these licenses are also identified on Map 2.

The Nisga'a Nation has participated directly in the North Coast LRMP plan development process.

However, the Nisga'a Nation is concerned about the treatment accorded elsewhere in this document to other First Nations' land use plans and assertions of aboriginal rights and title, to the extent that those plans and assertions encroach on the Nass Area, as defined in the *Nisga'a Final Agreement*. To the same extent, the Nisga'a Nation is concerned about the future "government-to-government" discussions and the as yet undefined "government-to-government" component of North Coast LRMP implementation, in which those other First Nations expect to participate.

Nisga'a Lisims Government does not accept that any First Nation other than the Nisga'a Nation has ever had aboriginal rights or title over any part of the North Coast LRMP area within the Nass Area, as specified in the *Nisga'a Final Agreement*. Nisga'a Lisims Government considers any assertion of such aboriginal rights or title by any other First Nation to be illegitimate, and therefore considers the land use plans of any other First Nation to be illegitimate to the extent that they encroach on the Nass Area.

1.2.4 First Nations Participation

Eight First Nations have interests in the North Coast LRMP area (Nisga'a Nation participation is addressed separately above). Prior to the initiation of the North Coast LRMP, the provincial government signed two protocol agreements that guided First Nations participation the North Coast LRMP;

- The General Protocol Agreement on Land Use Planning and Interim Measures. Participating First Nations with an interest in the North Coast LRMP include the Haisla, Gitga'at, Metlakatla, and Kitasoo/Xaixais First Nations;
- Tsimshian Nation Tri-partite Accord on Lands and Resources; includes Allied Tribes of Lax Kw'alaams, Gitga'at, Gitxaala, Kitasoo, Kitselas, Kitsumkalum and Metlakatla First Nations.

At the outset of the process, the Kitasoo First Nation declined to participate in the LRMP. Their traditional territory in the LRMP is relatively small (Aristazabal Island), and the province will discuss the outcomes of the LRMP with the Kitasoo during Government to Government.

Consistent with the protocol agreements, First Nations' participation in the LRMP was on a government-to-government basis. The province and each participating First Nation signed contribution agreements prior to, and during the LRMP process. These agreements supported First Nations participation in the planning process, and provided some financial assistance for First Nations to develop their own land use plans for presentation to the LRMP. In addition, the contribution agreements defined the specific nature of each First Nation's participation in the LRMP.

At the initiation of the LRMP, the Ministry of Sustainable Resource Management and five Tsimshian First Nations formed a "Tsimshian Stewardship Committee". The concept of a joint Stewardship Committee was developed by the First Nations several years ago, and was advanced by the First Nations to MSRM at the conclusion of the Kalum LRMP. The MSRM/Tsimshian Stewardship committee was formed as a collaborative forum for information sharing, technical coordination, policy development, and joint delivery of projects in support of the LRMP.

It is understood that First Nations³ participated in the North Coast LRMP by:

³ The Nisga'a First Nation also participated in the North Coast LRMP process. Nisga'a Rights and Title have been reconciled with the Province and Canada in a modern day treaty. The Haisla and Tsimshian First Nations do not have Treaties with the Province or Canada.

- Sharing information among First Nations and with other LRMP Participants;
- Providing explanations of First Nations’ cultural, historic and ecological perspectives;
- Providing advice on land use and resource management from a First Nations perspective;
- Presenting land use proposals or guidance based on the content of their respective First Nations land and marine use plans or components of these plans, understanding that many of these plans were/are in draft form.

The information set out in the Province’s LRMP is for the sole purpose of informing the preparation and implementation of the LRMP. Neither the information provided during the LRMP process, nor the resultant plan, serve to limit or define any Aboriginal Rights, Aboriginal Title, Crown Title or Treaty Rights.

Aboriginal Rights and Title

Note: This section is a draft only; it will be finalized by First Nations and the Province during Government-to-Government discussions.

Existing Aboriginal and treaty rights are recognized and affirmed under Section 35 of the *Constitution Act, 1982*.

The position of Gitga’at, Metlakatla, Lax Kw’alaams, Kitselas and Kitsumkalum First Nations and the Haisla Nation is they have sovereign Aboriginal Rights and Title to, and jurisdiction and stewardship authority over, the lands, air, waters, and surface and sub-surface resources within their traditional territories, based on their laws, oral history and customs. The position of the Gitxaala First Nation, as the oldest nation on the North Coast, is that they have sovereign Aboriginal Rights, Title, jurisdiction and stewardship of the lands, water, air and renewable and non-renewable resources within their territory, based on their laws, oral history and customs.

The position of the Province is that it has Crown Title to the land and resources within the North Coast LRMP, and has exercised sovereignty in British Columbia from 1846.

Within the LRMP process, there was an acknowledgement by the First Nations, the Province and LRMP participants of these mutual assertions (as stated above), as a means of setting aside jurisdictional issues in favour of constructive dialogue about land use and resource management. Consequently, the issue of jurisdiction over lands and resources was not a subject addressed by the LRMP process or its resultant products.

Until such time as there is a final reconciliation through treaty or legal decisions of Aboriginal Title and Crown Title over the claimed traditional territories of the First Nations, the Province will:

- (i) consult with the First Nations in accordance with any negotiated agreements and the common law; and
- (ii) seek workable accommodations with the First Nations in accordance with any negotiated agreements and the common law.

Descriptions of authority or jurisdiction of any of the First Nations or the Province in this document do not constitute admissions by any of the First Nations or the Province with respect to the existence, scope, limits, content or extent of authority or jurisdiction of any of those entities. The references in the LRMP to authority or jurisdiction must be taken to be based on a recognition of the fact that the First Nations and the Province have differing views about those matters and that those differences may be the subject of existing or future negotiations or litigation between any of the First Nations and the Province, or any of them.

Products from the North Coast LRMP are without prejudice to First Nations and the Province with respect to land and resource management issues in future Treaty negotiations. In addition, these products will not limit any positions the Province and First Nations may take in litigation. Similarly, involvement by First Nations in the development of the LRMP does not abrogate the Province's legal responsibility to prevent the infringement of Aboriginal Rights through the process of consultation and accommodation with a First Nation on specific development proposals.

For clarity, the intent of the language in this section is:

- a) to recognize the fundamental importance of issues related to Rights, Title, jurisdiction and sovereignty, and
- b) to create safety for First Nations and the Province in terms of how the LRMP process and products can be used in the future.

The language is not intended to imply any judgment about the balance or prominence of the positions of the First Nations or the Province on these matters.

Use Interests of Kitselas and Kitsumkalum First Nation

Kitselas and Kitsumkalum First Nations support the title interests and land and marine use plans of the coastal Tsimshian peoples. Kitselas and Kitsumkalum First Nations participated in the LRMP and related Government to Government discussions with the same understandings as other First Nations. Kitselas and Kitsumkalum First Nations participation was tailored to reflect their respective areas of Traditional Resource Use.

First Nations Land Use Plans

All Haisla and Tsimshian First Nations presented land use plans, or portions of land use plans, to the LRMP Table. The First Nations also made extensive presentations to the LRMP Table regarding their culture, laws, and values. The provincial government, through the various agreements, supports the creation of First Nations plans. It is the intention of the province to harmonize First Nations land use plans with the North Coast LRMP, to the greatest degree possible, both during LRMP development, as well as during government-to-government discussions.

First Nations have also stated their goal that First Nations land use plans be used to guide tenuring, permitting, and operational decision making processes. Agreement on the future role of First Nations plans in provincial administrative and operational land and resource decision making processes was not reached during the LRMP process, and will be a subject of discussion during government-to-government.

First Nations "Flags"

At the March 26-29, 2004 Table meeting, there was a comprehensive review of the draft LRMP Report. During this review, each sector identified specific issues, concerns, and/or proposed amendments that would need to be addressed prior to that sector being able to sign off on the final report. The issues, concerns, and/or proposed amendments identified during this review were referred to as "flags". Flags have been addressed to the satisfaction of each sector as evidenced by this consensus report.

It should be noted that the Allied Tsimshian Tribes of Lax Kw'alaams had additional comments on the draft that were provided to the LRMP Table prior to March 27, 2004. Those comments are recorded separately and should be considered part of the draft of March 27, 2004 in the same manner as other First Nation Flags.

During this review, a number specific issues, concerns, and/or proposed amendments were also raised by First Nations. These First Nation “flags” were specifically identified in the draft of the report produced following the March meeting (the “April 2004 Draft”). Many of these First Nation “flags” dealt with assertions of aboriginal rights and/or title or jurisdictional/administrative requirements flowing from such assertions (e.g. the requirement for certain actions to be consistent with First Nations land use plans, the requirement for certain actions to have First Nations consent etc.). These assertions were acknowledged by the LRMP Table. It was also recognized by both the LRMP Table and by First Nations that these assertions and associated jurisdictional/administrative requirements were beyond the mandate of the LRMP Table and are appropriately dealt with at the government-to-government level. Chapter 2: First Nations Planning and Participation describes the perspectives of the First Nations and the province on those matters. Chapter 2 is a draft that has been reviewed but not endorsed by most of the First Nations that participated in the LRMP. That section will specifically be reviewed in government-to-government discussions.

The remainder of the First Nations “flags” dealt with stewardship components of land use (vs. jurisdictional/administrative components). The Allied Tribes of Lax Kw’alaams informed the province that they would not engage in further editing of the LRMP document following the March meeting. Therefore, the flags raised by ATT are recorded in the draft of April 16, 2004, and are available for the province and ATT to review in government-to-government discussions. They are removed from this document.

Remaining flags were addressed in consultation with the First Nation that raised the flag. Those changes are included in this document. First Nations have not necessarily agreed to the changes.

Gitga’at First Nation, having informed the LRMP Table of its land and resource interests through presentation of a draft Gitga’at Land Use Plan and general Table discussion, did not provide detailed comments on, or identify “flags” relating to, earlier drafts of the LRMP document. However, Gitga’at has reviewed the latest, revised LRMP document, and intends to provide comments to the process team. Those comments will be shared with the LRMP Table, and will be addressed during government-to-government discussions.

1.2.5 Decision-making and consensus

The LRMP Table used interest-based negotiation techniques to resolve issues. Much of the negotiating work happened in Working Groups that were composed of a sub-set of the LRMP Table with an interest in the topic area under discussion.

Decision-making at the LRMP Table was based on consensus, defined as all participants being in agreement with a particular issue. Sectors could choose to stand aside on specific issues to allow others to reach consensus. This would go forward as a consensus recommendation. Sectors could also choose to disagree with respect to a particular issue. Where participants were unable to reach agreement on a particular issue, the various perspectives on the issue were characterized and the issue forwarded to the provincial government to determine a final outcome.

The duration of the plan was approximately 29 months. This timeframe is typically less than other LRMP processes have had to complete plans. While most of the issues were resolved by the LRMP Table, some of the issues were not able to be discussed due to time limitations – these issues are to be addressed in the manner described in Section 3.2.8.

Scope of the planning process

Table 2 shows the scope of the North Coast LRMP.

Table 2: Issues within and outside of the mandate of the LRMP

Within the mandate of the LRMP:	Outside of the mandate of the LRMP:
Terrestrial land mgt planning (how to best use and manage land and resources)	Tenure (Who receives licenses or leases on crown land): <ul style="list-style-type: none"> • Fee simple lands • Indian Reserves and other Federal lands
First Nations interests as they relate to land use and management.	Treaty: <ul style="list-style-type: none"> • First Nations rights and title are also addressed through tripartite treaty processes.
Foreshore <ul style="list-style-type: none"> • Log dumps • Marine conservation areas associated with terrestrial Protection Areas 	Coastal Issues: <ul style="list-style-type: none"> • Aquaculture • Offshore oil and gas • Federal marine protected areas • Management of marine resources
Provides guidance to statutory decision makers	Statutory decision-making: <ul style="list-style-type: none"> • e.g., setting Allowable Annual Cut
Considers policy and can recommend changes to policy	
Directs a process for review and resolution of outstanding issues during plan implementation.	

1.2.6 Coast-wide Planning

The North Coast LRMP is part of an overall Coast Sustainability Strategy being coordinated by the Ministry of Sustainable Resource Management in conjunction with a number of concurrent initiatives coordinated from outside of government. Components of the Coast Sustainability Strategy include:

- Strategic land use planning processes in the North Coast, Central Coast, and Haida Gwaii/Queen Charlotte Islands;
- Integrated coastal plans within Nootka Strait, and the Central Coast Coastal Resource Management Plan, among others;
- Coast Information Team;
- Conservation Investments and Incentives Initiative; and
- Discussions with First Nations on economic measures and government-to-government discussions on land use plans; and
- Incorporation of the relevant provisions of the Nisga’a Final Agreement

These various processes are inter-related and all contribute to an emerging consistency of planning on the BC coast.

1.2.6.1 Coast Information Team

The Coast Information Team (CIT) is an independent, multi-disciplinary group formed as an outcome of the 2001 *Central Coast Framework Agreement* and *General Protocol Agreement on Land Use Planning and Interim Measures*. The mandate of the CIT was to bring together the best available scientific, traditional and local knowledge, environmental expertise and community experience to develop information and analyses to support the development and implementation of ecosystem-based management in the Central Coast, North Coast and Haida Gwaii/Queen Charlotte Islands.

The primary tasks of the CIT were to:

- a) Recommend a framework for planning that reflects the definition, principles and goals of ecosystem-based management (EBM); and
- b) Conduct regional and sub-regional analyses to provide ecological and socio-economic context for planning.

Due to incompatible timelines for completion, not all of the CIT products made it to the LRMP Table in time to inform negotiations. Those that were used by the LRMP Table include: an EBM Framework, an EBM Planning Handbook that provides implementation tools and procedural steps to guide the implementation of EBM across multiple scales; a Hydroriparian Planning Guide, describing methods for EBM planning within aquatic and riparian areas; and the Ecosystem Spatial Analysis. All CIT products were peer reviewed and are now considered complete.

Other CIT products that will be available to inform discussions by the LRMP Monitoring Committee during plan implementation include economic gains spatial analyses (EGSAs) for timber, tourism, minerals/oil/gas, non-timber forest products, and fisheries/aquaculture, a well-being assessment that measures environmental and socio-economic conditions and trends in the region, and a Scientific Basis of Ecosystem-Based Management that outlines the scientific rationale for CIT recommendations. The Scientific Basis of EBM has been peer reviewed and is now considered complete.

- c) Support implementation of pilot projects that were investigating applications of ecosystem-based management and planning, including the Kitasoo and Gitga'at Pilot Implementation Team projects (see below).

The CIT was overseen by a Management Committee with representatives from the provincial government, First Nations and stakeholders and is co-chaired by the provincial government and First Nations. A letter was sent from the LRMP Table co-chairs to the CIT project management committee detailing the concern of Table members that not all of the CIT products were available in time to inform negotiations.

1.2.6.2 Gitga'at-Kitasoo/Xaixais EBM Pilots

In 2001, the Gitga'at and Kitasoo/Xaixais initiated EBM pilot projects within their traditional territories. The purpose of the pilots was to:

- assist in the development of ecosystem-based land use plans in the Gitga'at and Kitasoo/Xaixais traditional territories and their implementation through government-to-government discussions
- develop landscape, watershed and site level planning products and recommended approaches to the implementation of ecosystem-based land and resource management; and
- explore ways to create sustainable jobs, economic and social development opportunities for First Nations communities.

The pilot projects flowed from a protocol among the Gitga'at and Kitasoo/Xaixais First Nations, Triumph Timber, Western Forest Products, Interfor, Weyerhaeuser, Natural Resources Defence Council,

Greenpeace, David Suzuki Foundation, Sierra Club and Forest Ethics, with additional funding and technical support provided by the Ministry of Sustainable Resource Management. The work of pilot projects informed development of the CIT EBM Handbook, the conservation investments and incentives initiative (CII) and other coastal planning initiatives.

1.2.7 Communications

The LRMP Process Team implemented a communications strategy to inform the general public throughout the LRMP process. Communications techniques included media reports, newsletters, sectoral outreach, a North Coast LRMP website, and open houses. Table meetings were open to the public with time allotted at the end of each meeting for comments from observers. Public comments received through open house and media efforts were compiled for consideration by the Planning Table.

The recommendations package received public review at two points in the process: prior to completion and ratification of the final set of recommendations; and following ratification and socio-economic and environmental analysis of the final recommendations package. Comments from the public were documented and incorporated into the plan as appropriate.

2. FIRST NATIONS PLANNING AND PARTICIPATION

This chapter was prepared by the First Nations who participated in the North Coast LRMP process and describes their perspective on matters relating to the North Coast LRMP. This chapter is included in this report for the sole purpose of providing context and providing the reader with the perspectives of these First Nations as at the time this report was finalized. This chapter should be read in conjunction with (i) the description of the role of First Nations in the LRMP process as described in Section 1.2.4 and (ii) the First Nations ratification statements read to the LRMP Table on March 29, 2004 and June 12, 2004 (see Appendix 1). This chapter has not been formally reviewed, endorsed, agreed to, or ratified by the LRMP Table and does not form part of the LRMP Table's recommendations. While there are many aspects of this chapter that the province agrees with, there are certain components it disagrees with. It is the intention of the province to finalize this chapter through the government-to-government discussions scheduled to conclude after the LRMP Table has completed its work.

This chapter provides the perspectives of the Tsimshian and Haisla First Nations on a number of important issues that help frame their involvement in the LRMP. It includes First Nations' views on the nature of aboriginal rights and title, and the jurisdictional matters that flow from rights and title with respect to land use, including elements of consultation and accommodation.

Because this chapter is intended to house the perspectives of First Nations in a pre-treaty environment, it does not contain the views of the Province, including differences on the characterization of the Province's obligations, the nature of aboriginal rights and matters of jurisdiction and ownership. Subject to this disclaimer, the provincial representative supports the inclusion of this chapter in the LRMP because it provides First Nations' viewpoints and offers a differing perspective. During government-to-government discussions a joint perspective may be sought.

See Section 1.2.3 in the Introduction chapter for a description of the unique role of the Nisga'a Nation within the LRMP process, as the only First Nation with no unresolved interests with respect to aboriginal rights and title. That section is intended to reflect, and is subject to, the Nisga'a Final Agreement.

2.1 Introduction

Several Tsimshian First Nations and the Haisla Nation are participating in the North Coast LRMP.⁴ All of these First Nations have at least part of their traditional territories in the North Coast planning area. The whole of the North Coast planning area is land claimed by the Tsimshian First Nations. Part of the North Coast planning area is land claimed by the Haisla Nation.

The Tsimshian First Nations and the Haisla Nation have claimed overlapping and shared territories as indicated by their respective Statement of Intent Maps for treaty negotiations with the Federal and Provincial Governments. The claimed overlap and shared territories falling in the North Coast LRMP planning area are relatively small compared to the rest of the Tsimshian traditional territories. The overlap areas represent lands subject to the interests of both the Tsimshian First Nations and the Haisla Nation. References to Haisla Territory and Haisla interests in the North Coast LRMP refer only to these claimed overlap and shared areas, whereas the collective interests of the Tsimshian First Nations encompass the whole of the North Coast planning area.

First Nations participation in the LRMP process is without prejudice to treaty negotiations and to any position these Nations may take in any other forum, including administrative processes or court proceedings. This participation, and the plan resulting from the LRMP process, shall not be construed as in any way affecting, diminishing, or infringing the Aboriginal Rights and Title of the First Nations. This participation, and the plan resulting from the LRMP process, shall not be used to assert that there has been adequate consultation with the First Nations concerning land and resource use decisions. No documents produced or statements made through participation in the LRMP process shall be admissible in any court proceeding or administrative process without the express written consent of the relevant First Nation.

⁴ The Tsimshian First Nations participating in the North Coast LRMP include the Kitselas, Kitsumkalum, Lax Kw'aalams, Metlakatla, Gitxaala, and Gitga'at First Nations

2.2 Tsimshian First Nations

The Tsimshian First Nations are concerned with the impact of current and future land use activities, especially within the context of the impact that resource development over the past 150 years has had on the land and waters and fish, wildlife and other resources within their territories. This development has taken place within a social and political framework that has not been favourable to Tsimshian interests.

The Tsimshian have lived within their traditional territories since time immemorial. Tsimshian society is, and always has been, organized and sophisticated, with complex laws and rules governing social relations, economic rights and relations with other First Nations. The Tsimshian First Nations have never ceded or surrendered title to their lands, rights to the resources, or the power to make decisions within their territories. The Tsimshian are a thriving people with a complex social structure. Their culture and traditions have evolved over the centuries and are still evolving as their communities develop and adapt within the modern world.

The articulation of Tsimshian interests in lands and resources has been occurring since first contact with Europeans. Current examples include comprehensive treaty positions and claims put forth by the Tsimshian. Other examples may be found in court documents and petitions dating back to the late 1800's. Tsimshian governance principles with regard to lands and resources are articulated through their Ayaawk. Tsimshian rights to use land and resources, and acceptable, sustainable methods for extraction, are expressed through oral histories (Adaawak).

Over the past 150 years, the Tsimshian First Nations have sustained massive cultural, social, political and economic upheaval as a result of the influx of non-aboriginal people into their territories, the assertion of Crown Title, and the exercise of power by the Federal and Provincial governments. The Tsimshian First Nations have systematically been denied access to lands and resources during this period. The Federal and Provincial governments, in contravention of their trust responsibilities, have encouraged and facilitated alienation of the lands and resources that are the subject of the Tsimshian First Nations' Aboriginal Rights and Title. Government policy has undermined the Tsimshian traditional economy, economic rights and capacity for self-sufficiency creating a state of economic dependency. This despite the fact that Tsimshian lands and resources have been extensively utilized to create wealth in the non-aboriginal society. This alienation has occurred without Tsimshian consent or compensation.

The Tsimshian First Nations assert their Aboriginal Title to those lands and waters that constitute their traditional territories, their Aboriginal Rights and Title to the resources of traditional lands and water, and their inherent right to self-determination.

The Tsimshian First Nations also have an economic interest in the lands and resources within the North Coast LRMP planning area. In all sectors of the economy, including the resource sector, there has not been the level of First Nation involvement and job creation that is desired and necessary. The Supreme Court of Canada's decision in *Delgamuukw* clearly conveyed that First Nations' economic interests are subject to accommodation when development occurs which constitutes an infringement on First Nations' Rights and Title, where Title has not been ceded.

The Tsimshian First Nations are participating in the treaty process to reach agreement regarding the constitutional protection afforded to their Aboriginal Title in accordance with Section 35 of the *Constitution Act*, 1982. Negotiations with the Federal and Provincial governments will include discussions pertaining to rights to the lands, waters and resources, both surface and subsurface, that constitute the Tsimshian Traditional Territories, as well as the compensation to be paid for the alienation and utilization of these lands, waters and resources.

2.2.1 Tsimshian First Nations Traditional Territories

The Tsimshian First Nations have extensive cultural and historical links to the lands and waters of the North Coast. Tsimshian place names exist throughout the area, bearing witness to the Tsimshian presence over many thousands of years. Evidence of Tsimshian occupancy within their territories includes settlements, resource sites, and spiritual and ritual places of Tsimshian ancestors, including villages, hunting camps, cedar bark gathering areas, rock quarries, seafood camps, fishing sites, pictographs and cemeteries. Some of these sites are 10,000 years old.

That the Tsimshian used, prior to contact, and continue to use, a vast array of resources from the lands and sea within their traditional territory is beyond dispute. The Tsimshian continue to harvest a wide range of food and resources from the sea including eulachon, herring, smelt, lingcod, rockfish, sturgeon, perch, halibut and flounder, while the five species of anadromous salmon as well as steelhead, trout and char among others are caught in freshwater. Sea mammals such as seals, sea lions and porpoises have also been utilized by the Tsimshian. Numerous species of waterfowl are hunted. Beach foods such as sea urchins, crabs, clams, mussels, cockles, abalone, scallops and others are gathered, and constitute a large part of the Tsimshian diet. Seaweed and roe on kelp were, and continue to be, important to the Tsimshian.

The land of the North Coast provides deer, elk, moose, black bear, mountain goat, beaver, raccoon, muskrat and other animals, as well as many birds. A variety of plants were and are harvested at different times of the year for their berries and other fruits, tender green shoots, and edible roots, tubers and bulbs. Other plants are cherished for their medicinal qualities and continue to be collected for many purposes.

The forests within the traditional territories produce many necessities of life for the Tsimshian people. Trees continue to be felled for the materials necessary to construct longhouses, canoes, furniture, weapons, utensils and ceremonial objects. Bark is stripped to make mats, mattresses, baskets and other products. Tsimshian people also access surface and subsurface mineral resources. Economic self-sufficiency flowed from the bounty of the land and the Nations' unique relationship to the land.

Moreover, the Tsimshian participated in a complex economic system with other First Nations in the region. Trade relations existed with several neighbouring First Nations on the Coast and in the Interior. Transportation routes existed on both land and water.

The Tsimshian define themselves in relationship to their lands and waters. The spiritual and cultural connection of the Tsimshian to their territories is deep. From time immemorial, the Tsimshian have lived throughout their territories, in harmony with nature and dependent on its richness. For the Tsimshian culture to survive, this connection to nature must be nurtured and the land base it is based on must be stewarded. The use of land in its natural state is a primary element of Tsimshian culture. Therefore, access to land in its natural state must be ensured. Without this land, there will be no Tsimshian culture.

The lands of the traditional territories of the Tsimshian exist in an already dramatically altered landscape. Industrial logging practices, mining, and community development have had numerous impacts. The current status of the land base dictates the options available for different land uses and management. Choices the Tsimshian may have made some years ago have been precluded because many areas and resources have already been heavily impacted. The land use choices made in any planning process will, of necessity, reflect this situation: choices will be based on what is available today, as well as upon traditional use patterns and future community needs. The plans of the Tsimshian First Nations also reflect an intention to restore the health of areas that have been degraded by past resource development, pollution, erosion and other human impacts.

2.3 The Haisla Nation

The Haisla Nation is concerned with the impact of current and future land use activities on the environment and on their Aboriginal Interests, especially within the context of an already degraded landscape from past land and resource use, including impacts on fish, wildlife and other resources. In the past land and resource uses have taken place within a social and political framework that has not been favourable to Haisla interests. The food fishery from ocean and freshwater systems is a very important part of the cultural fabric of the Haisla. Trapping and hunting are also very important activities as is the use of plants, trees and minerals.

The Haisla are also concerned with, and interested in, economic values. In all sectors of the economy, including the resource sector, there has not been the level of First Nation involvement and job creation that is desired. In Canadian law, as laid out in the Supreme Court of Canada's decision in *Delgamuukw*, First Nations' economic interests are subject to accommodation when development occurs which constitutes an infringement on First Nations' rights and title, where title has not been ceded. An important reason for the involvement of the Haisla in the LRMP has been to build relationships and bridge some of the differences that may be hindering the full realization of economic and social opportunities for the Haisla people.

The Haisla note that governance principles with regard to land use and resource management have been articulated through their *Nuyem* since time immemorial. They also note that the right to use land and resources, and acceptable, sustainable methods for extraction, are expressed through oral histories.

2.3.1 Land, Resources and Rights to Self-Determination

The people of the Haisla Nation have asserted their aboriginal title to those lands and waters that constitute their traditional territory, their rights to the resources of traditional lands and water, and their inherent right to self-determination.

The Nation is participating in the treaty process to reach agreement regarding the constitutional protection afforded to Haisla aboriginal title in accordance with Section 35 of the *Constitution Act, 1982*, which recognizes and affirms aboriginal and treaty rights. The Nation is asserting its rights with regard to Haisla lands, waters and resources. Negotiations with the Federal and Provincial governments will include discussions pertaining to the identification of rights to those lands, waters and resources, both surface and subsurface, that constitute the Haisla traditional territory and the compensation to be paid for the alienation and utilization of these lands, waters and resources. The Haisla Nation is prepared to continue to engage in negotiations with both levels of government to resolve treaty issues.

The Haisla Nation is participating in the North Coast LRMP process with the aim of informing stakeholders and government of their interests and aspirations with regard to the resources and land within their traditional territory. The land use plan of the Haisla is an exercise of governance by the Nation over its traditional territory. This plan is intended to provide direction regarding current and future land uses. The plan will not limit negotiations under the treaty process and does not constitute an abrogation or derogation from Haisla Nation aboriginal rights or title. The North Coast LRMP Table will need to recognize these plans and reconcile the planning products out of their process with these plans.

2.3.2 Haisla Nation Traditional Territory

The Haisla Nation has numerous historical links to the lands and waters of their asserted territorial boundaries of the North Coast. Haisla place names exist within these territorial boundaries, bearing witness to the Haisla presence over many thousands of years.

2.3.3 The Resources of the Haisla Territory

That the Haisla used, and continue to use, the resources of their traditional territory is beyond dispute. Prior to contact, the Haisla harvested a vast array of resources from the sea. A wide variety of fish including eulachon, herring, smelt, lingcod, rockfish, perch, halibut and flounder were taken in saltwater, while the five species of anadromous salmon as well as steelhead, trout and char were caught in freshwater, among others. The Haisla also utilized sea mammals such as seals, sea lions and porpoises. In addition, numerous kinds of waterfowl were hunted. Beach foods such as sea urchins, crabs, clams, mussels, cockles, abalone, scallops and others were gathered, and constituted a large part of the Haisla diet. Seaweed and roe on kelp were, and continue to be, other important resources well utilized by the Haisla or traded with other First Nations.

The traditional territory provided deer, moose, black bear, mountain goat, beaver, muskrat and other animals, as well as many birds. A variety of plants were and are harvested at different times of the year for their berries and other fruits, tender green shoots, and edible roots, tubers and bulbs. Other plants were cherished for their medicinal qualities and continue to be collected for a variety of purposes.

The forests of the traditional territory produce many of the necessities of life for the Haisla people. Trees were felled for the materials necessary to construct longhouses, canoes, furniture, weapons, utensils and ceremonial objects. Bark was stripped in order to make clothes, towels, mats, mattresses and other products, while roots were used in the making of baskets. Stone was extracted for the making of tools. Haisla people accessed both surface and subsurface resources. In essence, because of the bounty of the land and the Nation's unique relationship to the land, the Haisla were economically self-sufficient.

Moreover, the Haisla participated in a complex economic system with other First Nations in the region. Trade relations existed with several neighbouring First Nations on the Coast and in the Interior. Transportation routes existed on both land and water.

The Haisla define themselves in relationship to their land. The spiritual and cultural connection of the Haisla to the land and its bounty is deep. From time immemorial, the Haisla have lived throughout this territory, in harmony with the land and dependent on its richness. For the Haisla culture to survive, this connection to nature must be nurtured and the land base it is based on must be stewarded. The use of land in its natural state is a primary element of Haisla culture. Therefore, access to land in its natural state must be ensured. Without this land, there will be no Haisla culture.

2.4 The Duty to Consult and Accommodate

The Tsimshian First Nations have not ceded or surrendered their Aboriginal Title to the lands within their traditional territories through treaties with the government.

Because the Tsimshian have never surrendered their Aboriginal Title through treaties, there are legal rights and obligations associated with that Title that must be met, when the lands and resources subject to that Title are developed. Aboriginal Rights and Title are recognized at law and enforceable by the courts. Aboriginal Title is a unique property interest that is an encumbrance on lands where that title has not been ceded and where land is claimed as part of a Traditional Territory of a First Nation. The entire land base of the North Coast LRMP planning area is subject to the Aboriginal Rights, and Title interests of the Tsimshian. Aboriginal rights and title puts the Tsimshian Nation participants in the LRMP process in a broader position than stakeholders in the LRMP process and in a position more similar to that of the provincial government, as their interest is a broad-based one in the whole of the lands in the planning area, as opposed to the site or resource specific interests of most participants to the process.

Where Aboriginal Rights and Title exist, they must not be infringed unless the Crown can justify its infringement. Under certain conditions, these legal rights can be infringed when First Nations interests (cultural and economic) have been considered and accommodated. Accommodation must be addressed with the affected First Nation through a consultation process. Thus, in the whole of the North Coast LRMP planning area, Tsimshian claims of Aboriginal Rights and Title must be accommodated when any resource or economic development activity affecting the land base and/or its resources that has the potential to infringe, is contemplated and/or undertaken. The Crown and third parties (e.g. industry) have legal obligations in this regard.

All of the obligations articulated in this section regarding aboriginal rights and title apply to lands which are part of the traditional territory of the Haisla.

2.5 First Nations Planning and the North Coast LRMP

Agreements resulting in Tsimshian participation in the LRMP note that “Land use planning recommendations will be developed in an inclusive planning forum in which First Nations, British Columbia, communities, stakeholders are all participants. The inclusive planning forum will operate on the principle of shared decision making with the objectives that all participants will commit to seek a consensus on land use recommendations”. It is also noted that “Where First Nations cannot agree to a recommendation(s) from the inclusive planning forum, a government-to-government process will be established to attempt to resolve the outstanding matter(s) directly with the Province of British Columbia”. The establishment of a process to resolve outstanding matters, if required, is being developed by the Tsimshian First Nations and the Province.

The Tsimshian First Nations have been preparing their own Land Use Plans in accordance with their own protocols and planning methods. These plans will be holistic documents prepared in accordance with each Nation’s Ayaawk and with direction from hereditary and elected chiefs and councils, local knowledge and input from community members, information developed through the treaty process, and other information. First Nations land use plans are stand-alone documents which will provide the foundation for government-to-government discussions and will also give direction to third parties interested in resource development.

The entire land base of the North Coast LRMP planning area is subject to the Aboriginal Rights, Title and interests of the Tsimshian. These interests must be addressed at levels ranging from policy development through to operational level planning. Current Provincial consultation and accommodation policies tend to result in ad hoc, reactive decision making as specific issues emerge. A well-crafted final North Coast LRMP document can add value to the existing legal framework by enabling a more comprehensive and collaborative approach to land and resource stewardship which acknowledges and respects First Nations governance, cultural connections, and economic and stewardship interests.

Toward that end the Tsimshian First Nations are participated in the North Coast LRMP process with the aim of informing stakeholders and the Provincial government of their interests and aspirations with regard to the lands and resources of their Traditional Territories. The Tsimshian First Nations have a responsibility to ensure the cautious stewardship of all the lands and resources within their territories (e.g. biodiversity, timber, tourism, cultural heritage, etc.) for future generations. Tsimshian participation in the LRMP and the development of each First Nation’s land use will reflect this responsibility and also the exercise of governance over their Traditional Territories.

The Tsimshian First Nations and Haisla Nation are also participating in the North Coast LRMP to begin the process of building cooperative relationships with the non-aboriginal communities, businesses and organizations that have an interest in the North Coast. The Tsimshian First Nations and the Haisla Nation are working to build relationships and bridge some of the differences that may be hindering the full realization of economic and social opportunities for the Tsimshian people, while respecting the rights and needs of other parties.

The Tsimshian First Nations and the Haisla Nation have developed a set of core principles which articulate their land and resource management objectives to Provincial ministries and stakeholder representatives participating in the North Coast LRMP. Tsimshian First Nations and Haisla Nation representatives are working to ensure that the specific land and resource objectives that flow from these principles are being incorporated into the final North Coast LRMP, either through Table discussions or government-to-government discussions.

The core principles communicate First Nations’ objectives to Provincial ministry staff and local communities and businesses who will be engaged in using and managing the lands and resources of the North Coast. They provide a framework within which Tsimshian First Nations and the Haisla Nation can

work toward implementing a final North Coast LRMP, and First Nations Land Use Plans, in a manner that respects and acknowledges Aboriginal Rights and Title and cultural linkages to the land, while respecting and acknowledging the rights and needs of other peoples who live and work in the North Coast.

Table 3 lists the objectives of First Nations that are not accounted for in Chapter 5: General Management Direction.

Table 3: First Nations management objectives.

- First Nation Land and Resource Management Principles:**
- Land and resource decisions must be consistent with Aboriginal Rights and Title and First Nations governance systems, establish the equitable flow of economic benefits to First Nation communities and protect and sustain First Nations culture and heritage.
 - Land and resource planning occurs in a context in which the First Nations’ perspectives and the accommodation of First Nations’ interests is on a government-to-government basis and recognizes constitutionally protected Aboriginal Rights.
 - Land and resource planning and development should not occur without consultation and the accommodation of First Nations’ interests.
 - Lands and resources must be stewarded in a manner consistent with ecosystem-based management as it is being articulated through LRMP discussions, government-to-government discussions and the operational experience of cooperative ecosystem-based pilot projects (e.g. Gitga’at-Kitasoo and Kowesas Pilots).
 - Land and resource planning and development should facilitate development of cooperative working relationships and economic partnerships among First Nations, governments and third parties (e.g. protocols).
 - The Province supports the inclusion of this table as a starting point for discussions on ensuring First Nations needs are being met.

Value	Objectives	Indicators	Targets	Management Considerations
First Nations Governance	<ul style="list-style-type: none"> • Respect and Accommodate Aboriginal Rights and Title • Establish meaningful partnerships with government and resource developers • No resource development without First Nations’ approval/ accommodation • Application of First Nation Land Use Plans in planning • Rationalization of First Nations strategic land plans with NC LRMP 	<ul style="list-style-type: none"> • Consultation and accommodation protocols established • Joint management agreements established • Number of strategic goals, objectives and strategies from FN Land Plans applied in planning and development and adopted in NC LRMP • Extent of consistency between FN plans and NC LRMP proposed land use designations • Extent of consistency between FN plans, resource 	<ul style="list-style-type: none"> • Accommodation of FN interests through implementation of FN Land Plans • No infringement of Aboriginal rights and title without accommodation of aboriginal interests • First Nation consent to support land and resource development 	<ul style="list-style-type: none"> • First Nations should be partners in all levels of planning • Fiduciary obligation to consult and accommodate met • Protocol agreements defining activities, economic/employment benefits, etc... should be negotiated prior to any development • Refer to appropriate First Nation(s) land use plan

Value	Objectives	Indicators	Targets	Management Considerations
	<ul style="list-style-type: none"> • First Nations’ participation in resource management 	<p>management objectives and strategies and NC LRMP</p>		
Economic Accommodation	<ul style="list-style-type: none"> • First Nations’ equitable participation in region’s economic development • Accommodation of First Nations’ interests 	<ul style="list-style-type: none"> • Increased employment for First Nation members • Increased incomes for First Nation members • Increased revenue sharing with First Nations • Increased joint ventures, business partnerships with First Nations • Tenures awarded to First Nations 	<ul style="list-style-type: none"> • realization of economic development benefits for First Nations’ communities/ members 	<ul style="list-style-type: none"> • Incorporate First Nations’ Land Use Plans • Develop economic partnerships • First Nations should be approached prior to development and involved in every planning stage
First Nations Human Resources	<ul style="list-style-type: none"> • Provide for First Nations employment 	<ul style="list-style-type: none"> • Number of FN employed in the resource sector 	<ul style="list-style-type: none"> • Reduction of the unemployment rates in First Nations Communities to regional averages 	<ul style="list-style-type: none"> • First Nations participation in resource planning, implementation, utilization, and monitoring
First Nations Capital Resources	<ul style="list-style-type: none"> • Provide for First Nations’ business opportunities 	<ul style="list-style-type: none"> • Number of FN resource based businesses and tenures 	<ul style="list-style-type: none"> • Increased First Nations economic ventures and tenures 	<ul style="list-style-type: none"> • Flexibility in qualification or award requirements • Develop and implement action plan regarding direct awards of tenures to FNs

3. ECOSYSTEM-BASED MANAGEMENT

3.1 Introduction

3.1.1 General

The North Coast LRMP has been developed within the context of an overall coastal planning strategy, informed by First Nations Land Use Plans and with the input of the range of interests represented in the plan area. First Nations have their own systems of resource management that provide the basis for their land use plans.

The Terms of Reference for the North Coast LRMP Process, and the General Protocol Agreement on Land Use Planning and Interim Measures signed in 2001 between the Provincial Government and signatory First Nations, both provide that the North Coast LRMP be developed and based on the principles of ecosystem-based management. This provision is reflected in the following vision statement developed by the LRMP Table:

...The plan will strive to protect, enhance and rehabilitate resources. The plan will also strive to increase economic opportunities and to reflect the diversity of the plan area. It will do this *through the use of an ecosystem-based resource management framework* and through involvement of stakeholders in a balanced and consensus-based process.

In developing an ecosystem based management system for the North Coast planning area, the LRMP Table was supported by advice, recommendations, information and analysis from (a) the Government Technical Team (“GTT”), (b) the Coast Information Team (“CIT”), an independent, multi-disciplinary information body, and (c) local and traditional ecological knowledge. A number of documents and products developed by the GTT and CIT, along with local and traditional ecological knowledge, collectively help to guide ecosystem-based management in the plan area, subject to there being a complete peer review of documents. These include the EBM Framework, EBM Handbook, CIT Scientific Basis of EBM, Hydroriparian Planning Guide, LRMP Resource Analyses and Background Reports and First Nations Land Use Plans. Peer review of the products developed by the CIT is now complete. Peer review of products developed by the GTT is still incomplete. See Appendix 3: List of Peer Reviewers for Government Technical Team Reports for a list of peer reviewers for GTT-coordinated products.

The CIT Ecosystem Planning Framework (2003), which was adopted by the LRMP Table (see Section 3.2.1: EBM Framework), provides the following definition of ecosystem-based management:

EBM is an adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities. The intent is to maintain those spatial and temporal characteristics of ecosystems such that component species and ecological processes can be sustained, and human well-being supported and improved.

Key aspects of this definition are that (a) it emphasizes both ecosystems and human communities⁵, and (b) it recognizes the fundamental importance of maintaining ecological integrity in order to sustain healthy communities and economies over the long term. The CIT defines ecological integrity as “the abundance and diversity of organisms at all levels and ecological patterns, processes, and structures responsible for that biological diversity and for ecosystem resilience.”

⁵ Healthy human communities are a reflection of human well-being, which is a condition in which all members of society are able to determine and meet their needs and have a range of choices and opportunities to fulfill their potential.

There are a number of practical features that distinguish EBM plans and, more specifically, the plan recommended for the North Coast, from current/prior approaches to land use planning – these include:

- a) **A hierarchy of scales**, including variation in both spatial and temporal scales, plus regional contexts outside the planning area. The LRMP provides management direction at the sub-regional, landscape and watershed scales to guide operations at the stand scale.
- b) **Ecologically derived boundaries** for decision-making rather than administrative boundaries.
- c) **Use of peer reviewed scientific data and research results, in combination with traditional and local knowledge, to inform decision-making** - these contribute to the understanding of composition and structure of ecosystems, processes, functions and inter-relationships, as well as local cultural and socio-economic issues and considerations. Traditional ecological knowledge (TEK) is an integral component of the information considered as well as EBM. TEK is described in greater detail below. Peer review is a process of verification appropriate for western scientific data. First Nations have their own ways of verifying and validating TEK internally. Peer review standards should not be used as an obstacle to the inclusion of TEK on par with scientific data.
- d) **Monitoring of both the implementation and effectiveness of planning** - this includes establishing ecological baselines for analysis and interpretation of monitoring results, and use of reference areas operating at multiple spatial scales.
- e) **Adaptive management** - this includes active experimentation to use management as a continuous experiment, and the need for flexibility within the management framework (i.e. to change when necessary).
- f) **Systems thinking** i.e., recognition of the complexity and dynamism of ecological and social systems, the interdependent roles between humans and nature, and the distinctions between human values and technical information.
- g) **Organizational change**, recognizing that a move to EBM likely requires change in organizational nature of agencies, and equalization, or at minimum, acknowledgement of power relationships.
- h) **Co-operation between managers and interested and affected parties** - collaborative decision-making and acknowledgement of power imbalances.

The LRMP Table also believes it important to acknowledge that EBM involves more than the management direction provided in the LRMP. Full implementation of EBM involves maintaining all aspects of community stability and ecological health. Socio-economic development is a critical component of the transition to EBM, entailing the creation of institutional and planning arrangements through which communities and businesses seek to innovate and find new ways of generating wealth. This includes creating an enabling environment that will contribute to a diversified and stable economy. These important aspects of EBM are outside of the scope of the LRMP itself, but are essential to its successful implementation. All these things will not happen immediately - a transition period is necessary to allow socio-economic adjustment to occur such that community stability and ecological values are maintained.

3.1.2 Traditional Ecological Knowledge (TEK)

First Nations have their own systems of resource management and governance based on traditional ecological knowledge and First Nations laws. Ecosystem based management, and the work of the CIT/GTT, acknowledge and incorporate both western science and traditional ecological knowledge.

Traditional ecological knowledge “describes the knowledge and beliefs that indigenous peoples hold of their environments, which is handed down through the generations⁶.” TEK includes land-based knowledge of species as well as beliefs regarding human interaction with the ecosystem. This knowledge has been developed over many generations but is dynamic, in that it is continuously adapted to changes in environmental and economic conditions and to new information and technology. TEK is highly specific to a local area and occurs within a particular cultural context.

Traditional ecological knowledge defines how First Nations sustain resources and the resources sustain First Nations. Menzies (2002) notes that TEK is based on the interpretation of First Nations laws regarding the use and management of lands and resources. Various First Nations within the LRMP note that TEK is an integral component of their land use plans.

With regard to traditional ecological knowledge, the Tsimshian assert the following:

TEK is expressed for the Tsimshian through the *aywaax* (the laws regarding the use and management of lands and resources); the *adwaax* (he stories of ownership of the lands and resources); and the *gúú gwilyansk* (how the laws, names and lands and resources are handed down from generation to generation). Each house leader has the responsibility for stewardship within a territory, and its resources and the decisions regarding conservation are made in the feast hall.

The Haisla assert the following:

The Haisla have laws that govern and direct various aspects of Haisla way of life and are referred to as *nuyem*. The Haisla assert that *nuyem* also expresses traditional ecological knowledge. Individual Haisla people do have inherited stewardship responsibility for certain areas called *wawais*. Within the *wawais* are individual locations called *bagweeyas* (meaning “working area”) assigned to individuals or families for resource use purposes.

3.1.3 Maintaining ecological integrity and providing human well-being

The goal of EBM is to concurrently achieve high degrees of ecological integrity and high degrees of human (socio-economic) well-being at the strategic and operational scales.

At a strategic scale, the recommended LRMP identifies areas or resources that require protection versus those where various types and levels of development may occur. This approach recognizes that each industry (tourism, forestry, mineral exploration, mining, etc) involves a particular level and probability of impact that can be addressed through planning. For example, there is recognition that mineral exploration and mine development involve a hidden resource with a footprint that tends to be small in area, although the economic benefits and ecological implications for that small area can be significant. These features require a different approach to strategic planning compared to more widespread and frequently occurring activities, such as tourism and forestry.

At an operational scale (i.e. within the forest matrix outside of areas managed for protection) there are a number of strategies that can contribute to maintaining ecological values while allowing development activities to proceed. These include:

- a) consultation and accommodation with First Nations and local communities. This includes accommodating interests in appropriate ways
- b) information gathering and risk assessment prior to development proceeding;

⁶ Menzies, C.R. and C. Butler. 2002. Methodological Review and Approaches for Local/Traditional Knowledge Research: Draft Report. Prepared for the North Coast LRMP. MSRM. Smithers, BC

- c) developing and applying operational guidelines to maintain structural and functional features and minimize impacts across the land base;
- d) adaptive management, by structuring development activities to allow deliberate and well-structured learning to come from activities on the land; and
- e) for major projects⁷, comprehensive environmental impact assessments to identify the individual and cumulative impacts of proposed developments and assessing if and how development should proceed.

3.1.4 Indicators of an EBM Plan

The LRMP was developed using the following elements of ecosystem based management:

The planning process used (i) was a collaborative, multi-stakeholder process, with involvement of sectors representing the range of interests in the plan area (ii) involved a representation of a range of local interests and (iii) involved local First Nations and a consideration of ways to harmonize the LRMP with draft First Nations land use plans, in recognition of existing Aboriginal rights and title.

The content of the LRMP recommendations (i) considered the range of social, cultural, economic and ecological values in the area (ii) considered multiple strategic scales (iii) were based on ecologically-defined areas and in consideration of natural disturbance processes relevant to the plan area (iv) explicitly considered social and economic values and trade-offs during planning (v) were assessed against economic development potential to ensure the product does not impede future EBM-appropriate economic development opportunities and (vi) were designed to concurrently achieve high degrees of ecological integrity and high degrees of human (socio-economic) well-being.

The information used in plan development was (i) informed by best available science - this included research and analysis conducted by the North Coast Government Technical Team, the Coast Information Team, and provincial experts – not all of these products were peer-reviewed (ii) informed by local knowledge and traditional ecological knowledge - people with extensive local knowledge of the plan area provided input through local knowledge mapping, at open houses, and during participation at the LRMP Table - First Nations presented traditional ecological knowledge through their land use plans and during participation at the LRMP Table and (iii) based on up-to-date data, information and analysis techniques.

The nature of the products developed include:

- (i) Chapter 4: Land Use Designations and Direction, which provide zoning for Protection Areas, Biodiversity Areas, Special Forest Management Areas, and EBM Operating Areas;
- (ii) Chapter 5: General Management Direction, which consists of objectives, indicators and targets structured to be consistent with an EBM approach;
- (iii) Chapter 6: Community Stability and Economic Development, which outlines social and economic goals and effectiveness indicators with the interest in maintaining long term human well-being;
- (iv) Section 6.1: Agreement on “No Net Job Loss or Better”;
- (v) Section 7.4 :Requirement for Transitioning to Ecosystem-Based management on the Coast;

⁷ The provincial environmental assessment process determines that a project is considered a major project for environmental assessment review under the following circumstances: (a) the project is of a type and size as set out in the Reviewable Projects Regulation; (b) the Minister of Sustainable Resource Management designates the project as reviewable; or (c) the proponent applies to the Environmental Assessment Office for the project to be designated as reviewable.

- (vi) Chapter 7: Implementation, Monitoring and Amendment, which contains a process for implementation and monitoring of plan effectiveness. As part of this process, a North Coast Monitoring Team will have ongoing opportunities to assess the balance of social, cultural, economic and ecological values in the plan area, consistent with EBM;
- (vii) certain priority issues that have been identified for an adaptive management approach that will inform future planning; and
- (viii) policy recommendations related to increasing the flow of economic benefits to local and First Nations communities.

3.2 An Ecosystem Based Management System for the North Coast

3.2.1 EBM Framework

The LRMP Table recommends that the EBM Management Framework as developed by the Coast Information Team (see Appendix 4) be adopted as an umbrella framework to guide future planning (the EBM Framework”).

3.2.2 EBM Principles

The LRMP Table specifically endorses the following guiding principles of EBM as described in the EBM Management Framework.

- a) **Ecological integrity is maintained** - by sustaining the biological richness and the ecosystem services provided by natural terrestrial and marine processes at all scales through time, including the structure, function and composition of natural terrestrial, hydriparian and coastal ecosystems.
- b) **Human well-being is promoted**- by assessing risks and opportunities for communities, by facilitating a diversity of community economic and business activity, and by planning for local involvement in existing and future economic activities.
- c) **Cultures, communities and economies are sustained within the context of healthy ecosystems** – by sustaining the biological richness and biological services provided by natural ecosystems while stimulating the social and economic health of the communities that depend on and are part of those ecosystems.
- d) **Aboriginal Rights and Title** – Existing aboriginal and treaty rights are affirmed under Section 35 of the *Constitution Act* (1982). First Nations assert aboriginal rights and title to their lands and resources within their traditional territories. The province asserts crown title to lands and resources within the plan area. The LRMP Table acknowledges both of these mutual assertions. Until such time as there is a reconciliation of these competing assertions of rights and title, (i) all appropriate/required consultation and accommodation shall be undertaken with First Nations and (ii) negotiated agreements between First Nations, governments, and third parties can provide a mechanism to define and enable: relationships and understandings between the parties; processes and procedures for cooperative planning and decision-making that enhance First Nations governance structures; mutually acceptable standards for technical planning and operational activity; certainty regarding access to resources and markets; mechanisms for sharing the benefits of resource development (e.g., jobs, training, revenue, raw materials); development of First Nations economies; and provisions for social and environmental monitoring and information sharing. First Nations and the Province have stated that short-term or transitional agreements that are intended to facilitate the implementation of EBM will not limit any future legal proceedings or treaty negotiations.
- e) **The Precautionary Principle is applied** - to human well-being as well as ecosystems by recognizing uncertainty and by working to establish and implement management objectives and targets that err on the side of caution. The onus is on the proponent to show that management is meeting designated objectives and targets. This approach enlists tools such as risk assessment, cost-benefit analysis, monitoring, and adaptive management strategies.
- f) **Ecosystem-Based Management is collaborative** – by encouraging broad participation in planning; by clearly articulating collaborative decision making procedures; by respecting the diverse values, traditions and aspirations of local communities; and by incorporating the best of existing knowledge, including traditional, local and scientific knowledge.

- g) **People have a fair share of the benefits from the ecosystems in which they live**— by acknowledging the cultural and economic connections that local communities have to coastal ecosystems, and by ensuring that diverse and innovative initiatives increase the share of employment, economic development and revenue flowing to local communities, and also maintain cultural and environmental amenities and other local benefits derived from resources.

3.2.3 EBM Handbook

The Ecosystem-Based Management Planning Handbook (the Handbook) (see Appendix 4) focuses on multiple-scale ecological planning and natural resource planning. The expectation is that decision makers, resource professionals, businesses and local people engaged in land and resource management within the plan area will use the Handbook for guidance in the development of EBM plans, forest development plans (FDPs) and forest stewardship plans (FSPs) in the region. The Handbook provides assistance to implement EBM at scales ranging from territories/subregions down to watershed and site plans. The Handbook also incorporates key elements of the *Hydroriparian Planning Guide* (HPG) (see Appendix 4).

The Handbook was prepared to summarize key technical concepts, planning steps and management objectives for consideration by First Nations and LRMP Planning Tables. For practitioners, the Handbook and HPG will provide concepts, methods and management recommendations for Ecosystem Based Management. *The Scientific Basis of Ecosystem-Based Management* summarizes the ecological science underpinning the concepts, methods and thresholds in the Handbook and HPG.

Peer review of the EBM Handbook and the Hydroriparian Planning Guide (the “HPG”) has been finalized and, as such these documents are now complete. The LRMP Table recommends that EBM Handbook be considered a living document (i.e. EBM is a process, not an event) intended to change/evolve over time through passive and active adaptive management (see Section 3.2.9 and Appendix 5). In this regard:

- a) It is understood that information other than CIT products can/should be considered/incorporated through adaptive management; and
- b) It is agreed that all changes to the EBM Handbook, arising through adaptive management or otherwise, are to be made on the basis of government-to-government decisions informed by recommendations from the North Coast Monitoring Team and from the EBM Council.

The LRMP Table recommends that the HPG be adopted as general guidance. Subject to the applicable qualifications and conditions in this report, the LRMP Table recommends the EBM Handbook (which includes key elements of the HPG) be adopted in its entirety for implementation where adoption is understood to mean (both here and wherever this term is used in these recommendations) the following:

- a) The Handbook will be used to guide the development of EBM plans, FDPs and FSPs in the region;
- b) Other than those elements of the EBM Handbook established by the provincial government as legal objectives as recommended by the North Coast LRMP (see Section 3.2.10) the Handbook is intended to be a guide and not prescriptive;
- c) EBM as described in the Handbook will be implemented under the guidance of the LRMP Monitoring Team and EBM Council. Their respective responsibilities and linkages are described in Chapter 7: Implementation, Monitoring and Amendment; and
- d) The Handbook will be used to inform planners and decision makers on the key concepts and basic components and planning and management strategies required for the development of EBM plans; and
- e) Where there is a conflict between the provision in the Handbook and a provision in the GMD, this shall be addressed in the manner described in Section 3.2.7.

3.2.4 Thresholds and Management Targets in the EBM Handbook

The LRMP Table agrees that the various thresholds and management targets in the EBM Handbook represents an ecological precautionary interpretation of the best independent information currently available regarding levels of risk associated with different indicators relative to different levels of forest development.

The LRMP Table agrees/recommends that (i) the thresholds and management targets in the EBM Handbook are intended to evolve/change over time through adaptive management (both passive and active) (see Section 3.2.9 and Appendix 5) and (ii) any such changes are to form the basis of government-to-government decisions informed by recommendations from the EBM Council.

The LRMP Table recommends that the thresholds and management targets in the EBM Handbook (as may be changed over time through adaptive management or through the refinement process referred to in Section 3.2.5) be adopted as the long term ecological goals that will guide planning.

3.2.4.1 Refinement of Representational Thresholds in the EBM Handbook

The representational thresholds in the EBM Handbook are recognized as being a central/critical component of EBM. Arising out of discussion of the EBM Handbook as currently drafted is a recognition that there may be a more refined approach to establishing representational thresholds at the sub-regional/territorial level that is more effective/efficient in terms of concurrently achieving high degrees of ecological integrity and high degrees of human well being. This more refined approach to establishing representational thresholds at the sub-regional/territorial level would be based on (i) grouping ecosystems according to specified ecological criteria (e.g. the habitat value of individual ecosystems, connectivity value of the ecosystems, sensitivity of ecosystem function to reductions in old seral stage conditions, the portion of ecosystem reserved in protected areas, relative frequency/rarity of ecosystems, and the potential ecological impacts of excess levels of mid and early seral habitats) (ii) developing group specific risk curves and thresholds (iii) establishing a range of precautionary targets for each ecosystem grouping based on the ecological criteria as well as the estimated reliability of data (where surrogates are used) and (iv) specifying spatial deployment strategies.

The LRMP Table recommends that (i) this more refined approach to developing representational thresholds and precautionary targets be developed under the direction/management of the EBM Council (ii) the Handbook be amended under the direction of the EBM Council to incorporate this more refined approach once completed and (iii) this more refined approach will be implemented as part of the LRMP.

3.2.5 Making EBM Operational: Risk Managed Targets, Operational Targets and Social Choice

The goal of EBM is to concurrently achieve high degrees of ecological integrity and high degrees of human well-being. In applying the Handbook, the LRMP Table recognizes that

- (i) there are some thresholds and management targets that can be achieved immediately with limited/no adverse impact on human well being;
- (ii) there are circumstances where achieving a particular human well being requirement would result in an unacceptable level of risk/impact to ecological integrity; and
- (iii) there may be some thresholds and management targets that cannot be achieved in the short, medium and/or long term without an unacceptable level of risk/impact to human well being - in this latter case, a transition period or a change in the threshold or target may be appropriate to achieve human well-being.

The LRMP Table agrees that where the implementation of a threshold or management target in the Handbook represents an unacceptable level of risk/impact on human well being, the mechanisms for addressing this are the troubleshooting provisions of the EBM Handbook and/or operational targets (as described below). The application of these mechanisms represents a social choice regarding the appropriate/relative levels of ecological risk and risk to human well being that should apply in any given circumstance. The LRMP Table understands a social choice to be a decision that is informed by a transparent consideration of both ecological risk and risk to human well being.

With a view to ensuring that high degrees of ecological integrity and human well being are concurrently achieved to the greatest extent possible, and that there is a clearly understood and systematic approach to making the required social choice, the LRMP Table recommends that there be a process to periodically establish operational targets that would be used to govern operational activities for defined periods of time. More specifically, the LRMP Table recommends that operational targets be periodically established by operators as follows:

- a) Any operational target that is consistent with thresholds or management targets in the EBM Handbook and the LRMP, can be implemented without referral to the EBM Council or North Coast Monitoring Team;
- b) Wherever possible, operational targets need to be established in a manner that concurrently achieves low degrees of ecological risk and high degrees of human well being;
- c) Where this is not possible immediately, the operational target needs to be established on the basis of a social choice that is (i) informed by the thresholds and management targets (ii) informed by the impact on human well being (iii) guided by the trouble shooting provisions of the Handbook and (iv) informed by the ecological risk;
- d) Operational targets that differ from thresholds or management targets in the EBM Handbook are to be referred to the North Coast Monitoring Team, or such other body delegated this responsibility through government-to-government discussions, for approval based on the foregoing criteria;
- e) Operational targets that differ from thresholds or management targets in the EBM Handbook need to be periodically reviewed by the EBM Council and the North Coast Monitoring Team based on (i) information arising through adaptive management, and (ii) advice from the EBM Science Team where appropriate.
- f) In applying the trouble-shooting provisions of the EBM Handbook, the LRMP Table recognizes that these provisions are intended to address the needs of vulnerable human systems that cannot be addressed without a trade-off and that, in many situations, business and First Nations interests will have an important part to play in improving human well being.

3.2.6 Transitional Management Targets

The LRMP Table recommends that the following Transitional Management Targets apply to forest industry activities while the EBM Council and North Coast Monitoring Team are established. The LRMP Table recommends the North Coast Monitoring Team revisit these Transitional Management Targets on or before March 31, 2005.

Transition phase in: Prior to the formal establishment of the legal objectives resulting from the sign-off of the LRMP, major forest operators have agreed to a voluntary phase-in of the 8 elements of EBM.

Transition for those voluntary elements include:

- High Value Fish Habitat: to be voluntarily implemented within 6 months, and
- Other 7 elements (including blue-listed plant communities) to be voluntarily implemented within 90 days.

The start dates from which those time frames begin is 5 days after the final draft report of the LRMP Table's recommendations are received by Table members.⁸

Representation - Classify the site series or site series surrogates⁹ into five groupings (rare, uncommon, modal, common, and very common) and establish a minimum representation target at the landscape level of:

- a) 90% of the natural occurrence of old seral for any site series surrogate that falls within the uncommon or rare grouping, to a maximum of 2,108 ha retained. The analysis showed that the majority of this area is inoperable or otherwise constrained by current management requirements.;
- b) 70% of the natural occurrence of old seral for any site series surrogate that falls within the modal grouping; and,
- c) 30% of the natural occurrence of old seral for any site series surrogate that falls within the common or very common grouping.

As landscape level planning proceeds, representation targets will be achieved in a manner that enhances conservation of ecological values. In some cases, achieving these representation targets will require recruitment of young forest where old forest does not exist. The ecological values to be considered include, but are not limited to:

- a) Representation of ecosystems that are rare in the landscape;
- b) High value wildlife habitat including wildlife trees;
- c) High value fish habitat;
- d) Riparian ecosystems;
- e) Karst;
- f) Connectivity for focal, blue and red wildlife species;
- g) Unstable slopes;
- h) OGMAs; and
- i) other ecological values

Red-listed Plant Communities - Reserve 100% of CDC red listed plant communities and other non-listed, naturally rare ecosystems. Red-listed and other naturally rare ecosystems that have been harvested should be reserved from further harvest or development. Variance from this target to be guided by the EBM Handbook trouble shooting criteria. Naturally rare ecosystems are to be defined in implementation based on recommendations from the EBM Science Team.

Blue Listed Plant Communities – Reserve 70% of known occurring blue-listed ecosystems at the landscape level to a maximum of 102 ha reserved across the plan area.

Stand Level Retention - 15% minimum retention within cutblocks.

Mid-seral cap at the landscape and watershed scale - Maintain <50% of each ecosystem type in mid seral. In developed landscapes and watersheds with >50% mid seral in the timber harvesting land base, harvest or reserve managed stands to prevent excessive mid seral representation.

Estuaries (watershed scale) - Maintain >90% of the natural riparian forest next to estuaries.

⁸ Current government policy is that transition targets do not apply to existing cutting permits.

⁹ Site series surrogate is defined by best available information as it evolves. As of the date of ratification of the North Coast LRMP, PEM/TEM 3rd decile representation is the best available information.

Swamps and Gullies - Maintain >50% of the natural riparian forest next to fans, forested swamps and small steep streams/gullies with unique microclimate.

High Value Fish Habitat (HVFH) - Reserve all wetlands, active floodplains, active fluvial units and high value fish habitat including buffer (hydriparian buffers are equal to 1.5 times the height of the dominant trees). Definition of HVFH is clarified by, but not limited to, the following examples:

- a) Where fish congregate e.g. where clear water streams enter murky rivers and holding pools;
- b) Critical spawning habitat (e.g. larger spawning beds and spawning beds that support threatened or endangered runs);
- c) Critical rearing habitat (e.g. small streams that do not freeze over and side channels used for rearing) - this definition does not necessarily include all fish habitat - access provisions for crossings are to be as provided for in Forest Practices Code riparian reserves.

3.2.7 Relationship of the Handbook to Resource Management Direction

As described in Chapter 1: Introduction, the North Coast LRMP was mandated to develop a land use plan using an ecosystem based approach to planning and resource management. Along with the Central Coast and Haida Gwaii/Queen Charlotte Islands, this was the first time a LRMP process was mandated to develop land use plans based on the principles of ecosystem based management. As this was a new approach, it was not clear at the outset how LRMP products developed on the principles of ecosystem based management would differ, if at all, from those LRMP products developed prior to EBM. As described in Section 1.2.6.1, the North Coast LRMP process was supported by information developed by the CIT. While the CIT was working on the products it delivered to the LRMP, the LRMP Table was concurrently working on general management direction (GMD) with technical/scientific assistance from the Government Technical Team (GTT).

During the North Coast LRMP process, discussion regarding resource management and planning took place at two different levels. First, there was the ongoing discussion that took place at both the LRMP Table and working groups regarding “general management directions” for the broad range of resource values being considered. This discussion was supported by technical and scientific information and products from the GTT. Second, for some but not all resource values, discussion also took place on the basis of technical and scientific information and products developed by the CIT, in particular the EBM Handbook and Hydriparian Planning Guide.

As a result, North Coast LRMP Table discussions concluded with agreement on a system of EBM based on (i) adoption and application of the EBM Handbook as described in Sections 3.2.1 to 3.2.5 and (ii) agreement on Chapter 5: General Management Direction (GMD). A number of the GMDs address resource values not dealt with in the EBM Handbook. Some GMDs address topics dealt with in the Handbook – in some circumstances, these GMDs go into greater detail than the Handbook provision dealing with the same resource value. For some GMDs, certain implementation indicators, targets, and management considerations were still under development at the deadline for discussion. The process for finalizing the work on these outstanding items is described in Section 3.2.8.

Accordingly, the LRMP Table believes it is important that there be a clear understanding going forward between the role of the EBM Handbook as adopted and applied herein (see Sections 3.2.1 to 3.2.6) and the role of the GMDs described in Chapter 5: General Management Direction or developed through implementation of Section 3.2.8. While the intention is that the EBM Handbook, as adopted and applied in Sections 3.2.1 to 3.2.6, be the primary planning product/mechanism for the topics addressed in the Handbook, it is also important that the incremental level of detail in some of the GMD provide management direction. In this regard, the North Coast Table recommends the following:

- a) For those topics currently addressed in the Handbook (e.g. access, aquatic and riparian ecosystems, coarse filter biodiversity, and timber), general management direction is to flow primarily from an application of the Handbook as adopted and applied in Sections 3.2.1 to 3.2.6. Any objectives, indicators, targets, and/or management considerations contained in a GMD that are incremental to the EBM Handbook provisions on the same topic, or added through the process outlined in Section 3.2.8, are to be considered as management direction. Where there is a conflict between a provision in the EBM Handbook, and a provision in a GMD, this shall be addressed by the EBM Council and the North Coast Monitoring Team. In addressing any such conflict, the North Coast Monitoring Team will do so in a manner consistent with the spirit and intent of the EBM Handbook, as adopted and applied in Sections 3.2.1 to 3.2.6;
- b) For those topics not yet addressed in the Handbook (e.g. grizzly bears, black/kermode bears, cultural heritage resources, tourism, marbled murrelets, non-commercial, recreation, northern goshawk, mineral and energy resources, visuals management), general management direction is to flow from the objectives, indicators, targets, and/or management considerations contained in Chapter 5: General Management Direction or added through the process outlined in Section 3.2.8. Where there is a conflict between such management direction and a provision in the Handbook, this shall be addressed by the North Coast Monitoring Team in a manner consistent with the spirit and intent of the EBM Handbook and the North Coast LRMP, as adopted and applied in Sections 3.2.1 to 3.2.6;
- c) Adaptive management, as described in Section 3.2.9, is to apply to all GMDs in a manner consistent with the spirit and intent of its application to the EBM Handbook; and
- d) Any incorporation of GMD considerations into resource management and planning is to be undertaken in a manner consistent with the spirit and intent of the mechanisms and principles for adopting the Handbook, as described in Section 3.2.3, and for making EBM operational, as described in Section 3.2.5.

3.2.8 Finalization of General Management Direction Under Development

As noted in some parts of Chapter 5: General Management Direction, there was not sufficient time prior to the deadline for the North Coast LRMP to complete the work and discussion required to finalize recommendations on some or all of the indicators, targets, and/or management considerations required to achieve some of specified objectives agreed to for that GMD. For such indicators, targets, and/or management considerations, the LRMP Table recommends:

- a) These items, because they were not resolved at the LRMP Table, may be discussed and resolved in government-to-government discussions. Proposed resolutions arising from these discussions would be brought to the North Coast Monitoring Team for information prior to proceeding with legal establishment.
- b) The indicators, targets, and/or management considerations still under development should be finalized on the basis of recommendations from the North Coast Monitoring Team, as informed by recommendations from EBM Council.
- c) The development of recommendations by the EBM Science Team of the strategies required to achieve these indicators, targets, and/or management considerations should take place under the direction/management of the EBM Council.
- d) In developing/finalizing such recommendations, the EBM Science Team shall use peer reviewed science, double blind wherever possible, and should be informed by work of other initiatives dealing with similar issues; and
- e) Prior to forwarding its recommendations to government on amendments to the EBM Handbook, the EBM Science Team shall forward its draft recommendations to the North Coast Monitoring Team for review and comment;

- f) The work required by the EBM Science Team to develop recommendations on the indicators, targets, and/or management considerations required to achieve these objectives should be undertaken on a priority basis with the objective of finalizing recommendations by March 31, 2005.

Appendix 6 contains a complete listing of all indicators, targets, and/or management considerations under discussion at the time of the deadline for completion of the North Coast LRMP. These are provided by way of information only and on the clear understanding that:

- (i) they have not been agreed to;
- (ii) they are listed only to demonstrate the full range of potential strategies under discussion;
- (iii) the list is not a complete list of the indicators, targets, and/or management considerations discussed or contemplated by the North Coast Table during its deliberations; and
- (iv) the final strategies for each objective, as determined through government-to-government decisions, may include some or all of the indicators, targets, and/or management considerations as listed in Appendix 6 or indicators, targets, and/or management considerations that are modified or entirely different.

In addition to the outstanding indicators, targets, and/or management considerations, ongoing consideration was being given to establishing a more refined approach to operational targets known as “risk-managed targets” that, in some circumstances include multiple levels of risk with different actions associated with these different levels of risk. Examples of this more refined approach to operational targets (e.g. multi-level risk-managed targets) are also included in Appendix 6. The LRMP Table’s expectation is that the work of the EBM Science Team on outstanding indicators, targets, and/or management considerations will include an ongoing exploration of this approach.

The Table’s agreement to the LRMP package was based on final General Management Directions not having any greater negative impact on individual sector interests than the draft General Management Directions individual sectors had agreed to during Table and Working Group discussions, or for those targets not agreed to by the sector, no more restrictive than the suggested amendments to the targets given by the sector at the March 26-29 Table meeting. Final General Management Directions must not impose restrictions to the activities of any sector beyond the restrictions contemplated within the indicators, targets, and/or management considerations the sector had agreed to, without the express agreement of that sector.

3.2.9 Adaptive Management and Ongoing Plan Evolution

One of the key principles of EBM planning is the use of scientific data and research results, as well as local and traditional ecological knowledge, to inform decision-making. In support of that principle, many groups and individuals, including academics, conservation groups, governments (First Nations, local and provincial), and industry, have provided substantial resources and time to providing the most up-to-date, scientifically and locally credible information to the North Coast LRMP process. The resulting information base is unparalleled in the history of land use planning in the Province. At the same time it is recognized that more research is required and that the knowledge used to support land use decisions is continually evolving. For these reasons, LRMP management direction is based on the principle of adaptive management. Therefore, the LRMP Table endorses a process of adaptive management, including assessments and where necessary recommendations, to allow the continual improvement of management practices and policies. This means that new information, research or improved analysis may be utilized to modify and improve management activities.

As the information base improves, implementation of the LRMP needs to respond in a parallel manner. A structure and process for amending the plan is described in Chapter 7: Implementation, Monitoring and

Amendment, allowing the management direction in the plan to be adapted over time as information evolves. In addition, in order to ensure that best available science is used in ongoing decision-making, all the adaptive management projects that support the evolution of resource management targets will undergo a thorough peer review to ensure that the science is credible and based on generally accepted principles and methods.

There are two forms of adaptive management: passive and active. Both are relevant to the implementation of the North Coast LRMP. Key features of passive adaptive management include:

- It is based on explicit objectives;
- It incorporates a monitoring component;
- It monitors the results of alternative practices with regard to achieving specific outcomes and objectives; and
- It is undertaken in a collaborative manner with proponents, governments, other operators, interested parties, research institutions and universities.

Key features of active adaptive management include:

- It is based on explicit hypotheses;
- It is designed as an experiment;
- The methodology is peer reviewed before implementation;
- It produces scientific results that are published;
- It typically undertaken in a collaborative manner with proponents, governments, other operators, interested parties, research institutions and universities.

An adaptive management program will be implemented as part of coast-wide implementation. Priority projects for the North Coast are identified in Appendix 5. Developers are also encouraged to incorporate adaptive management into their operational planning, where possible. Results of adaptive management experiments will be reported back to the LRMP Monitoring Committee to inform potential recommendations for plan amendment. Chapter 7: Implementation, Monitoring, and Amendment outlines the steps for plan amendment.

3.2.10 Legal Objectives

Following Cabinet approval of the LRMP, certain elements of the plan will be established as legal objectives under relevant legislation. In establishing such legal objectives, the LRMP Table:

- a) Acknowledges that the provincial government may proceed immediately with the establishment of legal objectives where required (i.e. it will not be necessary to wait until the EBM Council is established for this work to proceed).
- b) Recommends that the establishment of legal objectives in the future be informed by recommendations from the North Coast Monitoring Team; and
- c) Recommends that prior to establishing any legal objectives, the provincial government will:
 - i) Provide the North Coast Monitoring Team with a clear description of the process and criteria it intends to use in determining which aspects/components of the recommended plan will become legal objectives; and
 - ii) First review such legal objectives in draft with the North Coast Monitoring Team.

3.2.11 Transition to EBM

The participants in the LRMP process recognize that

- d) the overarching goal of EBM is to concurrently achieve high degrees of ecological integrity and high degrees of human well-being; and
- e) the LRMP is intended to evolve over time based on peer reviewed science arising through research, adaptive management (both passive and active), input to LRMP information arising from peer review, First Nations input and issues arising from plan implementation.

Since implementing EBM will result in a substantial change in resource management in the plan area, it is necessary to have provisions in place to be particularly responsive to the economic and ecological issues that arise as the LRMP is implemented. These include:

- f) having a transition period between LRMP approval and full implementation of EBM, with associated operational targets;
- g) providing flexibility to vary from low risk threshold or targets in the short term where the economic and social cost of implementation is too high in the short term; and
- h) allowing LRMP targets to be adjusted as new information based on peer reviewed science becomes available about best management practices for land and resources.

The LRMP Table has developed a strategy for “operational transition” that provides interim targets that exceed the long term low risk to ecological sustainability, but that move to low risk over the long term. Fundamental principles of operational transition include:

- a) Focus conservation efforts on the most sensitive ecological elements as soon as possible, while simultaneously minimizing costs and disruptions to existing planning;
- b) Optimize opportunities to maintain or improve human well-being while taking pro-active measures for transition to an EBM-based economy;
- c) Grandfather existing cutting permits and forest development plans with incorporation of agreed transitional EBM elements in effect at the time of operations as per the phase-in schedule outlined below
- d) As a priority establish milestones starting with immediately visible actions that demonstrate commitment to implementation;
- e) Establish future benchmarks as reference points to monitor progress;
- f) Operational transition will be phased in over 5 years; and
- g) Establish operational pilot projects to facilitate training in the field and further develop EBM application methods.

There are two additional transitional issues that need to be addressed. Language on these is still under development:

- Operating area re-allocation to address issue of differential impacts arising from recommended Protection Areas, Biodiversity Areas, Special Forest Management Areas; and
- Community Forest License support

Operating area re-allocation

Operational planning has been facilitated in recent years by all forest license holders, including BC Timber Sales (BCTS), informally agreeing to chart areas within the North Coast TSA. This is a consensual arrangement amongst license holders as opposed to an arrangement that has a legislative or policy basis. Given the operating areas currently in place amongst existing license holders, the location of

recommended Protection Areas, Biodiversity Areas, Special Forest Management Areas, and visual management areas has the potential of creating significantly differential impacts amongst these license holders (e.g. the chart areas assigned to some license holders will have a greater percentage of Protection Areas, Biodiversity Areas, Special Forest Management Areas, and visual management areas than those assigned to others which results in a greater operational impact, at least in the short term). Accordingly, the LRMP Table recommends that high priority be given to convening a process amongst all forest licensees, including BCTS, to ensure an equitable redistribution of chart areas. In undertaking this redistribution, it is important to look at impact in terms of volume of timber harvesting land base (THLB), quality of THLB, and operational cost associated with that THLB. It will also be important to recognize that non-replaceable forest licenses being issued to First Nations within the Plan Area will be geographic specific licenses associated with the traditional territories of those First Nations and that the chart areas associated with these licenses will need to remain within the traditional territories associated with the licenses. An equitable distribution of operational impacts amongst licensees is viewed by the LRMP Table as an important part of transition and requiring high priority.

Community Forest License

The LRMP Table acknowledges that there is an initiative to establish a community forest license for the City of Prince Rupert (with an annual harvest in the range of 100,000 m³). The LRMP Table supports this initiative. It is recognized that there is not sufficient unallocated volume within the TSA to establish a license with an annual harvest in the 100,000 m³ range. The LRMP Table recommends that the Province give high priority to working with the proponents of the community forest license to both establish this community forest license and to facilitate the acquisition of sufficient volume from existing tenures create a license with an annual volume in the 100,000 m³ range. Creation of a community forest license is viewed by the LRMP Table as an important part of transition.

4. LAND USE DESIGNATIONS AND DIRECTION

4.1 Recommended Land Use Designations

4.1.1 Introduction

Consistent with the guiding principles of ecosystem based management, the LRMP Table recommends four land use designations for the plan area in addition to the existing Protected Areas, namely Protection Areas, Biodiversity Areas, Special Forest Management Areas, and EBM Operating Areas. These designations are intended to guide uses of Crown land at the strategic level. A general description of these designations is provided below.¹⁰

4.1.2 Protection Areas

Protection Areas are defined as areas where (i) commercial forestry, mineral exploration and development, and hydro-electric development are prohibited (ii) First Nations sustenance traditional and cultural uses are permitted provided that they are carried out within ecological limits and (iii) other permitted uses, and the levels of such permitted uses (e.g. tourism, recreation, etc.) are to be determined in a manner that respects and recognizes the primary purpose of Protection Areas as described below.

The primary purposes of Protection Areas are habitat conservation, maintenance of biodiversity, ecosystem representation and function, protection of key habitats for wildlife, including rare and threatened species, seral stage diversity, and/or the protection of special landscape, recreation and cultural heritage features. The specific purpose of individual Protection Areas will vary depending upon the specific resource values and attributes found within that area. In most circumstances, Protection Areas are not intended to exclude human activities. Protection Areas can contribute to increasing knowledge by serving as control sites for research (e.g. benthic monitoring). Protection Areas can contribute economically by providing minimally modified locations for tourism and recreation, where these uses are consistent with the purpose and resource values and attributes for which the area was designated. They also provide certainty to the mineral and energy sector about where exploration and development activities may occur, thereby encouraging investment in this sector of the economy.

The LRMP Table recommends that the areas listed in Table 4 and Table 5, as identified on Map 3: Recommended Land Use Designations be established as Protection Areas¹¹:

Table 4: Goal 1 areas and areas larger than 4000 ha recommended as Protection Areas.

Name	Goal 2 areas included in this Area	Total Area ¹² (ha)
Banks North		15,694
Campania		17,088
Crab Lake		12,514
Dundas-Melville		23,646
Europa Lake		8,757
Khtada Lake		15,835
KsiX'anmas (Kwinamass)		33,449
Khyex	Leverson Lake	48,055

¹⁰ See also Footnote 23 on page 64 regarding the Conservation and Environment Sector's views on hunting.

¹¹ Adjacent areas have been amalgamated into one area. Some Goal 2 areas are amalgamated with larger areas, but they are identified separately in the list of Goal 2 areas.

¹² Areas have not been reduced to account for overlaps with private land, Indian Reserves, or other non-Crown land.

Name	Goal 2 areas included in this Area	Total Area ¹² (ha)
Low-Gamble-Alty	Alty Lake	16,747
Lower Ecstall	North Kumealon-Kildala Crk	12,265
Monkton	Tuwartz Inlet, Saycuritay Cove	28,732
Porcher West		15,705
Sparkling		43,930
Stagoo South		10,867
Stephens Island Group		9,627
Tuck-Woodworth Lakes		4,869
Union Lake		6,232
Upper Ecstall		13,238

Table 5: Goal 2 areas and areas smaller than 4000 ha recommended as Protection Areas.

Protection - Goal 2 or areas less than 4000 ha		
Name	Goal 1 Area that Includes Area	Total Area ¹³ (ha)
Alty Lake	Low-Gamble-Alty	2,250
Aristazabal North - boundary to be finalized through Implementation		3,005
Aristazabal West - boundary to be finalized through Implementation		1,664
Ashdown Island		454
Bishop Bay ¹⁴		2,666
Bonilla Island		786
Captain Cove		40
Crow Lagoon		73
Dudevoir Passage		24
East Simpson Lake		50
Ethelda Bay		68
Fin Island		1,236
Gunboat Harbour		31
Kitkiata Inlet		771
Kitsault Estuary ¹⁵		645
Larcom Lagoon		119
Leverson Lake	Khyex	2,631
Lower Skeena River Sites ¹⁶		662
Lucy Islands		28
MacDonald Inlet		364
Manzanita Cove		21
Maple Bay		1

¹³ Areas have not been reduced to account for overlaps with private land, Indian Reserves, or other non-Crown land.

¹⁴ Bishop Bay includes the Monkey Beach Goal 2 area, which has a no net area loss provision to allow for a possible access corridor.

¹⁵ Kitsault Estuary excludes all mineral tenures, private lands and fee simple lands.

¹⁶ The Lower Skeena River sites does not include the Khyex mudflat.

Protection - Goal 2 or areas less than 4000 ha		
Name	Goal 1 Area that Includes Area	Total Area¹³ (ha)
North Danger Rocks		0
North Kumealon-Kildala Creek	Lower Ecstall	3,098
Quottoon Narrows		135
Saycuritay Cove	Monkton	49
Shearwater Hotsprings		14
Skeena River Estuary Sites		29
Stair Creek Eco Reserve		794
Thulme Falls		52
Turtle Bay		153
Tuwartz Inlet	Monkton	624
Union Passage ¹⁷		803
Wales Harbour		213
Weeteeam Bay		3,655
Winter Inlet		10
Zumtela Bay		16

The LRMP Table has recommended that three candidates for protection status be addressed in government-to-government discussions: Hinton Island, Kennedy Island, and Tsimtack Lake. These are also identified on Map 3: Recommended Land Use Designations. Should government-to-government discussions result in any of these areas being designated with protection status, the Equivalency Provision of Section 4.2.2 will apply. The following Adjustment Provision will apply to these areas, as well as to the Recommended Goal 2 areas.

Adjustment Provision: The Goal 2 areas recommended in Table 5 will be subject to a detailed review during implementation to confirm that these areas do not create any significant impediments to access or to log storage and/or handling. If the review identifies any significant access impediments, the LRMP Table recommends that:

- (i) a boundary adjustment shall be made to address the access impediment, and
- (ii) this boundary adjustment will be done on the basis of input from the North Coast Monitoring Team.

If there is no practical/feasible boundary change that can be made to maintain access or log storage opportunities, then the area might be deleted from the Goal 2 list subject to the Equivalency Provision described in Section 4.2.2.

For each recommended protection area, the LRMP Table recommends that the North Coast Monitoring Team:

- finalize a description of those attributes giving rise to the protection area designation; and
- develop recommendations on strategic management direction and/or other considerations that should be included in management plans for the area. This could include (i) specific types of land and resource uses permitted or appropriate to the area, and (ii) where required, the level or intensity of those uses.

¹⁷ The Union Passage area may require a slight boundary revision or a notation to allow access.

4.1.3 Biodiversity Areas¹⁸

Biodiversity Areas are defined as areas where commercial forestry and major hydro-electric development¹⁹ are prohibited but mineral exploration and development are permitted. These areas are considered part of the Mineral Zone of the Two-Zone system for mineral exploration and mining in BC, in accordance with EBM. Biodiversity Areas contribute to strategic level conservation values by being located adjacent to Protection Areas or existing parks, resulting in large aggregations of lands managed for biological diversity. The primary role of the Biodiversity Areas is conservation and the contribution to the maintenance of species, ecosystems and seral stage diversity and ecosystem function.

All Biodiversity Areas are recommended to be available for First Nation’s traditional uses within ecological limits. The specific purpose of individual Biodiversity Areas will vary depending upon the specific resource values and attributes found within that area. Biodiversity Areas can contribute to increasing knowledge by serving as control sites for research (e.g. benthic monitoring). Biodiversity areas may also contribute significantly to recreational, cultural heritage and tourism economic objectives provided they are consistent with EBM, Biodiversity Area objectives and final management plans drafted by the North Coast Monitoring Team.

The LRMP Table recommends that the areas in Table 6, as identified on Map 3: Recommended Land Use Designations, be established as Biodiversity Areas. In discussions between the Major Forestry Sector and the Conservation Sector, which were informed by the CIT’s Ecosystem Spatial Analysis, these areas were identified as having high conservation value and prioritized for conservation.

Table 6: Areas recommended as Biodiversity Areas.

Biodiversity Areas	
Name	Area²⁰ (ha)
Alwyn Lake	1,370
Johnston-Quaal	56,360
Kingkown	13,236
Pa’aat	4,868
Porcher Island	20,635

The northern portion of Porcher Island, as identified on Map 3: Recommended Land Use Designations, has significant mineral tenures and mineral potential. This area was also identified by various First Nations as a candidate for various types of protection type status. The LRMP Table recommends that the status of this area be addressed in government to government discussions.

¹⁸ The Mineral Sector and the Conservation Sector abstained from the Table consensus on the recommendations in Section 4.1.3 Biodiversity Areas and Section 4.1.4 Special Forestry Management Areas. This means neither sector formally agrees nor disagrees with these recommendations. In abstaining, each sector confirmed they (i) strongly support the overall package of recommendations embodied in the North Coast LRMP as finalized and (ii) understand and recognize that the recommendations on Biodiversity Areas and Special Forestry Management Zones may be further discussed and addressed in government to government discussions.

¹⁹ Major hydro-electric development is defined in terms of the ecological impact of the development, not in terms of the size of the development (e.g., power output, length of transmission line, or size of creek developed). Major developments include dams on major drainages, major river and creek diversions, and developments requiring major infrastructure with a potentially large impact on water, fish, or ecosystems. Examples of acceptable minor developments with low impact are: dams on small creeks to supply power for local facilities like tourism lodges and exploration camps; and small run-of-river developments where some water is pipe-fed to a turbine to generate power for a local project.

²⁰ Areas have not been reduced to account for overlaps with private land, Indian Reserves, or other non-Crown land.

For each recommended Biodiversity Area, the LRMP Table recommends that the North Coast Monitoring Team:

- finalizes a description of those attributes giving rise to the biodiversity area designation based on information that includes existing mineral tenures, mineral potential mapping, and the Ecosystem Spatial Analysis; and
- develops recommendations on strategic management direction and/or management considerations that should be considered in developing management plans for that biodiversity area. These management plans need to address both biodiversity conservation and opportunities for permitted economic activities.”

4.1.4 Special Forest Management Areas

Special Forest Management Areas are areas where commercial forestry and major hydro-electric development²¹ are prohibited. First Nations traditional uses, mineral exploration and development, tourism, recreation and other activities are permitted and shall take place as if in EBM Operating Areas. The Table recommends that the areas listed in Table 7, as identified on the Map 3: Recommended Land Use Designations, be established as Special Forestry Management Areas:

Table 7: Areas recommended as Special Forest Management Areas.

Special Forest Management Areas	
Name	Area ²² (ha)
Kitsault-Stagoo	58,484
Kshwan	40,185

For each recommended Special Forest Management Area, the LRMP Table recommends that the North Coast Monitoring Team finalizes a description of those attributes and management considerations giving rise to the Special Forest Management Area designation based on information that includes existing mineral tenures, mineral potential mapping, and the Ecosystem Spatial Analysis.”

4.1.5 EBM Operating Areas

EBM Operating Areas are defined as areas available for the full range of economic uses, provided that such uses are consistent with the application of Chapter 3: Ecosystem-Based Management and Chapter 5: General Management Direction. Economic activities such as commercial forestry, mineral exploration and development, and hydro-electric development are permitted in EBM Operating Areas, as are smaller-scale and emergent economic activities such as tourism, commercial recreation, manufacturing, “green” energy production, non-timber forest product harvesting, and community settlement.

Within the EBM Operating Areas, the consumptive use of the natural resources is to be maintained within limits that can be sustained over the long-term in accordance with EBM principles. The focus of resource development within the EBM Operating Areas is to:

- enhance community stability and individual well-being;
- encourage economic diversification and innovation; and
- increase the local employment, economic development, revenue, cultural and environmental amenities and other benefits derived from resources.

²¹ Major hydro-electric development is defined in footnote 19 in Section 4.1.3 Biodiversity Areas.

²² Areas have not been reduced to account for overlaps with private land, Indian Reserves, or other non-Crown land.

EBM Operating Areas are those parts of the plan area that fall outside of private land, Nisga'a settlement land, existing Protected Areas, recommended Protection Areas, and Biodiversity Areas, Special Forest Management Areas. EBM Operating Areas are identified on Map 3: Recommended Land Use Designations.

4.2 Finalizing Land Use Designations

4.2.1 First Nations

The LRMP Table acknowledges that final decisions on all aspects of its recommendations, including Protection Areas, Biodiversity Areas, and Special Forest Management Areas, will be made on the basis of government-to-government discussions that will take place between the province and each of the First Nations in the LRMP area. The LRMP Table recommendations for Protection Areas, Biodiversity Areas, and Special Forest Management Areas are not intended in any way to restrict First Nations sustenance, cultural, and spiritual uses, which will continue to be permitted in these areas provided that they are carried out within ecological limits.

The LRMP Table also acknowledges that Chapter 3, Section 119 - 121 of the Nisga'a Final Agreement details specific obligations that the Province of British Columbia must follow with regards to planning and management of provincial parks in the Nass Area and also deals with the potential establishment of a Marine Park in the Nass Area. Upon or prior to any protection area designation being applied as part of the North Coast LRMP, the LRMP Table recommends that the provincial government work with the Nisga'a to determine when and how these clauses in the Nisga'a Final Agreement may be applied to the recommended Protection Areas.

4.2.2 Flexibility for Government-to-Government Discussions

Flexibility Principle:

The LRMP Table recognizes and acknowledges the following with regard to government-to-government discussions between the provincial government and First Nations:

- Table recommendations on Protection Areas, Biodiversity Areas, and Special Forest Management Areas will inform the position of the provincial government in government-to-government discussions with First Nations;
- There are inconsistencies between the Protection Areas, Biodiversity Areas, and Special Forest Management Areas as recommended by the LRMP Table and the land use plans developed by the various First Nations within the North Coast plan area; and
- Flexibility in the negotiating mandate of the provincial government with First Nations will facilitate a successful conclusion to government-to-government discussions regarding the land use plan recommended in this LRMP.

Accordingly, the LRMP Table wishes to advise both the provincial government and First Nations that Table participants will support changes to the Protection Areas, Biodiversity Areas, and Special Forest Management Areas recommended in Section 4.1, subject to the following Equivalency Provision:

Equivalency Provision: the final package arising out of government-to-government discussions:

- (i) Includes equivalent or greater protection of ecological values;
- (ii) Has an impact on timber harvesting land base that is equivalent or less (i.e. similar or less in terms of both quantity and quality of timber harvesting land base impacted); and
- (iii) Does not create any access impediments (as per the "Adjustment Provision" described in Section 4.1.2).

Community Priorities: The communities of the North Coast suggest that the following three areas are of the highest priority for protection and request the Province give priority consideration to the protection of these three areas during government-to-government discussions, consistent with the Flexibility Principle and Equivalency Provision:

- Khtada Lake;
- Squatteree (in Stevens Island Group); and
- Welcome Harbour.

5. GENERAL MANAGEMENT DIRECTION

5.1 Introduction

The North Coast LRMP Planning Table has developed recommended management direction for the range of resource values in the plan area to provide greater certainty for local economic development and the long-term sustainability of ecological values. As noted in Section 3.2.8, this management direction arises from both the adoption of the EBM Handbook as described in Sections 3.2.2 to 3.2.6 and from the general management direction (GMD) described in this chapter. This recommended GMD was developed with a commitment to balance the economic, environmental, and social interests within the planning area within the context of the wider regional and provincial setting.

Each section in this chapter contains the recommended management direction for an individual resource value, such as timber, biodiversity and tourism and needs to be read in conjunction with Sections 3.2.7 and 3.2.8. The GMD for each resource value is comprised of the following:

Management intent: A broad goal statement or statements describing the desired outcome of management.

Objectives: Objectives describe the desired future condition of the land base for each key management issue pertaining to the resource.

Implementation indicators: Indicators identify the values(s) to be managed to achieve the objective.

Targets: Targets define acceptable limits for the implementation indicators within which objectives can be met. The combination of indicators and their associated targets provide the measure of successful plan implementation.

Management considerations: These are additional considerations for developers when implementing the plan. Typically they are suggested strategies to optimally achieve the objective.

Once the LRMP is approved by the provincial government, these GMDs will provide policy direction to all provincial agencies in approving and planning future resource management activities in the LRMP area. Objectives, indicators and targets have been prepared to be consistent with a results-based approach to planning and management. Selected components of the management direction will become legally established as part of LRMP implementation.

The GMD described in this chapter is applicable in all EBM Operating Areas (See Section 4.1.5). They are also applicable in:

- (i) Protection Areas, if consistent with the definition and area-specific direction for the Protection Area, as developed by the North Coast Monitoring Team (as recommended in Section 4.1.2);
- (ii) Biodiversity Areas, if consistent with the definition and area-specific direction for the Area, as developed by the North Coast Monitoring Team (as recommended in Section 4.1.3); and
- (iii) Special Forest Management Areas.

Access, Aquatic and Riparian Ecosystems, Coarse Filter Biodiversity, and Timber are addressed both in the EBM Handbook and in the GMD. Management direction for other resource values is not specifically addressed in the EBM Handbook. Section 3.2.7 clarifies the relationship between the GMD and the EBM Handbook and provides guidelines to address any inconsistencies between the two. More specifically, the following GMD is understood to be subject to both adaptive management and the principles and mechanisms for making EBM operational as generally described in Chapter 3: Ecosystem-Based Management and Chapter 7: Implementation, Monitoring and Amendment.

5.1.1 Proviso for major projects:

Maximum disturbance targets in the management direction may be exceeded by major projects that have:

- undergone a full environmental review (i.e. meeting or exceeding the requirements of the *Canadian Environmental Assessment Act* and/or *BC Environmental Assessment Act* as they exist in 2003); and
- have undergone extensive consultation and accommodation with First Nations; and
- have undergone thorough consultation with local governments, communities, stakeholders and the public; and
- where the outcome of that review has determined that environmental impacts can be adequately avoided, mitigated or rehabilitated and that the benefits to the community are sufficient to allow an increased level of ecological risk as a result of development.

Projects need to be assessed in a timely manner. The LRMP Monitoring Committee will review the recommendations from the environmental assessment process and provide recommendations regarding the consistency of the project proposal in meeting the intent of the LRMP. In proceeding with an approved major project, the proponent will develop and implement a management plan that addresses risk and incorporates inputs from consultation and accommodation to minimize overall impacts. The proponent will undertake monitoring and post adequate bonding to ensure funding is available for mitigation and rehabilitation.

The provincial environmental assessment process determines that a project is considered a major project for environmental assessment review under the following circumstances:

- The project is of a type and size as set out in the Reviewable Projects Regulation;
- The Minister of Sustainable Resource Management designates the project as reviewable; or
- The proponent applies to the Environmental Assessment Office for the project to be designated as reviewable.

5.2 Vision and Goals

The participants in the LRMP process agreed to the following vision and goals to guide their work in developing the plan. The goals are based on the principles of ecosystem-based management developed as part of the larger coastal planning strategy.

Vision statement:

The vision of the North Coast Land and Resource Management Plan is to provide strategic resource management planning direction that will address local, provincial and global interests, and will ensure that environmental, cultural, social and economic values are sustained for the benefit of present and future generations.

The plan will strive to protect, enhance and rehabilitate resources. The plan will also strive to increase economic opportunities and to reflect the diversity of the plan area. It will do this through the use of an ecosystem-based resource management framework and through involvement of stakeholders in a balanced and consensus-based process.

*Goals:*²³

- Healthy, fully functioning ecosystems provide the basis for sustaining communities, economies, cultures and the quality of human life. Therefore ecological sustainability²⁴ is fundamental to land and resource management.
- Empowered and healthy communities play a leadership role in sustaining healthy ecosystems, cultures and economies.
- Focus planning on the needs of the ecosystems and the values that you want to maintain.
- Planning should be done over ecologically and economically relevant time frames and involve regional, landscape and site scale planning.
- Incorporate the best of existing knowledge (e.g. traditional, local and western science) into planning and decision-making.
- Knowledge of natural processes and human interactions is incomplete and inherently limited, and decisions made in the present can pose unknown risks and unacceptable consequences for the future. Apply a precautionary approach, monitor ecological consequences, practice adaptive management in decision-making, and adopt a learning approach to planning. Apply a precautionary approach to human well-being and socio-economic monitoring.
- Maintain natural, social and economic capital in the region, support strong healthy economies and jobs in the local and provincial context, and preserve the full range of options for future generations.
- Respect individuals, communities of interest (including businesses) and cultures.

²³ The Conservation and Environment Sector opposes the hunting of carnivores within the plan area, and opposes all hunting within Protection Areas, Areas with No Logging and No Major Hydroelectric Development, and Grizzly Bear Management Areas, with the exception of First Nations' subsistence, ceremonial and cultural use within ecological limits.

²⁴ Sustainability, for the purpose of this discussion is defined as “A state or process that can be maintained indefinitely.” The principles of sustainability integrate three closely interlined elements—the environment, the economy and the social system—into a system that can be maintained in a healthy state indefinitely.

5.3 Access Management

5.3.1 Resource Values

Access provides opportunities throughout the North Coast area for residents and non-residents to enjoy the benefits of spectacular terrain and features that enhance the quality of life and economic opportunities.

The one main travel route is Highway 16. Only four roads have been built off Highway 16, including the road to Port Edward. Two of these have been deactivated. The Lachmach Road remains open to Work Channel. Other notable roads or road networks include the following:

- A road connects the community of Lax Kw'alaams with Tuck Inlet, from which a ferry takes passengers to Prince Rupert.
- Another road runs from Highway 37 to Kitsault. This road is private and public access is controlled by a gate.
- The Scotia River road network extends from the southern bank of the Skeena River to the Ecstall River. The road network is accessed by a private barge that crosses the Skeena River when operations are active in the Scotia River area.
- Another large network of roads not linked to the Scotia River Road extends from the other side of the Ecstall River to the coast.
- North of Alice Arm, a road follows the Kitsault River for about 25 km. Although it is classified as a public highway, it is only accessible by ATV. All branches off this road have been deactivated.
- Green River Forest Service Road, also known as McNeil River.

With the exception of the road leading into Kitsault, all of the secondary roads in the plan area are forestry-related or are First Nation cultural highways. All mineral exploration activity has been helicopter supported in the past 10 years, resulting in no new road or skid trail development. Older exploration trails have regenerated. Hydro lines and pipelines also provide access.

5.3.2 Management direction for access

Development of roaded access is permitted throughout the LRMP area outside of areas zoned for protection. Within Protection Areas, access management will be defined on a case-by-case basis²⁵. Management direction for access is included in individual sections throughout the GMD. These are summarized in Table 8. Table 9 lists the objectives, indicators and targets that were developed to guide access planning and development for issues that are not addressed in other GMD sections. Flexibility has been incorporated into access-related objectives and targets in recognition of the site-specific nature of access development and the need to more thoroughly address access issues at the operational scale. This includes provisions for GMD targets to be exceeded for major projects where a full environmental assessment, as stipulated under provincial and/or federal law, has determined the timing and conditions under which the project may proceed (see Section 5.1.1: Proviso for Major Projects).

The *Forest Practices Code Act*, *Forest and Range Practices Act*, and Mineral Exploration Code provide a framework for access development, such as road layout and construction, in consideration of the range of resource values. Road deactivation and restoration activities are required under current legislation and

²⁵ There is currently no area specific management direction for Protection Areas. When specific management direction is developed (e.g. through protection area management plans), access will be considered. The intent is to maintain the values for which the area was protected while not orphaning areas beyond Protection Areas, nor hindering compatible opportunities within Protection Areas.

policy to mitigate sedimentation into waterways and reduce the risk of road failure following harvesting and silvicultural operations.

Table 8: Cross-reference to objectives, indicators and targets across the GMD that relate to access.

Section	Objective	Relationship to access management
A. Roaded access		
5.4 Aquatic and riparian	Objective 1: To maintain water quality and quantity	<p>Management targets not yet resolved.</p> <p>Pertains to access to the extent that access management is required to minimize and mitigate erosion or slope failures and affect on water quality.</p> <p>Management Considerations present strategies to minimize erosion potential and impacts to water quality.</p>
	Objective 2: To maintain the productive capacity of high value fish habitat	<p>Management targets not yet resolved.</p> <p>Pertains to access to the extent that access management is required to minimize or mitigate impacts on high value fish habitat</p>
	Objective 3: To sustain the healthy functioning of the complete range of hydroriparian ecosystems	<p>Management targets not yet resolved.</p> <p>Pertains to access to the extent that access management is required to minimize or mitigate impacts on various hydroriparian ecosystems, including estuaries, lakes and wetlands, floodplains and fans.</p> <p>Contains some Management Considerations related to road crossings and roads on active floodplains.</p>
5.6 Coarse filter biodiversity	Objective 4: To maintain mature and old forest linkages.	<p>Management targets not yet resolved.</p> <p>Pertains to access to the extent that maintaining connectivity affects access development</p>
	Objective 5: To identify and reserve key wildlife migration/movement corridors	<p>Management targets not yet resolved.</p> <p>Pertains to access to the extent that reserving movement corridors affects access development</p>
	Objective 6: To maintain the structural and functional integrity of rare ecosystems	<p>Management targets not yet resolved.</p> <p>Pertains to access to the extent that maintaining the integrity of rare ecosystems affects access development</p>

Section	Objective	Relationship to access management
	Objective 7: To maintain the structural and functional integrity of karst ecosystems	Management targets not yet resolved. Pertains to access to the extent that maintaining the integrity of karst ecosystems affects access development
	Objective 8: To minimize potential for erosion and sedimentation	Management targets not yet resolved. Pertains to access to the extent that access management is required to minimize and mitigate erosion or sedimentation
	Objective 9: To protect known critical habitat features	Management targets not yet resolved. Pertains to access to the extent that protecting critical habitat features affects access development
5.7 Cultural Heritage Resources	Objective 1: To ensure First Nations and Non- First Nations sites are protected/managed	Pertains to access to the extent that managing or protecting cultural heritage sites affects access development
5.8 Grizzly Bears	Objective 1: To minimize mortality risk to bears related to motorized road access	Management targets not yet resolved. Indicators are associated with road density and connected road networks. Management Considerations present strategies to minimize risk to bears related to road access
	Objective 2: To minimize road-induced displacement/mortality risk to bears within or adjacent to critical habitats	Management targets not yet resolved. Management Considerations present strategies to minimize risk to bears related to road access
	Objective 5: To maintain the integrity of, and linkages amongst, critical grizzly bear habitat	Management targets not yet resolved. Pertains to access to the extent that maintaining the integrity of critical habitats and linkages affects access development
5.10 Mineral and energy resources	Objective 1: To allow access for mineral, aggregate and energy activities	Pertains outside of Protection Areas

Section	Objective	Relationship to access management
5.11 Non-commercial recreation	Objective 4: To promote and maintain opportunities for recreational access	Deals with access planning and maintaining the availability of access to recreational sites/areas. Site-specific planning for access to consider recreational interests and involve First Nations and the public.
	Objective 8: To promote recreational opportunities and access along the Highway 16 corridor	Deals with maintaining access to recreational sites along the Highway 16 corridor and involving First Nations and the public in access planning.
5.12 Northern Goshawk	Objective 1: To maintain goshawk nest and post-fledging areas with sufficient mature/old growth forest to allow continued occupancy and reproduction	Management targets not yet resolved. Pertains to access to the extent that maintaining sufficient mature and old forest within nesting and post-fledging areas affects access development
5.13 Timber	Objective 2: To assess access to timber supply across the land base	Management targets not yet resolved. Pertains outside of Protection Areas, Biodiversity Areas and Special Forest Management Areas
5.14 Tourism	Objective 4: To maintain and enhance opportunities for access to tourism areas.	Deals with access planning and maintaining the availability of access to tourism sites/areas. Site-specific planning for access
5.15 Ungulates	Mountain goat: Objective 1: To maintain the functional and structural attributes of goat winter ranges	Management targets not yet resolved. Pertains to access to the extent that maintaining attributes of goat winter range affects access development
	Objective 2: To maintain habitat suitability of winter range by minimizing disturbance and mortality risk to goats	Management targets not yet resolved. Indicators and Management Considerations refer to temporary and permanent infrastructure within proximity of goat winter range
	Objective 3: To minimize road-induced displacement and mortality risk to mountain goats within or adjacent to UWR	Management targets not yet resolved.

Section	Objective	Relationship to access management
	Moose and Deer: Objective 1: To minimize potential for moose and deer mortality in roaded areas.	Management targets not yet resolved. Management Considerations present strategies to minimize ungulate mortality due to vehicular collisions and increased mortality on publicly accessible roads.
5.16 Visual Quality	Objective 1: To ensure that management maintains the quality of visual experiences	Pertains to access to the extent that maintaining the quality of visual experiences affects access development
B. Air access		
5.5 Black/Kermode Bears	Objective 4: To minimize impacts to bears from commercial and non-commercial wildlife viewing	No air-based bear viewing
5.8 Grizzly Bears	Objective 6: To minimize impacts to bears from commercial and non-commercial wildlife viewing	No air-based bear viewing.
5.15 Ungulates	Objective 2: To maintain habitat suitability of winter range by minimizing disturbance and mortality risk to goats	Management targets not yet resolved. Indicators and Management Considerations discuss aircraft activity within proximity of confirmed goat winter range during vulnerable periods (October 31 to June 30).

Table 9: General management direction for access not addressed in other sections.

Management intent:		
<ul style="list-style-type: none"> Access that provides for the full range of user needs in a manner that (i) is consistent with maintaining ecological, cultural and social values as described in this plan, and (ii) does not create problems regarding the obligations of the developer for road maintenance and deactivation. 		
Objective	Measures of success	Management considerations
<p>1. Cultural, environmental, economic, recreational, and nature-based tourism values are maintained when planning for or implementing access and facilities development. This includes the following:</p> <ul style="list-style-type: none"> In consultation with First Nations, local communities and user groups identify and evaluate environmental, recreational, and cultural heritage values that can be affected by development of access and facilities. Development and use of current and planned access and facilities, including construction, maintenance, and deactivation activities, maintains environmental, recreational, tourism, educational, economic and cultural heritage values. In consultation with First Nations, local communities and user groups, government to ensure risks to environmental, tourism, recreational, and cultural heritage values are mitigated when approving a road restoration plan. Encourage the use of mitigation measures to maintain environmental, tourism, recreational, and cultural heritage values during and after development of permanent access and facilities Appropriate access and facilities management strategies should be in place prior to development. Maintain best management practices in locating infrastructure. 	<p>Number of critical incidents²⁶ to environmental, recreational, and cultural heritage values caused by access and facilities development.</p> <p>Area of site disturbance</p>	<p>Consider concerns for safety, the environment, social and economic viability when determining appropriate access.</p> <p>Consider access options that reflect other resource values during review and approval processes.</p>

²⁶ Incidents = mass wasting, slides, events that would harm or risk environmental, recreational, and cultural heritage values

Objective	Measures of success	Management considerations
<p>2. Access and facilities are planned and managed for a range of land use activities through access management plans and are funded through a variety of sources e.g., proponents of developments, government, etc. This includes the following:</p> <ul style="list-style-type: none"> • Complete access management plans²⁷ with First Nations, communities and user groups that provide for: <ul style="list-style-type: none"> - The full range of resource development and user needs including the maintenance of roads for recreation and tourism and other appropriate needs. - Development of options for access and facility needs that benefit all user groups. - Coordination of access and facilities development amongst users so that future development utilizes existing or shared access whenever possible. • Monitoring Committee, provincial government, etc. to establish access management committees including First Nations, communities, and user groups as required to develop short and long term solutions for access and facility needs including methods for access control. • Monitor and assess access management plans, including road development. • In the absence of access management plans, the types and degree of acceptable access will be determined through existing interagency review and public consultation processes. 	<p>Number of access management plans pee</p>	<p>First Nations Land Use Plans are available, subject to FN desires, for use in access planning.</p>
<p>3. Effective access and facilities plans may be developed for long term resource management and development needs.</p> <ul style="list-style-type: none"> • Maintain access for ongoing resource management requirements (e.g. silvicultural activities, restoration and salmon stock assessment) and other long-term resource development needs (e.g. mining and mineral exploration). • As an alternative to permanent deactivation, consider the use of temporary access restrictions, where appropriate. 	<p>% of land base occupied by access structures inside and outside the timber harvesting land base.</p>	<p>This tool will be used by the Monitoring Team to measure the effectiveness of access management plans.</p> <p>First Nations Land Use Plans are available, subject to FN desires, for use in access planning.</p>

²⁷ Access management plan: An operational plan that shows how road construction, modification and deactivation will be carried out to protect, or mitigate impacts on known resources or sensitive areas while maximizing the efficacy of forest resource development

5.4 Aquatic and Riparian Ecosystems

5.4.1 Resource Values

The North Coast LRMP plan area includes an array of aquatic and riparian resource values, which in combination render an extraordinary number of micro-habitats for a vast number of species. Higher order, low gradient stream reaches and adjacent riparian spaces in particular support an impressive number of animal, plant and other life forms as well as great structural diversity. Tremendous interaction is concentrated upon relatively small areas. Because of the significant value associated with a diverse mix of oftentimes rich and productive habitat, it is important to specifically consider fish and wildlife populations which use riparian and aquatic habitats, the evident interdependence of these habitats; and the influence and importance of adjacent upland habitats.

First Nations have, over time, extensively used and continue to use, both riparian habitats and the resources dependent on them. First Nations have a strong interest in the restoration and maintenance of healthy aquatic and riparian systems supporting healthy fish populations, and therefore strongly support the protection of riparian habitat.

Riparian and aquatic areas are the zones utilized most heavily by a great number of animals. Some are obligate hydri-riparian species (e.g. salmon and river otter) which would be unable to successfully conduct the business of life elsewhere. Other species frequent hydri-riparian areas more by choice. While it is true that some may not absolutely require either riparian or aquatic areas, these places in many cases, remain the preferred or optimum habitat(s) for them.

Aquatic ecosystems of concern in the plan area include lakes, streams, wetlands and marine habitats. Management emphasis related to fish and wildlife (terrestrial and aquatic) reflects the importance of travel corridors, and feeding, breeding and rearing areas in and adjacent to water. Productive sites grow large trees that contribute significantly to structural diversity of habitats and are integral to hydri-riparian ecosystem functioning. Because of high productivity and diversity, these areas are important ecologically and economically. Aquatic and riparian ecosystems are highly interdependent.

5.4.2 Resource Issues

The health of aquatic and riparian ecosystems is dependent on a full suite of intact ecological functions which foster life in a self-sustaining manner. These functions include but are not limited to:

- transporting water;
- providing and transporting downed wood, and other organic material;
- filtering and transporting sediment and dissolved materials;
- providing shade;
- stabilizing banks;
- providing corridors for animal movement and plant dispersal; and
- providing breeding, rearing and feeding habitat for aquatic and terrestrial animals.

The most important riparian habitats are those of lower gradient and greatest complexity. Due to the mountainous topography of the North Coast, they are spatially limited, typically occurring in close association with mainstem reaches, at low elevations in valley bottoms. These are usually also preferred locations for resource development activities, with roads and railways limited by construction, operational and logistical constraints. Timber harvesting, and residential and industrial developments also often occur in valley bottoms.

Reduced ecological functioning is a risk of development. Whether developments occur within aquatic or riparian ecosystems or alternatively on slopes above, developments in coastal areas with high rainfall and unstable terrain have the potential to exacerbate mass wasting and sedimentation from upland areas into streams and streamside forests. Disturbances of marine blue clays and other easily mobilized sedimentary deposits are a concern.

5.4.3 Management Direction for Aquatic and Riparian Ecosystems

Some hydriparian values, such as fish habitat and water quality are protected under existing legislation (i.e. *Fisheries Act, Water Act*). The Federal Department of Fisheries and Oceans (DFO) typically reviews projects where direct impacts to fish and fish habitat are expected to occur, and gives direction to the proponent to ensure that there is no net loss of the productive capacity of fish habitat.

The recommended management direction in Table 10 focuses on maintaining ecological function in and around aquatic habitats. It is suggested that activities in sensitive areas be preceded and guided by evaluations of key ecological attributes to ensure a continuance of unimpaired function. Most management targets, once developed, will be applied to an ecological zone referred to as the hydriparian ecosystem: aquatic ecosystems plus adjacent terrestrial ecosystems that are influenced by, or influence, the aquatic system. They extend vertically, below ground in the soil, and above ground toward the vegetation canopy. For practical purposes, this plan defines the area as the aquatic habitat and adjacent plant communities influenced by water plus the area extending one and a half tree heights (of the tallest trees on a site, horizontal distance) beyond. For aquatic systems without an obvious riparian plant community adjacent to the aquatic habitat, the one and a half tree heights will be measured from the high water mark.

Some management direction is intended to be applied at the watershed level. Map 4 defines the watershed boundaries to be used in these cases.

Management direction is founded on the assumption that healthy and productive aquatic and riparian ecosystems can be maintained by:

- Advancing local knowledge and furthering the degree to which values and ecosystem function are considered prior to development planning.
 - Planning and managing resource activities across the landscape such that important biological and physical processes are identified, documented appropriately and managed in keeping with low risk and/or to a higher risk if consistent with the concept of adaptive management.
- Planning development activities to protect values and functions by
 - reserving areas important to fish or wildlife,
 - buffering and maintaining connectivity of reserved areas to protect and enhance the form and function of reserves, and
 - implementing adaptive management commensurate with the degree of departure from a low risk target/threshold. Information gained is to be made available to the resource management community at large.

To ensure that management approaches to protect values succeed, decisions regarding development of hydriparian ecosystems are to be informed by:

- inventory of high-value fish habitat;
- wildlife assessments identifying areas of concentrated wildlife use or otherwise important to wildlife;

- enhanced geoscience assessments to address management as related to karst and terrain stability (marine blue clays and other easily mobilized surface materials) in order to avoid irreversible impacts; and
- windthrow assessments (the entire plan area is considered to be a windthrow prone zone).

General management direction for aquatic and riparian ecosystems is to primarily flow from the adoption and application of the relevant provisions of the EBM Handbook and Hydroriparian Planning Guide (HPG) as described in Sections 3.2.3 to 3.2.8. The following is additional direction based on Table discussion. It is provided to further assist/inform resource management and planning in the manner described in Section 3.2.8 and is subject to both adaptive management and the principles and mechanisms for making EBM operational as generally described in Chapter 3: Ecosystem-Based Management and Chapter 7: Implementation and Monitoring. The following additional direction should always be read in conjunction with the relevant provisions of the Handbook and HPG as adopted and applied in Sections 3.2.3 to 3.2.8.

Table 10: General management direction for aquatic and riparian ecosystems.

<p>Management Intent:</p> <ul style="list-style-type: none"> • To maintain the productive capacity of aquatic ecosystems throughout the plan area, including all fish habitat, by sustaining natural water quality and quantity, and sustaining natural stream channel form and function. • Ensure protection of riparian habitat to provide sufficient salmon resources to meet local and First Nations needs • To maintain the productive capacity of riparian ecosystems, and a natural abundance of fish, and wildlife, by retaining structural and functional integrity. • To maintain breeding and rearing habitat for wildlife drawn to or dependent upon aquatic ecosystems. • To maintain natural ecosystem connectivity, and • To provide for viable land use and development in the context of the above goals. 			
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Objective	Implementation indicator(s)	Target(s)	Management considerations
1. Maintain water quality and quantity within the range of natural variability.	1a. Number of incidents of possible development related erosion and/or slope failures.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Consider activities that create risk of erosion and slope failure. In order to mitigate the effects of erosion related to multiple active roads, avoid development that simultaneously modifies both sides of streams. Dual development could be mitigated by more riparian protection. Avoid building roads immediately above sensitive spawning or rearing areas. Provide greater riparian setback in areas which are prone to high natural erosion.
	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8 Indicator 1b.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8
	Still under development at LRMP deadline - to be finalized through implementation as	Still under development at LRMP deadline - to be finalized through	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8

Objective	Implementation indicator(s)	Target(s)	Management considerations
	described in Section 3.2.8 Indicator 1c.	implementation as described in Section 3.2.8	
2. Maintain the productive capacity of all high value fish habitat ²⁸	Percent of high value fish habitat by watershed ²⁹ unmodified by human activities.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	<p>Watershed level inventory of high value habitat could inform development-planning processes in advance. Existing inventories of fish and fish habitat should be amalgamated into a single, user-friendly database and made readily accessible to resource developers and other interests.</p> <p>High value fish habitats are habitats that are important to the viability of a particular stock or population of fish. They include:</p> <ul style="list-style-type: none"> • Productive spawning beds for salmonids, eulachon, or other fish, • Productive rearing and over-wintering habitats and high-water refuge areas, and • Immediate riparian areas bordering the important aquatic habitats listed above, that are integral to aquatic structure and function and from which there may be impacts to the natural levels of temperature, water quality, sedimentation and bank stability as a result of development. <p>Encourage programs to educate public about damage to spawning habitat through recreational and tourism activities.</p> <p>Forested habitat upslope of high value fish habitat may be important to maintaining the productive capacity of</p>

²⁸ An understanding of the ecological functioning of the fisheries ecosystem is required to identify critical habitats. Some spawning, rearing, high water refuge or overwintering habitat may not be designated as critical habitat if changes to such habitat are not expected to alter the productive capacity of the fisheries ecosystem.

²⁹ Watersheds boundaries are defined on Map 4.

Objective	Implementation indicator(s)	Target(s)	Management considerations
			<p>habitat.</p> <p>Limiting access may be important to maintaining local fish populations.</p> <p>Conduct fish presence and habitat inventories prior to development. If industrial development results in the loss of fish habitat as defined under DFO policy, the concept of no net loss over time through the use of replacement or compensatory mechanisms will be followed.</p> <p>Protect and restore freshwater fish populations and habitats. Maintain high quality fish habitat in watersheds with abundant salmon populations and sustain adequate levels of adult returns and population age structure of aquatic species.</p>
<p>3. Sustain natural healthy ecological functioning of the complete range of hydroriparian ecosystems.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p> <p>Hydroriparian ecosystems for application of general provisos.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p><i>Wildlife</i></p> <p>In headwater reaches and non-fish streams, amphibians can be the dominant vertebrate predators. The degree to which amphibian streams are buffered is a factor that influences the abundance of amphibians.</p> <p>Invertebrate species assemblages of non-fish streams including ephemeral streams can differ greatly from those of fish streams.</p> <p>Hydroriparian areas are natural corridors for wildlife movements.</p> <p><i>Coarse Woody Debris</i></p> <p>May need to develop procedures to identify streams dependent on downed wood. Consideration of dependency should be based on the stream's fullest geomorphologic maturity, and not necessarily the current development stage of a stream immediately following a landslide.</p>

Objective	Implementation indicator(s)	Target(s)	Management considerations
			<p>In stream channels dependent on downed wood, or with naturally unstable banks, manage streamside activities to maintain windfirm buffers and maintain natural rates of downed wood stream introductions.</p> <p>Developers will demonstrate due diligence to the extent that they assess the hydriparian ecosystem in advance of development and protect and buffer important habitats and ecosystem elements.</p> <p>Qualified professionals are to conduct geoscience, windthrow and wildlife assessments to ensure negative impacts are avoided or alternatively to develop mitigation strategies.</p> <p>*Links to tourism and recreation GMD.</p>
	<p>Indicator 3a. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	

Objective	Implementation indicator(s)	Target(s)	Management considerations
	<p>Indicator 3b. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p><i>Lakes:</i> There is a need for a lake classification on the North Coast. One of the outcomes of lakes classification will be an identification of appropriate levels of management to maintain lake values. In the absence of fish inventory, the province shall classify lakes, by applying the precautionary approach for lakes having the potential of containing fish. Development within or adjacent to lakes should be preceded by inventory of high value fish habitat (as per Obj. 1), aquatic values and sensitive areas, including osprey and eagle nest sites. Manage lakeshore areas to prevent soil degradation, develop and implement management strategies that maintain lakeside riparian forest habitat values (as distinct from hydroriparian buffers), including wildlife access/forage/nesting/denning and safety cover requirements. Large culturally modified trees (CMTs) located along major shorelines are often also considered high value wildlife trees. Buffers have been identified for wetlands as an approximation of the hydroriparian ecosystem.</p>
	<p>Indicator 3c. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>

Objective	Implementation indicator(s)	Target(s)	Management considerations
	described in Section 3.2.8		
	Indicator 3d. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Road crossings and rights-of-way widths on floodplain should be minimised; modifications of active fans are to be avoided. Floodplains and channels rely on transportation of CWD from up-slope areas or streams. See the HPG for further guidance. Roads on active floodplain and across active fans, must be guided by geoscience assessments which ensure that natural alluvial processes are maintained. ³⁰
	Indicators 3e, 3f, 3g, 3h, 3i. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8
	Indicator 3j. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8
	Indicator 3k. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Areas favoured by nesting and foraging eagles include forest adjacent to estuaries, tidal narrows, lagoon shorelines and other areas of restricted tidal flushing.

³⁰ See MoF Extension Note #30, *Tributary Alluvial Fans* (Wilford, 1998) and Wilford, Dave. 1999. *A strategy for forest management and restoration on alluvial fans in the Prince Rupert Forest Region*. MoF BC.

Objective	Implementation indicator(s)	Target(s)	Management considerations
4. Maintain ecosystem connectivity.	Connectivity is addressed in Section 5.6: Coarse Filter Biodiversity.		

5.5 Black/Kermode Bears

5.5.1 Resource values

Black bears (*Ursus americanus*) are ubiquitous on the North Coast. They occur throughout the plan area, although some of the outer islands do not appear to be occupied. LRMP densities are estimated between 200 and 500 bears per 1000 km² but trends are unknown. First Nations advise that they have and continue to utilize black bears for food and cultural purposes.

Kermode bears (*Ursus americanus kermodeii*) have been differentiated from black bears on the basis of skull and tooth measurements, rather than on the periodic occurrence of a white colour phase. The white colouration is due to a recessive gene, which means that two genes are required to express the white coat. Many individuals carry only one gene, so they appear like normally coloured black bears but they carry the genetic potential to pass the white coat colour onto the next generation. The distribution of the white phase or Kermode bears in the Plan Area is clumped, with the highest frequency occurring on Gribbell Island. Commercial black bear viewing in the plan area is increasing in popularity, primarily associated with the viewing of Kermode bears.

Coastal black bears take advantage of a wide variety of vegetative and animal food sources. Spring habitats include beaches, estuaries, forested and non-forested wetlands, skunk cabbage swamps and avalanche chutes. Summer berry habitats include low, mid and high-elevation open forests and forest openings. The fall diet is heavily oriented to spawning Pacific salmon, although some north coastal black bears appear to be less dependent on salmon than grizzly bears (G. MacHutchon, pers comm.). This is probably because their ability to fish for salmon is influenced by the presence of the larger grizzlies³¹. Regardless, fishing is a key component of the annual ecology of black bears and the supporting role of these animals in maintaining forest productivity (through the transport of salmon carcasses away from streams) has been clearly demonstrated³².

Coastal black bears are dependent on old-growth structure for winter denning. Den cavities are most often found inside large (greater than 1.4m diameter) standing live, standing dead or downed dead trees or logs. Black bears will den in second growth stands in old-growth stumps. A successful den is energetically efficient (dry) but also secure from predators (e.g. wolves, other bears). As a consequence, some dens are elevated (up to 20 m above ground level) and den openings are small relative to body size. Coastal black bears do not den in rock cavities. Tree cavities are most often found in Western red cedar (*Thuja plicata*) and Yellow cedar (cypress) (*Chamaecyparis nootkatensis*) and cavity re-use is common³³.

Habitat security in the form of climb trees (particularly for adult females and their cubs) appears to be an essential element of coastal black bear habitat. The highest rate of cannibalism determined for a North

³¹ MacHutchon, A.G., S. Himmer, H. Davis, and M. Gallagher. 1998. Temporal and spatial patterns among coastal bear populations. *Ursus* 10: 539 - 546

³² Reimchen, T.E., D.D. Mathewson, M.D. Hocking, J. Moran, and D. Harris. 2003. Isotopic evidence for enrichment of salmon-derived nutrients in vegetation, soil and insects in riparian zones in coastal British Columbia. In *Nutrients in Salmonid Ecosystems: Sustaining Production and Biodiversity* (J. Stockner, ed). Proceedings of the 2001 Nutrient Conference Restoring Nutrients to Salmonid Ecosystems held at Eugene, Oregon 24 – 26 April 2001.

³³ Davis, H. 1996. Characteristics and Selection of Winter Dens by Black Bears in Coastal British Columbia. Master's Thesis. Simon Fraser University. Burnaby, BC

American black bear population was recorded in the Nimpkish River valley on Northern Vancouver Island³⁴. Females with cubs will not forage far from climb trees while feeding in openings.

The Gitga'at Nation has established a Kermode Bear Stewardship Area on Gribbell Island and on portions of nearby Princess Royal Island, both of which have the highest occurrence of the white color phase of the subspecies *Ursus americanus kermodeii* in the plan area. The purpose of the stewardship area is to ensure a viable and healthy population of the Kermode subspecies through application of management direction that includes:

- Protection of critical denning and seasonal foraging habitat.
- Management of watersheds within the Gribbell landscape to low risk targets for coarse filter biodiversity (maximum 17% by site series by watershed).
- No bear hunting in the Stewardship Area or on nearby islands and adjacent mainland watersheds.
- Restriction of commercial and public bear viewing activity to 2 fixed viewing sites with site-specific management plans compliant with the Guidelines and Tenure Requirements for Land-based Bear Viewing in Coastal BC.

5.5.2 Resource Issues³⁵

Issues of concern related to black bears on the North Coast are:

- Mortality risk associated with human food and garbage;
- Mortality risk associated with connected road networks;
- Protection of critical denning and foraging habitat;
- Provision of stable landscape level forage supply (and possibly forest plantation damage by black bears);
- Requirement for suitable Wildlife Trees as escape trees in and near forest openings;
- Displacement from preferred habitat or habituation as a result of bear viewing, including viewing of Kermode bears; and,
- Potential disruption of the white coat colour gene frequency, where this is expressed in the North Coast plan area, through a variety of human influences.

5.5.3 Management direction for black/Kermode bears

5.5.3.1 General management direction

For the most part, management for black/Kermode bears is addressed through the GMD in other sections (e.g., aquatic/riparian, coarse filter biodiversity) (Table 11). Some management issues are also addressed under the GMD for grizzly bears within grizzly bear occupied habitat, which only includes the mainland portion of the plan area. Black bears are ubiquitous throughout the area.

³⁴ Davis, H. and A.S. Harestad. 1996. Cannibalism by black bears in the Nimpkish Valley, British Columbia. *Northwest Science* 70:88-92

³⁵ See also Footnote 23 on page 54 regarding the Conservation and Environment Sector's views on hunting.

Table 11: General Management Direction for black/Kermode bears.

Management intent:			
<ul style="list-style-type: none"> • To maintain the abundance, distribution and genetic diversity of black bear populations, including the Kermode subspecies; • To maintain the quality and quantity of bear habitat across multiple scales; • To minimize risk of bear displacement and mortality as a result of human activities, including roaded and air access; • To minimize the potential for bear-human interaction; and • To manage human activities, including bear viewing, so that bear habituation does not exceed low to moderate levels. 			
On-the-ground objective	Implementation indicator(s)	Target	Management considerations
1. To maintain adequate foraging habitat for black bears.	-	-	<p>This objective will be met by the combination of management targets under Objectives 1 and 3, Section 5.6: Coarse Filter Biodiversity and Objective 4, Section 5.8: Grizzly Bears. Within landscapes important to black bears, targets that (a) maintain <50% in mid seral stage and (b) minimize crown closure within regenerated stands will contribute to bear foraging opportunities.</p> <p>Map important bear habitat.</p>
2. To maintain critical denning habitat for black bears.	-	-	<p>This objective will be met by targets under Objective 6: Coarse Filter Biodiversity to maintain stand structural elements and large groupings of retained trees (> 1 ha in size within cutblocks larger than 40 ha). These targets will contribute to critical denning requirements and safety tree requirements for black bears.</p> <p>Stand level retention should retain known dens and large diameter and height trees within windfirm patches. In addition, retaining existing coarse woody debris, including large diameter downed wood, on harvested blocks will provide opportunities for bear denning.</p> <p>Cedar salvage operations should include provision for black bear dens.</p>

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
3. To maintain the integrity of critical habitats for black bears.	-	-	<p>This objective will be met by a variety of objectives for Aquatic and Riparian Ecosystems (Section 5.4) and Grizzly Bears (Section 5.8). Providing some level of forested retention adjacent to estuaries, wetlands, lakes, swamps, floodplains and fans, and other hydroriparian elements will contribute to maintaining critical habitat for black bears. Management direction to maintain fish habitat and adjacent forest will also contribute to bear habitat requirements.</p> <p>Do not use aerial herbicide applications in highly effective bear habitat. Target only vegetation directly competing with crop trees.</p>
4. To minimize impacts to bears from water- and air-based commercial and non-commercial wildlife viewing.	See Management Considerations	See Management Considerations	<p>Promote high level of awareness about low impact water-based bear viewing among commercial and non-commercial users.</p> <p>The LRMP recommends Mouse Creek, within Khutzeymateen Inlet, as a preferred location for spring and fall water-based bear viewing³⁶.</p> <p>The Province has limited jurisdiction to regulate water-based bear viewing activities. However, a set of water-based bear viewing guidelines have been developed with which commercial viewing operators are encouraged to voluntarily comply.</p>
	4b. Amount of air-based bear viewing.	No air-based bear viewing.	Aircraft should strive to stay a minimum of 500m from bears (vertically and horizontally). Inform pilots of flying practices that minimize disturbance of bears.

³⁶ The Chatham Sound Coastal Plan is expected to identify the primary use of the Khutzeymateen Inlet as water-based bear viewing.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
5. To minimize impacts to bears from land-based commercial and non-commercial wildlife viewing.	5a. Number of tenures for random land-based bear viewing ³⁷	No tenures for random land-based bear viewing	
	5b. Location of fixed land-based bear viewing ³⁸ .	Fixed land-based bear viewing is permitted in the following landscape units: (<i>as per FN perspectives on land-based bear viewing in their traditional territories</i>)	Fixed land-based bear viewing will be managed according to principles of ecosystem-based management. LWBC to work with MWLAP to assess and provide direction on appropriate management of fixed land-based bear viewing operations as applications for tenures come forward. This includes assessing the carrying capacity of bear viewing operations in relation to a proposed site and to the plan area as a whole. It also includes establishing limits on the number of visitors per day and the cumulative number of user days per active season. Carrying capacity will be re-visited as each new proposal is put forward.
	6c. Compliance with bear viewing guidelines e.g., draft <i>Guidelines and Tenure Requirements for Land-based Bear Viewing in Coastal BC</i> ³⁹	100% compliance by tenured bear viewing operations.	Undertake regular monitoring and enforcement of bear viewing guidelines among tenured operators. Enforce closure of untenured land-based bear viewing operations.

³⁷ During random land-based bear viewing people move around on the land to enhance the opportunity to see bears. There is no predictability in place and time of human activity.

³⁸ During fixed land-based bear viewing, there is an established viewing area and access to and from the viewing area and the number and timing of visitations is managed to provide predictability for the bears, which has shown to be less influential on bear habituation and displacement.

³⁹ These guidelines require a site-specific management plan that outlines number of user days, times of day, access routes, platform location, safety protocols.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
	6d. Opportunities for recreational hunting and fishing within tenured sites for fixed land-based bear viewing.	Opportunities maintained for recreational hunting and fishing.	<p>Commercial bear viewing operators to consult with recreational hunters and fishers to identify strategies to address issues related to shared use of a viewing area.</p> <p>Bear viewing zones include a single specified site for viewing activities surrounded by an area of closure to bear hunting that equates to the home ranges of any adult female using the viewing area. These zones will be defined during the implementation phase.</p> <p>Regulation of carrying capacity within bear viewing areas needs to take into account the level of public recreational use.</p>
7. To prevent bear mortality resulting from negative bear-human interactions e.g., bears conditioned to human attractants (garbage, pet food, offal, etc).	Number of reports of negative bear-human interactions.	Reduction in number of interactions over time	<p>Where possible, initiate programs to educate members of the public and visitors re low impact food and garbage handling methods.</p> <p>Educate public regarding alternatives to shooting to reduce bear-human conflicts, e.g., waste management strategies, trail closure, etc.</p>

5.6 Coarse Filter Biodiversity

5.6.1 Resource Values

Biodiversity is the term used to describe the diversity of plants, animals and other living organisms in all their forms and levels of organization, including genes, species and ecosystems, and the evolutionary and functional processes that link them. Key features of biodiversity in the North Coast area include: large, contiguous tracts of coastal temperate rainforest having natural disturbance processes that are based primarily on gap dynamics (small, stand-replacing events) (Dorner and Wong, 2001); and an extensive network of diverse ecosystem types and predator prey systems. Much of the species diversity in the area consists of epiphytic and epixylic plants (including lichens and mosses) and invertebrates in forest canopy and soil.

There is a low frequency of fire and other extensive, stand-replacing disturbances, such as windthrow and landslides, in the North Coast. For the most part forests turn-over gradually by the death and replacement of individual trees, creating small canopy gaps. This ongoing pattern of small-scale disturbance events results in a structurally diverse and uneven-aged forest, having multi-aged patches and layers of vegetation, and a range of tree sizes and ages, including very large, old trees.

The moist, mild climate and extremely productive forests at low to middle elevations provide habitat for a large diversity of invertebrates and birds, and variety of other terrestrial animals. Prominent wildlife species relying on forests include grizzly bear, black bear (including the subspecies *kermodei*), marbled murrelet, northern goshawk, wolf, mountain goat, black-tailed deer, and moose.

The Coastal Western Hemlock zone contains a number of red- and blue-listed plant associations or community types, most of which are present in the CWHvm and CWHvh subzones. Many of these rare plant associations occur at lower elevations, in valley bottoms and along marine shores. Others are found in terrain with base-rich bedrock, especially limestone.

The North Coast LRMP area includes Coastal Temperate Rainforest. Coastal temperate rainforest comprises approximately 0.2% of the global land base. Half of this occurs along the west coast of North America between Alaska and northern California⁴⁰. In the perhumid temperate rainforests of the north coast of BC a combination of maritime climate, heavy precipitation, infrequency of fire, and a rich input of nutrients from both the marine and terrestrial environments has resulted in structurally impressive, ecologically distinct and diverse forest ecosystems. A significant portion of the world's remaining undeveloped coastal temperate rainforest in the world exists in British Columbia.

The North Coast contains many islands of diverse sizes. Physical isolation of some fauna and flora on islands tends to result in genetic isolation, sometimes leading to sub-speciation or speciation. The chances of this are relatively high on numerous coastal islands, leading to unique contributions to biodiversity.

5.6.2 Resource Issues

Biodiversity is addressed in two ways: coarse and fine filter management. Coarse filter management occurs throughout the land base and assumes that the habitat needs of most species will be addressed by managing forests in a way that reflects the natural disturbance processes for the area. Fine filter management addresses the more specialized habitat requirements of species whose needs are not met by the broadly applied coarse filter management. In the North Coast LRMP, fine filter management has been

⁴⁰ Ecostrust/ Conservation International. 1992. Coastal Temperate Rain Forests: Ecological Characteristics, Status and Distribution Worldwide. Occasional Paper Series No. 1. Statistics shown here are based on GIS analysis of precipitation, vegetation, forest and land use maps.

developed for grizzly and black bear, ungulate winter range (for mountain goat, moose, black-tailed deer), marbled murrelet, and northern goshawk (see other sections).

There are a number of approaches to land management that are necessary to conserve biodiversity at the coarse filter. These include:

- establishing Protection Areas to provide representation of ecosystems by ecoregion and biogeoclimatic zone at the sub-regional scale (addressed in Section 4.1);
- retaining functional areas of representative ecosystems (site series) in old forest condition at the landscape scale (see Map 5: Landscape Units);
- maintaining a spatial pattern of old and mature forest cover consistent with natural disturbance patterns;
- Managing for important structural attributes within forested ecosystems at the stand-level; and
- Ensuring sufficient undisturbed habitats on coastal islands that ecosystem processes (particularly persistence of small populations and probabilities of colonization and dispersal) can continue at natural rates.

The EBM Handbook provides an approach to managing for coarse filter biodiversity based on an understanding of risk associated with differing levels of deviation from natural disturbance regimes within the context of multiple spatial scales (sub-regional/territorial, landscape/watershed and site/stand levels). This approach is based on the assumption that the further the forest condition deviates from natural benchmark conditions (based on the range of natural variability or RONV), the higher the risk to coarse filter biodiversity.

5.6.3 Management direction for coarse filter biodiversity

The intent of land use management for coarse filter biodiversity with respect to forested ecosystems is to maintain sufficient representation of all forested ecosystems (site series and/or site series surrogate⁴¹) in the old growth condition such that risk of losing any one remains low.

The following is proposed to address coarse filter management in the North Coast LRMP:

- General Management Direction for all forested ecosystems.

5.6.3.1 General management direction for coarse filter biodiversity

General management direction for coarse filter biodiversity is to primarily flow from the adoption and application of the relevant provisions of the EBM Handbook as described in Section 3.2 of this document. Table 12 provides additional direction based on Table discussion. It is provided to further assist/inform the finalization of the General Management Direction in the manner described in Section 3.2.8 and is subject to both adaptive management and the principles and mechanisms for making EBM operational as generally described in Chapter 3: Ecosystem-Based Management and Chapter 7: Implementation, Monitoring and Amendment. The following additional direction should always be read in conjunction with the relevant provisions of the EBM Handbook as adopted and applied in Sections 3.2.3 to 3.2.8.

⁴¹ Site series surrogate is defined by the best available information as it evolves (at a minimum TEM/PEM 3rd decile representation).

Table 12: General management direction for coarse filter biodiversity.

Management intent:			
<ul style="list-style-type: none"> To maintain the natural biodiversity of the North Coast LRMP area, including the full range of functional ecosystems, over time and at all scales. 			
On-the-ground objective	Indicator(s)	Management Target	Management considerations
1. To maintain representation of old forest ecosystems by site series and/or site series surrogate by BEC variant ⁴² , and in consideration of traditional ecological knowledge, throughout the plan area.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8
2. To promote the recovery of structural and functional characteristics of old forest in each site series and/or site series surrogate within managed landscapes.	Indicator 2a. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Some operational approaches for these site series and/or site series surrogate are: No harvesting Increased rotation length, especially for sites already harvested Silviculture to promote regeneration of redcedar, yellow cedar and spruce Thinning of second growth forest to promote gaps, coarse woody debris and other structure. Developing old-growth recovery curves.

⁴² Appendix 7 lists the Forest Cover inventory age classes eligible for old growth definition by BEC site series.

On-the-ground objective	Indicator(s)	Management Target	Management considerations
	Indicator 2b. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	
3. To maintain a frequency distribution of seral stages over time that is generally consistent with the natural disturbance regime.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8
4. Maintain mature and old forest linkages within and between hydriparian and upland areas at a watershed level.	Number of development activities that incorporate and address ecosystem connectivity issues.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8
5. Identify and reserve key wildlife migration/movement corridors.	Number of identified and reserved key wildlife migration/movement corridors	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Identify and protect functional levels of habitat, travel migration corridors and breeding grounds Ongoing inventory and monitoring of wildlife migration corridors.

On-the-ground objective	Indicator(s)	Management Target	Management considerations
<p>6. To maintain the structural and functional integrity of rare ecosystems including those that are red- and blue-listed by the BC Conservation Data Centre.</p>	<p>6a. Spatial extent (ha) of red-listed plant communities.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Tactical and operational planning should include assessment of potential development for inclusion of rare ecosystem types, and subsequent exclusion of these ecosystems from the area affected. (definition of rare ecosystems will be finalized by the EBM science team as per section 3.2.8)</p> <p>Management of riparian ecosystems (e.g., floodplains) will contribute to achievement of objectives for red- and blue-listed ecosystems.</p>
	<p>6b. Spatial extent (ha) of individual blue-listed plant communities other than CWHvm1/08 (BaSs-Devil’s Club)</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>
	<p>6c. Spatial extent (ha) of individual blue-listed plant communities classified as CWHvm1/08 (BaSs-Devil’s Club)</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	
	<p>Indicator 6d. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Recommend a no-development, windfirm buffer of appropriate width adjacent to each red- or blue-listed plant community polygon to avoid windthrow in the ecosystem.</p> <p>Consider other mitigative measures to avoid negative impacts such as partial harvesting, and location of old growth management areas.</p>

On-the-ground objective	Indicator(s)	Management Target	Management considerations
<p>7. Maintain the structural and functional integrity of Karst ecosystems</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p> <p>Spatial extent (ha) of karst ecosystems.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>An inventory of karst landforms is available.</p>
<p>8. To retain sufficient structural attributes within harvested areas to maintain substantial habitat quality and species diversity through a rotation.</p>	<p>8a. Proportion of old trees (live and dead) retained in each cutblock opening.</p>	<p>Minimum of 15%⁴³.</p>	<p>This target should be tested through adaptive mgmt to assess biological benefits and socio-economic impacts.</p> <p>Retention as Wildlife Tree Patches and/or reserves and Riparian Reserves that are representative of the harvested area to the level of site series. Retain key habitat elements such as bear dens, bat hibernacula, and bird nesting cavities. Retain structural elements such as large standing live and dead trees (> 30 cm dbh & > 5 m high), horizontal and vertical heterogeneity, and a characteristic species mix for the stand. Redcedar and yellow-cedar are preferred trees for retention.</p>

⁴³ This target from the Ecosystem Based Management Planning Handbook (Oct 2003) Table 6.1

On-the-ground objective	Indicator(s)	Management Target	Management considerations
	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p> <p>8b. Size (ha) of groupings of stand level retention, to provide windfirmness, habitat needs and interior conditions, within cutblocks > 40 ha.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>These larger wildlife tree patches and/or reserves to include special habitat elements (dens, hibernacula, cavities, etc.) where possible.</p>
	<p>8c. Amount of coarse woody debris retained in harvested areas.</p>	<p>Leave large pieces of coarse woody debris on ground, where these exist prior to harvesting.</p>	<p>Wildlife tree retention is required to recruit coarse woody debris.</p>
<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p> <p>9. To allow the ecosystem processes of colonization, dispersal, reproduction and survival on islands to continue within their natural range of variability.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	
<p>10. To minimize potential for erosion</p>	<p>Still under development at LRMP deadline - to be finalized</p>	<p>Still under development at LRMP deadline - to be finalized through</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as</p>

On-the-ground objective	Indicator(s)	Management Target	Management considerations
and sedimentation.	through implementation as described in Section 3.2.8	implementation as described in Section 3.2.8	described in Section 3.2.8
11. Maintain natural species assemblages and prevent the introduction of exotics.	Number and extent of exotic species.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8
12. Designate and protect known critical wildlife habitat features vital to a variety of species	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	<ul style="list-style-type: none"> • Identify known critical wildlife habitat features at the landscape or stand level prior to resource development and incorporate their management and protection. • If a previously unidentified critical wildlife habitat feature is discovered during development, incorporate their management and protection. • Minimize road induced displacement and mortality risk within or adjacent to critical habitats. • Monitor herbicide application in areas containing critical wildlife habitat features. <p>The EBM Science Team and the Province will periodically determine the status of critical habitat for wildlife within the coastal planning areas and complete an analysis of how EBM is meeting critical habitat objectives .</p>

Appendix 7: Coarse Filter Biodiversity Tables contains the following tables:

- Table 34. Ecosystem groupings for application in meeting targets for old growth retention and representation in Objective 1. Site series surrogates based on PEM are listed in Table 36.
- Table 35. Forest Cover inventory age classes eligible for old growth classification by site series. Note that this table is based on the 1997 Forest Cover inventory for the North Coast, and will have to be updated with subsequent inventories.
- Table 36. Site series surrogates: Groupings of site series employed by the current Predictive Ecosystem Mapping (PEM)

5.7 Cultural Heritage Resources

5.7.1 Resource values

The NC LRMP area has a rich cultural heritage reflecting past and present uses by aboriginal and non-aboriginal people. There are two main types of cultural heritage resources recognized in the objectives and strategies in this section: archaeological and First Nations traditional use. Cultural heritage resource types are not mutually exclusive. Additionally, all North Coast residents have important linkages to the land that is an important aspect of the Northern Culture. These values are in addition to the important First Nations cultural values.

1) Archaeological sites

These are sites that have physical evidence of past human habitation or use. Archaeological sites are either prehistoric (pre-contact) or historic in nature. Many archaeological sites contain both pre-contact and historic era components. For example, many present day First Nations communities are situated on ancient village sites that were also inhabited in historic times. Other examples of pre-contact sites include, but are not limited to, sites containing burials (human remains and associated artifacts), old village sites, shell middens, cultural depressions, camp sites, CMTs, pictographs and petroglyphs, stone or wooden fish weirs, stone canoe skids, trails, quarry sites, etc. Artifacts may be made of stone, wood, bone, bark, ceramics, or metal, for example: stone projectile points, bone harpoon heads, coppers, basketry, etc. Due to the relatively recent arrival of non-aboriginal peoples in the region most archaeological sites (both prehistoric and historic era) are First Nations in origin.

Sources, such as First Nations and local knowledge, traditional use information, academic archaeological research, archaeological overview assessments (AOAs), archaeological impact assessments (AIAs), and archival sources provide a basis for the identification of archaeological sites and localities.

Archaeological site information and locational data are confidential. They are available from the Archaeology and Registry Services Branch and First Nations upon approved request, on a legitimate need basis.

2) Historic Sites

These are sites with historic significance associated with post-contact non-aboriginal or aboriginal heritage events. By definition historic sites are classified as archaeological sites. Under certain provincial legislation differing levels of protection may apply to historic sites. All historic sites, whether aboriginal or non-aboriginal in nature, within the LRMP area are located either within the traditional territories of the Tsimshian or Haisla or within the Nass Area or Nass Wildlife Area as defined in the Nisga'a Final Agreement. There are a number of historic sites dotted throughout the plan area that are reminders of industries and communities that once thrived in the region. These include cannery sites, Port Essington community, Haysport community, Hospital Island, and the munitions store on Wales Island, for example. Some sites may be located on fee simple lands; LRMP direction only applies to those sites that are not located on privately held lands (although heritage legislation does apply on private lands).

3) First Nations Traditional Use Sites and Cultural Landscapes

Traditional use sites include any geographically defined area (on land or water) used traditionally by one or more groups of aboriginal people for some type of activity. These sites may lack the physical evidence of human-made artifacts or structures yet maintain cultural significance to a living community of people. Examples include resource gathering/utilization areas such as fishing sites, hunting camps, hunting grounds, trapping areas, berry picking areas, traditional trails, legendary/sacred sites, battle sites, etc.

Traditional use sites are more than the specific sites in which traditional camps are located or resource gathering occurs. Oral history, family genealogies, myth and language connect First Nations' people to the land, rivers, lakes, and the sea; sites of these types are considered cultural landscapes. Although many traditional use areas have no physical evidence of past aboriginal use, these places signify enormous value for the identity of First Nations people. For a people whose history is based on oral tradition, traditional use sites and cultural landscapes are where First Nations persons learn about and experience their history and relationship with the land.

Government and industry have legal obligations to work closely with First Nations. Government and industry obligations have been defined in a series of court cases on constitutionally protected aboriginal rights over the past two decades. Further detail is provided in the Chapter 2: First Nations Planning and Participation.

Traditional use studies (TUS) have been started by most of the First Nations in the LRMP area. While the Archaeological Overview Assessment is public information, both the First Nations and the Archaeology and Registry Services Branch consider archaeological site and traditional use information sensitive and confidential and therefore are not generally available to the public. The extent to which traditional use and other cultural heritage information is made public is left to the discretion of the individual First Nations as that data is proprietary in nature.

5.7.2 Resource issues

Development activities may threaten cultural heritage resource values. Resource development activities need to respect and protect the value of cultural heritage resources and traditional use sites. Cultural heritage resources and sites need to be managed and maintained to protect their physical integrity and setting.

The methodology for the current North Coast AOA is viewed as having deficiencies particularly linked to the level of First Nations involvement in its development. Some First Nations have indicated that the AOA should not be solely relied upon to determine whether archaeological sites are present and may be impacted by development in a particular area. A specific concern is that focussing on only the high and moderate potential areas as outlined in the North Coast AOA could preclude or result in impacts to archaeological sites in low potential areas. Low potential areas often include areas of high elevation, which could contain raised beach deposits that delineate ancient higher sea levels. These deposits may contain archaeological sites that significantly predate the known 5,000-year-old archaeological sites on the North Coast. Another issue with relying on the AOA is that its scale is so large that it really is not detailed enough to be used to predict the location on archaeological sites in any particular area. Also AOA's are generally based on archival research and a review of the locations of previously recorded archaeological sites and are not themselves ground-truthed (field surveyed). Using other sources of information (traditional use studies, local First Nation knowledge) to update the North Coast AOA is an important issue to be considered.

The issuance of Site Alteration Permits for development activities historically has not had the desired level of First Nations involvement.

The conservation of cultural resources must include not only the protection of specific sites of archaeological evidence, but also the healthy landscapes and abundant resources upon which First Nations culture is based. On-going opportunities to access and harvest traditional resources from these cultural landscapes is as important as the protection of specific sites and features with physical evidence of past and ongoing use.

The status of redrafting the *Heritage Conservation Act* and the need for First Nations involvement in the redraft is an important issue that goes beyond the LRMP but remains an important issue nonetheless.

Non-First Nations also have an important connection to land-based activities and desire to have a continued relationship and use of the land. Non-First Nations ability to take children camping, harvest berries or similarly enjoy and use the land for spiritual and cultural needs are important considerations that are addressed in this section and in many other sections of Chapter 5: General Management Direction, including Section 5.11: Non-Commercial Recreation.

5.7.3 Management direction for cultural heritage resources

First Nations Cultural Heritage Policies provide direction for the management and protection of all cultural heritage sites and resources within each First Nation's traditional territories. General requirements First Nations have made are detailed in protocols and agreements with stakeholders regarding cultural heritage.

Under provincial statute, the Archaeological and Registry Service Branch of the Ministry of Sustainable Resource Management⁴⁴ manages archaeological sites and information under the Heritage Conservation Act. Other agencies also have policies that direct involvement with regards to cultural heritage policies but the *Heritage Conservation Act* is paramount. Some cultural heritage resources automatically receive formal protection under the *Heritage Conservation Act*. These include:

- all pre-1846 artifacts, features, materials or other physical evidence of human habitation or use
- all aboriginal rock paintings or rock carvings (petroglyphs and pictographs)
- burial places with historical or archaeological value

The *Heritage Conservation Act* does provide formal protection for the above-described sites, but this protection can be waived, and often is, through issuance of a Site Alteration Permit by the Provincial Government. Site Alteration Permits are regularly issued for logging pre-1846 culturally modified trees⁴⁵.

Development that could threaten archaeological resources must be preceded by an archaeological reconnaissance and/or a detailed archaeological impact assessment. Whenever and wherever archaeological surveys (archaeological reconnaissance and AIAs) are conducted, the appropriate local First Nation(s) are contacted and typically offered involvement in the contract for conducting the surveys. Many First Nations have qualified/certified CMT crews that can, at the very least, conduct CMT reconnaissance surveys on their own, and can participate in AIAs (as First Nation field assistants). When cultural heritage resources, subject to legislation, are inadvertently encountered during development activities, there is an obligation to report the discovery to the appropriate First Nation(s) and the Archaeology Branch and to cease activities until the find can be evaluated and direction is received from the appropriate First Nation and the Archaeology Branch. Where traditional use sites are involved the developer is to contact and consult with the appropriate First Nation.

Appropriate consultation and accommodation with First Nations will ensure that aboriginal rights, title and interests in relation to cultural heritage resources are not unjustifiably infringed. In the case of cultural resources, this is an extremely important step in identifying, managing, and protecting cultural and heritage resources. Chapter 2: First Nations Planning and Participation provides additional relevant information.

Chapter 17 (Cultural Artifacts and Heritage), and Chapter 3, Sections 95-97 (Heritage Sites and Key Geographic Features) of the Nisga'a Final Agreement detail specific obligations that the Province and Canada must respect with regards to the cultural heritage resources of the Nisga'a Lisims Government.

⁴⁴ Registry and Resource Information Division

⁴⁵ Site Alteration Permits are issued most often for logging in CMT sites or for cutting CMTs, however, permits are also issued for alteration to other archaeological site types for various types of alterations.

Some of the clauses within Chapter 17 apply to areas outside of Nisga'a Lands; consequently, it should also be examined in relation to any planned development around cultural heritage resources.

Table 13 contains the general management direction for cultural heritage resources.

Table 13: General management direction for cultural heritage resources.

Management intent:			
<ul style="list-style-type: none"> To recognize, respect and protect heritage and cultural resources including archaeological sites, First Nations traditional use sites and cultural landscapes, and historic sites in the planning and management of all development activities. To provide for the identification, protection and sustainable management of cultural heritage resources in all areas including those planned for development. To provide opportunities for First Nations and other authorized parties to be involved in the identification and management (including protection, monitoring and enforcement) of cultural heritage resources. 			
Objective	Implementation indicator(s)	Targets	Management considerations
1. To ensure First Nations and non-First Nations sites are protected / managed and appropriate tools applied	<p>To have detailed inventories completed and updated</p> <p>Number of site alteration permits requested</p> <p># of archaeological reconnaissance surveys conducted during the development planning stages</p> <p># of AIAs conducted</p> <p># of historic sites and features identified in plan area</p>	<p>Inventories updated in conjunction with First Nations</p> <p>To track all alteration permit requests</p> <p>100% of developments have archaeological reconnaissance surveys conducted during the planning stages</p> <p>100% of areas identified as required by the reconnaissance survey have a detailed AIA conducted.</p> <p>x% of known historic sites that have an assessment of value prior to considering modification or removal.</p> <p><i>This item remains unresolved.</i></p> <p>Identify non-First Nations cultural heritage sites.</p>	<p>Other First Nations objectives are identified in Chapter 2: First Nations Planning and Participation.</p> <p>Consideration of buffers for archaeological sites needs to be reviewed in subsequent processes.</p> <p>Reference provincial and First Nations policy in all areas, including those targeted for development</p> <p>Users should note that while the <i>Heritage Conservation Act</i> has a date of 1846 for certain levels of site protection. First Nations Land Use Plans require that all site types (archaeological, CMT, TUS, historic) be treated similarly.</p> <p>Provide opportunities for appropriate local First Nations and non-First Nations to be involved as capacity allows.</p> <p>Prior to the issuance of any site alteration permits under the <i>HCA</i>, approval and or a permit from the appropriate First Nations</p>

Objective	Implementation indicator(s)	Targets	Management considerations
			<p>and other relevant agencies is required.</p> <p>For planned developments conduct an archaeological impact assessment (AIA) in all areas, as is required by provincial and First Nations guidelines.</p> <p>If impacts are identified through the AIA, take steps to mitigate and accommodate impacts as outlined in the <i>Heritage Conservation Act</i> or other statutes, provincial and First Nations policies, guidelines, and First Nations Land and Marine Use Plans.</p> <p>Encourage local, provincial and federal government in cooperation with and involvement of First Nations to carry out planning of historic resources (including pursuing formal heritage designations).</p> <p>Maintain the physical integrity of historic features as well as associated aesthetic values (i.e. visual quality, lack of debris, etc.), when undertaking any activities on or adjacent to known sites.</p> <p>Prepare a historic sites plan that details all historic sites and ensures that assessments are completed on areas suspected to have historic sites.</p>
<p>2. To ensure First Nations involvement in the assessments and</p>	<p>Number of site alteration permits issued with the appropriate local First Nations involvement</p>	<p>FNs are involved in the site alteration permit request process</p> <p>FNs are involved/participate in the</p>	<p>Developers should work with the appropriate First Nation(s) prior to submitting an application for a Site Alteration Permit during the development</p>

Objective	Implementation indicator(s)	Targets	Management considerations
<p>approvals process</p>	<p># of archaeological reconnaissance surveys conducted with the involvement/direct participation of the appropriate local First Nations</p> <p># of AIAs conducted with the involvement/direct participation of the appropriate local First Nations</p>	<p>reconnaissance survey process</p> <p>FNs area involved/participate in the of AIA process</p>	<p>planning stages.</p> <p>Use First Nations provided traditional territory mapping to determine appropriate First Nations to contact.</p> <p>For activities other than resource developments, determine the need for an AIA by conducting archaeological reconnaissance surveys with the participation of the appropriate local First Nations before undertaking activities with potential to disturb archaeological sites and CMTs.</p> <p>Having First Nations participation in proposed mitigation measures prior to issuance of a permit will expedite development and reduce conflict.</p> <p>FNs had indicated a desire for approval and management related to this resource. Approval has been removed and involvement left in this table. Further discussion on how to involve FNs is required as part of implementation.</p> <p>See also Chapter 2: First Nations Planning and Participation</p>
<p>3. To maintain the integrity of First Nations' traditional use resources, sites, and cultural</p>	<p>First Nations traditional use practices continue based on traditional territory boundaries.</p>	<p>Continues on a traditional territory basis. Other scales as appropriate. May be by tribe or by band. To be determined with local First Nations.</p>	<p>Alternative harvesting practices can help ensure traditional uses can be applied.</p> <p>Consult with and accommodate the appropriate First Nations before approving activities on land to determine whether</p>

Objective	Implementation indicator(s)	Targets	Management considerations
landscapes	Representation of traditional use based on inventory work by First Nations	Some presence of all types of traditional use across the territory	<p>there may be an impact on traditional use sites, resources, and cultural landscapes.</p> <p>Where impacts are identified, work cooperatively with the First Nations to avoid and/or minimize impacts.</p> <p>Having First Nations approval of proposed mitigation measures prior to issuance of a permit for development will expedite development and reduce conflict.</p> <p>First Nation Plans provide guidance on local traditional use sites</p> <p>See Chapter 2: First Nations Planning and Participation.</p>
4. To ensure First Nations involvement in the implementation and monitoring of Cultural Heritage Resources Management.	See Management Considerations Extent of protection for First Nations cultural landscapes as identified in First Nations land use plans through strategic level land use designations (i.e. specific designation of landscapes in which conservation of traditional resources, heritage features and traditional harvest opportunities takes precedence over other resource uses or developments).	See Management Considerations 100% of First Nations cultural landscapes protected through strategic land use designations and management directions <i>This target is not agreed..</i>	<p>Cultural landscapes include specific sites in which traditional camps are located or resource gathering occurs, as well as sites identified by oral history, family genealogies, myth and language that connect First Nations’ people to the land, rivers, lakes.</p> <p>Province and First Nations to work together to develop agreed upon guidelines for the management and conservation of cultural heritage resources.</p> <p>This process will consider and define an approval mechanism related to cultural heritage assessments and research, and of any site alterations that may be considered pursuant to those assessments.</p>

Objective	Implementation indicator(s)	Targets	Management considerations
	Extent of protection for First Nations cultural resources within operational plans (e.g. retention of CMTs, gathering areas, etc.)		<p>This may include implementing agreed upon processes already being considered such as The <i>First Nations CMT and Cultural Heritage Association</i>, Treaty positions or development of a specific protocol.</p> <p>Best management practices to be implemented in all cultural heritage management. This must include an acknowledgement of the intellectual property rights of First Nations and assurances that indigenous knowledge will not be exploited for commercial gain or any other purpose that does not have the explicit consent of First Nations.</p> <p>Cultural values are to be considered and accommodated prior to evaluating resource development options where impacts are identified.</p> <p>Further discussion required on date of 1846 and pre-contact for archaeological sites</p> <p>See also Chapter 2: First Nations Planning and Participation</p>
5. To develop First Nation capacity to be involved in archaeology	Trained First Nations individuals	Some in each community	May be a good target for Economic Measures and or First Nation Education funding.

5.8 Grizzly Bears

5.8.1 Resource Values

Grizzly bears (*Ursus arctos*) occur in relatively high densities along the coast of BC. They are found throughout most of the mainland in the North Coast. Grizzlies are blue-listed and classed as vulnerable in B.C. The species has disappeared from much of south and south-central BC and local populations are declining elsewhere in the province. Globally, *Ursus arctos* are declining over most of their range, with the exception of parts of Russia, Alaska, and the Yukon and Northwest Territories. Grizzly bears are of high cultural importance to First Nations. Land Use Plans prepared by First Nations make reference to cultural and spiritual values connected to grizzly bears. First Nations advise that they have and continue to utilize grizzly bears for food and cultural purposes.

Grizzly bears require habitat that provides for their nutritional, security, thermal, reproductive and “space” needs. To meet these varied needs, bears may use an array of habitats, ranging from subalpine to valley bottom, old growth to young forest, and wetlands to dry areas. With the exception of denning areas and avalanche chutes, the prime habitat of coastal grizzlies occurs predominantly below treeline and is largely concentrated in valley-bottom ecosystems often associated with important salmon streams.

Grizzly bear population units (GBPUs) stratify grizzly bears into relatively self-contained populations separated by natural and human-caused interruptions to regular movement (e.g., heights of land, large lakes, inlets, major highways, valley bottom agriculture, and settlement). Within the North Coast LRMP there are large portions of four GBPUs: (Kitlope-Fjordland, Stewart, Khutzeymateen and North Coast) and minor overlap with two GBPUs (Cranberry, and Bulkley Lakes). All GBPUs in the North Coast are currently classed as viable. A 2003 assessment estimated the minimum North Coast grizzly bear population at 227 bears⁴⁶.

Khutzeymateen Grizzly Bear Sanctuary was established in 1994 and is the only grizzly bear sanctuary in Canada. The park is managed under a Memorandum of Understanding between the Stewardship of the Gits’is Tribe of the Allied Tsimshian tribes of Lax Kw’alaams and the Province of British Columbia. The highest priority for management in the park is the conservation of grizzly bears. Hunting for grizzly bears is not permitted and hunting for other species is not permitted below 1000m.

5.8.2 Resource issues⁴⁷

Key components of coastal grizzly bear conservation outside of Protection Areas include:

- managing motorized vehicle and aircraft access to minimize bear displacement and mortality;
- maintaining habitat quality and quantity at multiple scales, including landscape level forage supply and critical habitats at the stand level;
- minimizing potential for bear displacement and habituation as a result of human activities such as wildlife viewing;
- regulation of hunting levels and providing benchmark areas where hunting of bears is not permitted; and
- minimizing potential for bear-human interaction by promoting the use of “bear awareness”.

⁴⁶ Hamilton, A.N. and H. L. Horn. 2003. Environmental Risk Assessment: Benchmark Scenario: Grizzly Bears. Prepared for the Government Technical Team of the North Coast Land and Resource Management Plan. Smithers, BC

⁴⁷ See also Footnote 23 on page 54 regarding the Conservation and Environment Sector’s views on hunting.

a. Access management:

The primary human influences on grizzly bears and their habitats are related to roads and road use. This includes increased risk of bear mortality due to human-bear interactions, as well as risk of displacement from preferred habitat due to human activity.

There are fewer issues related to mortality of bears due to roads in the North Coast, where most of the land base is accessed by water to isolated and unconnected road networks. However, the bear mortality risk is very high on the roads that do receive a large amount of public use. An environmental risk assessment of baseline management in the LRMP area⁴⁸ concluded that the main roads of concern in the North Coast regarding mortality risk to grizzly bears are those connected to highways such as the Lachmach Road near Prince Rupert, the road to Kitsault in the north of the plan area, and a potential road network into the Khyex watershed. The risk assessment also concluded that there is a locally moderate but overall low risk of population decline because of bear displacement due to roaded access and associated activities.

b. Maintenance of habitat supply

Because bears employ a variety of strategies to meet habitat requirements, management of grizzly habitat must be considered at multiple spatial and temporal scales.

Landscape level forage supply

Bear habitat is assessed at the landscape scale in terms of the seral stage distribution. While early and old seral forest provide useful habitat for bears, mid-seral forest is limiting due to its closed canopy, dense small trees, dark understory, and lack of forage. An environmental risk assessment concluded that pre-LRMP forestry management would result in significant decreases in the suitability of bear habitat in certain watersheds over time, primarily due to increases in amount of mid-seral forest⁴⁹.

Critical habitats

Critical habitats are areas having site-specific features that are considered essential for individual bear survival. These areas have high forage, bedding or proven denning value, and are particularly important in situations where these habitats are in short supply. Non-forested critical habitats include a core area and buffer of forested cover. Patches of forested critical habitat do not require an additional forested buffer. Overall, these relatively small areas of habitat, defined at the operational scale, contribute in a large way to the overall seasonal requirements of a bear, and thus of a sub-population or population.

c. Management of human activities, including bear viewing

Bears may be displaced from their preferred habitats or become habituated to human presence in areas of concentrated human activity. This includes sites with high levels of recreation and tourism use. The threshold of major displacement⁵⁰ is estimated at 5000 user days/km² in the active season⁵¹.

Bear viewing concentrates human activity in areas where bears congregate, increasing the potential for displacement and habituation and associated mortality risk (habituated bears are more vulnerable to being shot). Bear viewing is a popular activity in the North Coast, commercially and recreationally, and the level of viewing is likely to increase with increases in tourism activity, including cruise ships calling into

⁴⁸ *Ibid*

⁴⁹ *Ibid*

⁵⁰ “Major displacement” refers to displacement of all but a very few highly habituated bears.

⁵¹ *Ibid*

Prince Rupert⁵². An assessment, based on records of existing viewing sites in coastal North America, concluded that approximately 1500 user days/km² during the active season results in partial displacement of bears and a low to moderate risk of habituation⁵³.

The Province has limited jurisdiction over water-based bear viewing activities.

d. Grizzly Bear Management Areas

Grizzly Bear Management Areas (GBMAs) are areas of high habitat value that are established under the Grizzly Bear Conservation Strategy to further the objective of ensuring viable and healthy bear populations and to serve as benchmarks. Hunting of grizzly bears is not permitted in GBMAs, in order to provide benchmark population monitoring units that act as natural laboratories for scientific research and to track health of populations in comparison with areas zoned for integrated management. The typical configuration of GBMAs is a habitat-protected and kill-free core (e.g., a park) surrounded by a kill-free management unit.

5.8.3 Management direction for grizzly bears

Grizzly bears are “higher level plan species” in the Identified Wildlife Management Strategy under the *Forest and Range Practices Act* (FRPA). LRMP Tables are mandated to negotiate management direction for higher level plan species in consideration of other timber and non-timber resource objectives.

The following are proposed for management direction to address grizzly bear management in the North Coast LRMP:

- General Management Direction, which only applies within the “grizzly bear occupied area” (Map 6); and
- Area-Specific Management Direction: A Grizzly Bear Management Area in the north of the plan area, in which hunting of grizzly bears is not permitted but hunting for other wildlife species can occur (Map 7).

5.8.3.1 General management direction

The general management direction for grizzly bears has two components: a population management objective (Table 14 and Table 15) and land-based management objectives for access, habitat and tourism and recreation (Table 16).

Management intent:

- To maintain the abundance, distribution and genetic diversity of populations in each Grizzly Bear Population Unit;
- To maintain the quality and quantity of bear habitat across multiple scales;
- To minimize risk of bear displacement and mortality as a result of human activities, including roaded and air access;
- To minimize the potential for bear-human interaction; and
- To manage human activities, including bear viewing, so that bear habituation does not exceed low to moderate levels.

⁵² Ray, R. and P. Williams. 2003. *Potential Spatial and Management Implications of Cruise Ship Passenger Activity on the Development of the North Coast LRMP*. MSRM, Smithers, BC.

⁵³ Hamilton and Horn, 2003. *Op cit*.

Table 14: General management direction for grizzly bears – population management objective.

Population objective	Indicator(s)	Target(s)	Management considerations
1. To maintain the diversity and abundance of Grizzly Bears in the North Coast LRMP area.	1a. Estimated density of bears in each GBPU sub-population within the North Coast, based on inventory or estimates of habitat effectiveness ⁵⁴ .	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Ongoing inventory and monitoring is essential to ensure the achievement of population targets. Future population estimates may vary based on new research and information becoming available. If populations fall below current minimum estimates for the GBPU as a whole (see Table 15), managers should undertake coordinated management with planning areas outside of the North Coast LRMP.
	1b. Legal mortality levels (i.e., Limited Entry Hunt and guide outfitter allocation).	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	

Table 15: Targets for grizzly bear density in sub-populations of Grizzly Bear Population Units in the North Coast⁵⁵

Grizzly Bear Population Unit	Number of bears in each North Coast sub-population			Density of bears in each North Coast sub-population (# of bears/1000 km ²)	
	Current estimate: minimum	Mid-point of the current estimate	Current estimate: maximum	Current estimate of bear density based on mid-point of population estimate	Target grizzly bear density
1. Kitlope - Fjordland	12	20	27	26	31
2. Stewart	51	75	99	25	30
3. Khutzeymateen	75	109	143	35	40
4. North Coast	83	119	155	35	40
TOTAL	221	323	424	N/A	N/A

⁵⁴ *Habitat effectiveness*, considers the usability of the habitat by looking at factors beyond the biophysical capability and suitability of the land e.g., level of human use, degree of roadedness.

⁵⁵ Cranberry and Bulkley Lakes GBPU's only slightly overlap the LRMP area and, therefore, are not included in these tables.

Table 16: General management direction for grizzly bears – land-based management objectives.

Objectives, indicators and targets for grizzly bear only apply within the grizzly bear occupied area (Map 6).

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
Access			
<p>1. To minimize mortality risk to bears related to motorized road access at the watershed scale.</p>	<p>Indicator 1a. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Promote one-side development i.e., road construction on one side of a valley at a time.</p> <p>Consider closing access in sub-basins of important grizzly bear river valleys for 50 years after stands reach the free-to-grow stage (i.e., rotate forest activity among several sub-basins).</p> <p>Levels of public road access should be managed to be consistent with Objective 7 re carrying capacity for rec/tourism use in grizzly bear areas.</p> <p>Provide windfirm visual screening along roads to provide security consistent with transportation safety requirements..</p> <p>Strategies to minimize risk of bear mortality could include</p> <p>Graduated access i.e., increase difficulty of vehicle access as move further away from road origin.</p> <p>Road deactivation, including deliberate removal of bridges</p>

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
	1b. Number of connected road networks having unrestricted public access.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Strive to minimize the number of connected road networks through access planning Introduce controls to public access such as gating on any new roads constructed into the Khyex watershed. This could include windowed public access whereby the timing and amount of use is consistent with minimizing mortality risk to grizzly bears. Continue to apply the existing access controls restricting non-commercial and non-industrial motorized access into the Kitsault townsite.
2. To minimize road-induced displacement and mortality risk of bears within or adjacent to critical habitats.	Proximity of active roads to mapped critical habitat	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Strategies to minimize bear displacement could include: Visual screening of habitat from roads consistent with transportation safety requirements.
Habitat			
3. To maintain landscape level forage supply by BEC variant on a continual basis (spatially and temporally)	Amount of mid-seral forest by BEC variant.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	In landscapes important for grizzly bear habitat maintain < 50% in mid seral stage.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
<p>4. To maintain adequate forage within managed forest stands by maintaining productive understories</p>	<p>Spatial distribution of trees within regenerating stands.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>On rich and wetter sites⁵⁶, undertake cluster planting and manage to lower stocking standards.</p> <p>Consider uneven spacing of seedlings and saplings to maximize forage benefit.</p> <p>Other mitigation measures include pre-commercial thinning, group selection, selection harvesting, variable retention, pruning, and prescribed fire.</p> <p>Do not use aerial herbicide applications in highly effective grizzly habitat. Target only vegetation directly competing with crop trees.</p>
<p>5. To maintain the integrity of and linkage amongst critical grizzly bear habitats⁵⁷, including functional visual (security) and resting (bedding) cover.</p>	<p>Amount of alteration of ground-verified critical habitats.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>The size and configuration of the forested component of critical habitat are location dependent.</p> <p>Where necessary, undertake measures to protect the ecological function of effective critical habitat e.g.,</p> <ul style="list-style-type: none"> • natural drainage patterns; • Prevent disruption of the natural distribution of snow avalanching; • Prevent windthrow within critical habitats

⁵⁶ Rich and wetter sites are defined in the CWHws1 and CWHws2 as 06, 07, 08, 09, and 11 sites series; in the CWHvm1 as 05, 07, 08, 09, 10, and 14 sites series; in the CWHvm2 as the 05, 08, and 11 sites series; in the CWHwm as 03, 04, 05, 06, 07, 09 site series; and in the CWHvh2 as the 06, 07, 08, 09, 10, 13 site series.

⁵⁷ Critical patch habitats include beaches and beach margins, estuaries, rich non-forested fens, the edges of forested and non-forested bogs, herb-dominated patches on avalanche chutes with adjacent forest (particularly south-facing ones), herb-dominated subalpine parkland meadows, skunk cabbage swamps, floodplain ecosystems, and areas where bears fish for spawning salmon. Den cavities and surrounding stands are also considered critical. Non-forested critical habitats include a core area and buffer of forested cover. Forested critical habitats are not buffered.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
			<ul style="list-style-type: none"> • Maintain natural light levels Draft mapping of critical habitat exists: peer review and ground truthing of this mapping is required.
Tourism and recreation			
6. To minimize impacts to bears from <i>water- and air-based</i> commercial and non-commercial wildlife viewing.	6a. See Management Considerations	See Management Considerations	Promote high level of awareness about low impact water-based bear viewing among commercial and non-commercial users. The LRMP recommends Mouse Creek, within Khutzeymateen Inlet, as a preferred location for spring and fall water-based bear viewing ⁵⁸ . The Province has limited jurisdiction to regulate water-based bear viewing activities. However, a set of water-based bear viewing guidelines have been developed with which commercial viewing operators are encouraged to voluntarily comply.

⁵⁸ The Chatham Sound Coastal Plan is expected to identify the primary use of the Khutzeymateen Inlet as water-based bear viewing.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
	6b. Amount of air-based bear viewing.	No air-based bear viewing.	Aircraft should stay a minimum of 500m from bears (vertically and horizontally). Inform pilots of flying practices that minimize disturbance of bears.
7. To minimize impacts to bears from <i>land-based</i> commercial and non-commercial wildlife viewing.	7a. Number of tenures for random land-based bear viewing ⁵⁹	No tenures for random land-based bear viewing	
	7b. Location of fixed land-based bear viewing ⁶⁰ .	Fixed land-based bear viewing is permitted in the following landscape units: <i>(consistent with FN perspectives on land-based bear viewing in their traditional territories)</i> .	Fixed land-based bear viewing will be managed according to principles of ecosystem-based management. LWBC to work with MWLAP to assess and provide direction on appropriate management of fixed land-based bear viewing operations as applications for tenures come forward. This includes assessing the carrying capacity of bear viewing operations in relation to a proposed site and to the plan area as a whole. It also includes establishing limits on the number of visitors per day and the cumulative number of user days per active season. Carrying capacity will be re-visited as each new proposal is put forward.

⁵⁹ During random land-based bear viewing people move around on the land to enhance the opportunity to see bears. There is no predictability in place and time of human activity.

⁶⁰ During fixed land-based bear viewing, there is an established viewing area and access to and from the viewing area and the number and timing of visitations is managed to provide predictability for the bears, which has shown to be less influential on bear habituation and displacement.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
	7c. Compliance with bear viewing guidelines e.g., draft <i>Guidelines and Tenure Requirements for Land-based Bear Viewing in Coastal BC</i> ⁶¹	100% compliance by tenured bear viewing operations.	Undertake regular monitoring and enforcement of bear viewing guidelines among tenured operators. Enforce closure of untenured land-based bear viewing operations.
	7d. Opportunities for recreational hunting and fishing within tenured sites for fixed land-based bear viewing.	Opportunities maintained for recreational hunting and fishing.	Commercial bear viewing operators to consult with recreational hunters and fishers to identify strategies to address issues related to shared use of a viewing area. Regulation of carrying capacity within bear viewing areas needs to take into account the level of public recreational use. Bear viewing zones include a single specified site for viewing activities surrounded by an area of closure to grizzly bear hunting that equates to the home ranges of any adult female using the viewing area. These zones will be defined in the implementation process
8. To minimize displacement and habituation of bears due to commercial recreation activities, including land-based bear viewing	8a. # of land-based user days per km ² per active season (April 1 – October 31)	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	A buffer has been built into the target for user day density to accommodate First Nations activities in high use areas. When allocating # of user days consider use of these areas by First Nations as a priority. Ensure that user days are allocated in an equitable way between public and commercial recreation users (see Section 5.11: Non-Commercial Recreation).

⁶¹ These guidelines require a site-specific management plan that outlines number of user days, times of day, access routes, platform location, safety protocols.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
			<p>Consider instituting a “watchman” program to monitor bear viewing activity and associated impacts.</p> <p>Strategies to minimize bear displacement and habituation could include: seasonal windowing, group size control, spatial separation from preferred habitat, and careful food and waste management. Bear awareness education at high use areas is essential.</p> <p>Allocate user days per km² per active season (April 1 to October 31), with < 1500 user days per km² per active season as a precautionary benchmark, and an absolute maximum of < 5000 user days per km² per active season</p> <p>To exceed the <1500 user days per km², commercial operators and/or land managers must assess risks to bears from increased levels of use and implement strategies to minimize or mitigate bear displacement, habituation and associated increases in mortality risk.</p>
<p>9. To prevent bear mortality resulting from negative bear-human interactions e.g., bears conditioned to human attractants (garbage, pet food, offal, etc).</p>	<p>Number of reports of negative bear-human interactions.</p>	<p>Reduction in number of interactions over time</p>	<p>Where possible, initiate programs to educate members of the public and visitors re low impact food and garbage handling methods.</p> <p>Educate public regarding alternatives to shooting to reduce bear-human conflicts, e.g., waste management strategies, trail closure, etc.</p>

5.8.3.2 Area-Specific Management Direction

Table 17 contains the area-specific management direction for grizzly bears. One Grizzly Bear Management Area (GBMA) is recommended within the North Coast LRMP area: the Skeena-Nass GBMA that surrounds the Khutzeymateen Sanctuary. Hunting of grizzly bears has been closed within the Skeena-Nass GBMA area since 1984. Currently, the Nisga’a Final Agreement defines Nisga’a rights to harvest grizzly bears within the overall area. The area that overlaps the Nass Wildlife Area is being discussed separately with the Nisga’a Lisims Government through the Nass Wildlife Committee, in accordance with the Nisga’a Final Agreement.

Within the GBMA, hunting of grizzly bears is not permitted but hunting for other wildlife species can occur.⁶²

Table 17: Area-specific management direction for grizzly bears.

On-the-ground objective	Indicator(s)	Target	Management considerations
10. Maintain benchmark populations of grizzly bears within the Skeena-Nass Grizzly Bear Management Area (Map 7).	Bear hunting activity.	No hunting of grizzly bears within the GBMA.	Hunting of wildlife species other than grizzly bears is not restricted within the GBMA, other than the existing restrictions in the Khutzeymateen Bear Sanctuary.

⁶² See also Footnote 23 on page 54 regarding the Conservation and Environment Sector’s views on hunting.

5.9 Marbled Murrelets

5.9.1 Resource Values

Marbled murrelets (*Brachyramphus marmoratus*) occur only along the Pacific coast of BC, Alaska and the Pacific north-west United States. Currently the species is widely spread on the BC coast, and relatively abundant (presently estimated at approximately 55,000 - 78,000 individuals or roughly 47,000 – 66,000 breeding individuals, with population estimate studies ongoing.)⁶³. It is estimated that roughly 15-20% of the BC population nests within the North Coast LRMP area, although the North Coast is currently one of the least sampled parts of the coast.

This small seabird has the unusual habit of nesting inland (most within 30 km of the sea, very few beyond 50 km and none beyond 80 km)⁶⁴, usually on large mossy limbs of old-growth trees, while spending the remainder of its life at sea. Marbled murrelets do not breed until age two to five, and have at most one chick per year. This means that any losses to the adult population are not quickly recovered and any threats to adult survival could have long-lasting effects on the population.

The marbled murrelet is listed as “Threatened” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), red-listed by the BC Conservation Data Centre, and is an Identified Wildlife Management Strategy (IWMS) species. The species is listed as threatened based on evidence of habitat and population decline, rather than a dangerously low population size per se. The only detailed demographic study on marbled murrelets has been conducted in Desolation Sound. The results of this work indicate that the Desolation Sound population is stable but the variances in the data were large.

There has been a significant murrelet research effort over the last 10 years (summarized in Burger 2002)¹, and a coast-wide conservation strategy² has been developed by the national Marbled Murrelet Recovery Team⁶⁵ (MMRT), which includes representatives of federal and provincial government agencies, industry and non-governmental organizations including universities.

The short-term goal of the MMRT is to ensure that the rate of population decline coast-wide is less than 30% of the 2002 population over the period 2002 - 2032 (i.e. <30% over 3 generations), and less than 31% of the 2002 population in the Northern Mainland Coast Conservation Region which is largely coincident with the NC LRMP area⁶⁶. This overall rate of decline is based on the threshold set by

⁶³ Burger, A. E. 2002. *Conservation assessment of Marbled Murrelets in British Columbia: a review of the biology, populations, habitat associations, and conservations*. Technical Report Series No. 387. Canadian Wildlife Service, Pacific and Yukon Region, British Columbia.

⁶⁴ Canadian Marbled Murrelet Recovery Team. 2003. *Marbled Murrelet Conservation Assessment 2003, Part B: Marbled Murrelet Recovery Team Advisory Document on Conservation and Management*. Canadian Marbled Murrelet Recovery Team Working Document No. 1. pg 17. (This work of the MMRT has not yet been peer-reviewed.)

⁶⁵ The federal *Species at Risk Act (SARA)*, proclaimed in June 2003) requires that Recovery Strategies (and Action Plans) be prepared for nationally-listed species at risk. Recovery teams are established by the federal and/or provincial agencies responsible for the recovery of these species. As with all recovery teams, a key part of the work of the MMRT is to provide expert advice, in the form of a national Recovery Strategy, for the recovery of marbled murrelets under *SARA*. When the official Recovery Strategy is complete, implementation of this plan will be monitored and reported on. Measures taken within the LRMP will be considered to be implementing the Recovery Strategy. The Recovery Strategy (MMRT 2003. National recovery strategy for the Marbled Murrelet (*Brachyramphus marmoratus*). In prep.) is strongly based upon the Conservation Assessment Part B (see footnote 2, above). (The work of the marbled Murrelet Recovery Team has not been peer-reviewed.)

⁶⁶ The 30% coast-wide decline is a result of averaging rates of decline across coastal regions. The decline threshold for each region varies according to current population levels and habitat conditions.

COSEWIC to allow for down-listing a species from Threatened to Special Concern. The MMRT recognized that the provincial population of Marbled Murrelets in 2002 was already reduced from historical levels, and that the 2032 population would not be “recovered” to historical levels², but the Team has focused on the COSEWIC criteria needed for down-listing marbled murrelets from Threatened to Special Concern. If 30% of 2002 suitable nesting habitat coast-wide is lost by 2032, than the total habitat area lost by 2032 will likely be more than 50% of the historical area.

The long-term goals of the MMRT are: to maintain the provincial population at a level which is sufficient to de-list the species using COSEWIC criteria; to maintain the present range of the murrelet in BC; that marbled murrelets remain a relatively abundant bird in BC; that conservation goals are aimed at acceptable standards, not minimal standards; to manage marbled murrelets according to coast-wide criteria, but also regional criteria given differences among regions in ways marbled murrelets use inland habitats for nesting and availability of suitable nesting habitat; and to address uncertainties in management by applying an adaptive management approach. The MMRT recommends establishment of 3 core areas within each Conservation Region, whereby each core area would include at least 10% of the Conservation Region’s population².

5.9.2 Resource issues

One of the key conservation concerns for marbled murrelets is the maintenance of an adequate supply of nesting habitat. Consequently, the appropriate identification and management of these nesting habitats is vital to maintaining viable populations of murrelets throughout their natural range within the plan area. Factors that potentially affect marbled murrelet populations and their nesting habitat include:

- decreases in available mature and old (age-class 8+ or 140+ years) forest cover with sufficient nest-platform density, due to resource developments which can result in a decrease in available nesting habitat (mature and old growth forest with complex canopy structure and large trees with suitable nest platforms, i.e., limbs or deformities > 15 cm in diameter, including epiphyte cover. There are outstanding questions as to the required density of platform trees in each stand, however it is still possible to identify stand types with the potential to produce the needed habitat conditions at a strategic scale.
- possible evidence of increases in predation risk associated with edges produced by clear cuts and roads; and
- potential increases in predation risk associated with large scale human activities (e.g. garbage dumps, large campgrounds) providing food for corvids (crows, ravens and jays) and other nest predators.

Other significant and potentially limiting factors for marbled murrelet populations include human influences on survival at sea, and climate change.

Initial habitat modelling suggested that murrelet nesting habitat and potential marine foraging habitat are widely, but not equally, dispersed across the plan area. The model projections used for assessment for the modelling indicated that the likelihood of extinction was low. The risk to the population level or nesting carrying capacity was low or potentially moderate risk, which means declines of 20 - 40 % and potentially up to 60%, especially in the short-term, assuming that current management assumptions are accurately described and carried into the future. The risk to marbled murrelet habitat may decrease if additional Protection Areas are recommended in areas having suitable habitat.

5.9.3 Management direction for marbled murrelet nesting habitat

The intent of marbled murrelet nesting habitat management is to maintain healthy and viable populations of marbled murrelet throughout their natural range.

The following is proposed to address marbled murrelet nesting habitat in the North Coast LRMP:

- General Management Direction (Table 18), whereby objectives and targets are applied throughout the land base to maintain the general spatial distribution of habitat within the plan area.
- Establish geographically separated core areas (e.g., groupings of landscape units or existing parks and protected areas, of relatively high murrelet nesting habitat value) that are important breeding habitat within the region. Core areas will provide insurance against possible effects of forest fragmentation and catastrophic events. Core areas are expected to include large tracts of suitable nesting habitat that is confirmed to be suitable for nesting and mapped. The location of core areas should also consider other habitat features such as feeding congregations, which may change seasonally. The MMRT recommendations are to maintain at least three core areas, each of which support at least 10% of the North Coast regional population (i.e., a total of 30% of the regional population). Verification of habitat (using appropriate methods, e.g. air photo interpretation, helicopter ground truthing, banding and, radar inventories) is needed because of the patchiness of the habitat even in stands predicted to be suitable.

Table 18: General management direction for marbled murrelets.

Management intent:			
<ul style="list-style-type: none"> To maintain adequate nesting habitat to ensure viable populations of marbled murrelets across their present range within the plan area. To have marbled murrelets down-listed from Threatened to Special Concern under the federal <i>Species at Risk Act</i>. 			
On-the-ground objective	Indicator(s)	Target	Management considerations
1. Maintain the quantity and quality of marbled murrelet nesting habitat across the plan area.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p> <p>Where feasible, locate suitable nesting habitat to also meet objectives to biodiversity e.g., red-listed plant communities, wildlife tree patches, old growth retention areas, and riparian reserves.</p> <p>Patch size distribution should consider the potential for optimizing the functional integrity of murrelet habitat.</p> <p>Edge effects should be minimized for habitat effectiveness and to minimize predation by avoiding elongated or amoeboid shapes with large edges bordered by roads or recent clearcuts. Windfirm buffers should surround suitable habitat.</p>
2. Maintain quantity and quality of optimal nesting habitat in core areas.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p> <p>Weighting of nesting habitat quality in proposed marbled murrelet core zones is shown in Appendix 6, Table 32.</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p> <p>If harvesting is proposed in core areas, the onus is on the forest licensee to show how and where they are maintaining suitable murrelet habitat.</p> <p>To reduce impact to forestry, collaboration with coast-wide monitoring efforts should be devised to distinguish between nesting habitat declines and at-sea fluctuations.</p> <p>Develop assessment/ monitoring program to confirm murrelet suitability and use of core areas as development proceeds.</p>

Weighting of nesting habitat quality and proposed marbled murrelet core zones were still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8.

5.10 Mineral and Energy Resources

5.10.1 Resource Values

The geology of the North Coast LRMP consists of a number of belts trending southeast to northwest. Comprised of predominantly granite and metamorphic rocks, the belts formed from movements of crustal plates. When continental portions of the Pacific plate were too light to be forced completely under the North American plate, they melted and over the span of 30 million years rose to become the geologically-recent, granitic Coast Mountain range. The high heat and pressure associated with the creation of these new mountains metamorphosed the existing rocks they rose up through. In bands between the granites, these now metamorphosed rocks are equivalent to the sedimentary and volcanic rocks of south-eastern Alaska, far north-western British Columbia and the St. Elias mountains in the Yukon. The latter rocks host large mineral deposits and the equivalent rocks in the LRMP area may contain similar deposits.

The northern third of the LRMP area is underlain by entirely different rocks. Prior to the collision that created the Coast Mountains, volcanic islands had formed off the coast. The sediments and volcanic rocks comprising these islands are now the Bowser Lake and Hazelton Group rocks of north central BC. The Hazelton Group rocks are noted for their prolific mineralization both to the north of the plan area and within the Anyox, Georgie River, Alice Arm (K'ali Ts'im Gitso'ohl) and Kitsault River areas of the LRMP. The Bowser Lake Group rocks occur predominantly to the northeast of the LRMP area and are prospective for oil, gas and coal.

5.10.2 Resource Issues

There are three categories of mineral and energy resources: (a) metallic and industrial minerals, coal, (b) aggregate resources, (c) energy resources. These are described below, along with the public consultation, permitting and environmental review procedures for areas under provincial and federal jurisdiction. The Nisga'a Nation owns the mineral rights associated with certain properties (designated as 'Category A Lands' in the Nisga'a Final Agreement) that it owns within the plan area.

a. Metallic and industrial minerals, coal: base minerals (e.g. copper, lead, zinc), precious minerals (e.g. gold, silver), industrial minerals (e.g. opal, limestone), coal (e.g., anthracite):

Mineral exploration and development of the highly prospective North Coast LRMP area has continued for over 100 years. A wide range of metallic minerals: gold, silver, copper, lead, zinc and molybdenum, has been produced from mines located at Anyox, Alice Arm (K'ali Ts'im Gitso'ohl), up the Kitsault River and on Porcher Island. The non-metallic commodity, limestone, has been produced at several sites. The one current operation, at Anyox, ships silica rich slag that is used in sandblasting abrasives and asphalt shingles. Some of the historic operations caused significant environmental damage. New industry practices and environmental regulations have evolved since the era in which these operations were undertaken with the intent of avoiding similar negative impacts in current and future mining operations.

Mineral deposits and operations in the North Coast have been globally significant; for example, the pyritic copper smelter at Anyox (1911 to 1935) was one of the largest in the British Empire. The Stewart area, the geology of which extends into the North Coast, is one of the highest areas of known mineralization in the province.

There are 27 known deposits with metallic mineral resources and four with non-metallic mineral resources in the plan area. The potential for finding additional deposits is very high. Metal market prices, certainty of tenure, and access are strong factors influencing exploration and development. If these factors

improve and stabilize, exploration will likely increase. This, in turn, would increase the likelihood of discovery and subsequent development, with economic returns locally and provincially.

Currently, proposals for exploration and development of mineral resources that involve mechanical disturbance on the ground are required to go through permitting processes that assess impacts on other resources and stipulate requirements for undertaking the activity, as regulated under the *Mines Act* and the Health, Safety and Reclamation Code for Mines in British Columbia. Work programs may also require permits from other ministries and are regulated where applicable, under the *Forest Act*, *Forest and Range Practices Act*, *Forest Practices Code of British Columbia Act*, *Waste Management Act*, *Water Act*, *Environmental Assessment Act*, and other federal and provincial statutes or processes such as the *Canadian Environmental Assessment Act* and the BC Environmental Assessment Process. Initial phases of exploration on Crown land that involve mechanical disturbance of the ground require permitting and reclamation bonding through the Ministry of Energy and Mines, but do not require public consultation. However, some companies undertaking extensive exploration programs do provide information and seek public input.

When a project is proposed for development and falls within the regulated conditions for environmental review it enters the Environmental Assessment Process. During the environmental review process, proponents are required to notify the public of the proposed project, make detailed information on the project readily available, provide opportunities for public review and comment, and report on public input and how this input was considered. The level and type of consultation and public participation are determined on a project-by-project basis, to suit the characteristics of the project and the communities and interests that may be affected.

Access to mineral resources outside of protected areas is provided under Section 14 (5) of the *Mineral Tenure Act*, which legislates a two-zone system of land management in BC. The two-zone system ensures that mining and mineral exploration applications are considered, subject to all applicable laws, in all areas except parks, ecological reserves, protected heritage properties or areas where mining has been prohibited by an order under the *Environment and Land Use Act*. The statutory decision maker, for tenuring and permitting activities related to mineral exploration and development, uses LRMP direction as advice to ensure effective integration with other Crown land uses. LRMP direction may be considered when recommending modified mineral exploration or development procedures.

First Nations involvement in the permitting of mineral exploration and development is important so that First Nations can assess project impact to First Nations interests in their respective traditional territories. The LRMP endorses meaningful First Nations involvements in project permitting.

b. Aggregate resources (sand, gravel and quarried rock)

Aggregate (sand, gravel and quarried rock) is a commodity that has been and still is in short supply in the LRMP area due to a lack of naturally occurring aggregate resources. Due to this short supply, the demand for aggregates is likely to rise, as is exploration for onshore and offshore sources. Sources that are close to transportation infrastructure or to easily accessible tidewater are the most likely to be economically viable.

Aggregate exploration and development activities on Crown lands, are regulated by several Ministries. Tenures are issued under the *Land Act* and bonding is held by the Ministry of Energy and Mines. Aggregate mining operations are regulated by the Ministry of Energy and Mines. Large or environmentally sensitive projects are reviewed by the Environmental Assessment Process and will include First Nations and Local Government.

c. Energy resources (oil, gas, coalbed methane, geothermal and hydro-electric potential)

In the plan area, small hydro-electric and wind generation energy sources are currently being pursued to feed into the provincial energy grid. Geothermal potential also exists, although there is little activity. The mandate of the North Coast LRMP does not include resource development that occurs in the marine environment, however, development of potential offshore energy sources would require additional shore-based and inland infrastructure to feed the sources into the provincial energy system.

Oil and gas, coalbed methane, geothermal and hydro-electric projects are subject to intergovernmental review. Oil and gas, coalbed methane and geothermal projects are regulated by the *Petroleum and Natural Gas Act* and Regulations.

Energy projects are reviewed through the Environmental Assessment Process. The Reviewable Projects Regulation determines which projects enter environmental assessment, based on the size or nature of the project.

5.10.3 Management direction for mineral, aggregate and energy resources

The general management direction for mineral, aggregate and energy resources in Table 19 identifies broad objectives and targets related to promoting the development of mineral and energy resources. All management of resource activities within the LRMP is intended to be ecosystem-based (see Chapter 3: Ecosystem-based Management). Objectives and targets to maintain other resource values are located throughout Chapter 5: General Management Direction and will be considered during the permitting and approval processes for mineral and energy-related activities.

The LRMP recognizes existing aboriginal rights and title and acknowledges the asserted claim to the sovereign territories of First Nations in the North Coast (see Chapter 2: First Nations Planning and Participation). Consultation between First Nation governments and other levels of government, and between First Nations and industry, is required to ensure First Nations rights and title and interests are respected and accommodated during mineral, aggregate and energy resource activities. Consultation is also required to ensure First Nations people are provided opportunities to derive economic benefits from any development activity. Positive relationships between industry and First Nations increases business certainty.

In Table 19, the phrase ‘mineral, aggregate and energy activities’ refers to all aspects of a project life cycle, including exploration, development, operations, transmission, closure, decommissioning, reclamation, remediation and post-closure. Economic and social goals related to mineral and energy resources are outlined in Chapter 6: Community Stability and Economic Development.

Table 19: General management direction for mineral and energy resources.

Management intent:			
<ul style="list-style-type: none"> • Viable mineral, energy and aggregate sectors that provide a variety of economic opportunities. • Access to explore for, and develop, mineral and energy resources across the land base, outside of protected areas subject to applicable regulations. • Respect for other values and minimized impacts during all phases of exploration, development, operations, transmission, closure, decommissioning, reclamation, remediation and post-closure activities. • Ensure First Nations rights and titles are respected and accommodated. • Increased dialogue, partnerships and problem solving amongst industry, the public and governments, including First Nations. 			
Objective	Implementation indicator(s)	Targets	Management considerations
1. To allow access, for mineral, aggregate or energy activities, across the land base outside of Protection Areas that exclude mineral development.	All access applications will be considered, in all areas, except where mining has been precluded under provincial legislation.	All applications for access are to be considered and evaluated for permitting requirements, in a timely manner.	<p>Timeliness of permitting for projects which fulfill requirements is not to by-pass consideration of other resource values or appropriate consultation with First Nations and the public.</p> <p>In order to optimize the balance between social, cultural, local, environmental and First Nations values, statutory decision makers, when granting approvals and determining permitting conditions, are requested to consider the LRMP intent.</p>
2. Use principles of ecosystem based management, and local and traditional ecological knowledge, to respect other perspectives and minimize environmental impacts to land and freshwater-based values during all mineral, aggregate and energy activities.	All programs to demonstrate consideration and respect for other perspectives as well as land and fresh water-based values by, at a minimum, adherence to regulations.	No infractions of regulations.	<p>In the spirit of attaining a sustainable balance, environmental, social and economic values, need to be considered and respected when undertaking mineral, aggregate and energy activities.</p> <p>Consultation and seeking accommodation of the Interests of other affected parties is a necessary component of balancing values.</p> <p>In areas where tourism and mineral exploration and mining are allowed, companies should pursue early business-to-business consultations to</p>

Objective	Implementation indicator(s)	Targets	Management considerations
			coordinate activities and take reasonable actions to avoid unnecessary and unreasonable interruption to each others’ operations.
3. Ensure First Nations Rights and Title and interests are respected and accommodated by local, provincial and federal governments	First Nations should jointly review permit applications for projects within their traditional territories, along with local, provincial and/or federal authorities. Joint review will not affect the role of local government in the review process.	First Nation involvement in the permitting of all projects.	First Nation participation in permitting should be based on: <ul style="list-style-type: none"> • Respect by all parties for First Nation involvement and concerns; • Open and transparent process • Defined scope purpose and extent of any review; • Defined responsibilities for all participants based upon legal authority; • Criteria for decisions regarding an applications outlined at the onset; • Clear requirements for information;
4. Ensure that industry obligations related to consultation and accommodation of FN interests are met.	Level of Consultation and accommodation.	Legal obligations met. Positive relations developed	See Chapter 6: Community Stability and Economic Development. FN Land Use Plans are available to provide further information on FN desires and views. Working collaboratively with FNs early in the development planning stage can make discussions easier further down the line.
5. Ensure all present and future mineral, aggregate and energy development sites are reclaimed after closure, and encourage the provincial and federal governments to facilitate reclamation of all “orphaned” sites (i.e., no tenure holder)	The number of sites needing to be reclaimed.	No closed or orphaned sites remaining that require reclamation.	Provincial and federal government reclamation requirements include bonding to ensure reclamation occurs on present and future sites. Consider incentives for industry (e.g. financial, legal liability relief), to undertake reclamation of past activity, including ‘orphaned’ sites, when working in the vicinity.

5.11 Non-Commercial Recreation

5.11.1 Resource Values

With its scenic natural setting at the meeting of ocean and land, dramatic and varied coastal geography, and abundance of fish and wildlife, the North Coast offers a diverse array of high quality recreational opportunities. Most of the current use is concentrated within the vicinity of Prince Rupert and along Douglas Channel and the Skeena River.

The majority of existing recreation opportunities in the North Coast are associated with the ocean. The area has complex marine channels and numerous small islands, bays and peninsulas that provide an extensive network of relatively protected coastal waterways for marine-based activities such as marine fishing, kayaking, sailing, cruising, scuba diving, and wildlife viewing. There are also high quality freshwater fishing opportunities on numerous lakes, rivers and streams. Land-based activities include food gathering, hunting, hiking and winter activities such as snowmobiling and backcountry skiing at higher elevations. It should be acknowledged that these diverse recreation opportunities contribute to community well-being and attract people to live, work and visit in the plan area.

There are a number of small parks in the plan area that provide sites for non-commercial recreational use. These include Diana Lake Provincial Park, Prudhomme Lake Provincial Park, and Oliver Lake Municipal Park, all of which provide opportunities for fishing, boating and swimming. There are also three Marine Parks along Grenville Channel at Union Passage, Lowe Inlet and Klewnuggit Inlet, all of which provide protected anchorages for boaters.

5.11.2 Resource Issues⁶⁷

Non-commercial or public recreation is any outdoor or leisure activity where the participant does not pay a commercial operator for the privilege of partaking in the activity (as opposed to commercial recreation or tourism where a fee-for-service relationship exists).

Some of the main strategic planning issues related to non-commercial recreation are:

- Level of use within key recreation areas, including overlap with areas of tourism use;
- Impacts on aesthetic values important to recreation, including visual quality and noise;
- Potential impact of recreational activities on wildlife or ecosystems, e.g., over fishing of rockfish stocks or disturbing seabird colonies;
- Potential degradation of physical and cultural features as a result of recreational activities;
- Access to recreation areas;
- Ensure First Nation culture and heritage values and traditional harvesting opportunities and sites are protected; and
- Promote and increase recreation opportunities.

5.11.3 Management direction for non-commercial recreation

Table 20 contains the general management direction for non-commercial recreation. The establishment of visual management areas and Protection Areas will contribute to outdoor recreation values. Management direction for Non-commercial Recreation is strongly linked to management direction for Black/Kermode Bears (Section 5.5), Cultural Heritage Resources (Section 5.7), Grizzly Bears (Section 5.8), Tourism (Section 5.14), and Visual Quality (Section 5.16).

⁶⁷ See also Footnote 23 on page 54 regarding the Conservation and Environment Sector's views on hunting.

Management considerations regarding site specific areas such as access to back country skiing, snow machining, day-use sites, recreational boat launches, camping, trails, over night sites, etc. will need extra planning for the Highway 16 corridor and the tributaries of the corridor. Planning may be required to address the upkeep on non-commercial recreation facilities.

Table 20: General management direction for non-commercial recreation.

Management intent:

- To maintain opportunities for high quality outdoor recreation experiences across the range of activities in the North Coast, in consideration of other resource values.
- To the extent that there is formal management of recreation sites and opportunities by user groups and governments, include First Nations communities in planning and management.

Objective	Implementation indicator(s)	Targets	Management considerations
1. Manage land-based conditions to support a wide range of outdoor recreational activities and experiences	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Consider most appropriate way to measure this objective.
2. To maintain, enhance and protect the quality of recreational experiences across the plan area, including visual quality and an abundance of fish and wildlife.	Scenic quality is addressed under Section 5.16: Visual Quality. Fish are addressed in Section 5.4: Aquatic and Riparian Ecosystems. Wildlife is addressed under Sections 5.5, 5.8, 5.9, 5.12, and 5.15		

Objective	Implementation indicator(s)	Targets	Management considerations
<p>3. To establish and maintain appropriate levels of use within recreation areas according to their carrying capacity</p>	<p>Assessment of need and feasibility of establishing acceptable levels of use.</p> <p>Level of commercial recreation use is addressed in Section 5.14: Tourism.</p>	<p>Assessment as required on site specific basis</p>	<p>Carrying capacity within high use recreation/tourism areas has been identified as an important research and management issue.</p> <p>Develop carrying capacity limits which address, as a priority, First Nations interests (including traditional harvesting), recreation opportunities (including gathering activities, e.g., clam digging, berry picking etc.) and tourism opportunities.</p> <p>Levels of non-commercial recreation use outside of protected areas are assumed to be self-regulating, primarily because no regulatory mechanism exists.</p> <p>See also Objective 24 in Chapter 6: Community Stability and Economic Development</p>
<p>4. To promote and maintain opportunities for recreational access.</p>	<p>Availability of access on public roads and resource roads to recreation sites/ areas, where this is consistent with objectives for other resource values (e.g., wildlife) and safety concerns.</p>	<p>Site specific planning at a more detailed scale will assess the implications of access on recreation and other resource values.</p>	<p>Include First Nations and recreational user groups in access planning and management.</p> <p>Commercial recreation tenure holders cannot restrict non-commercial use of public access (e.g., public roads or safe anchorages outside of foreshore lease areas).</p> <p>Water access to land is important to recreation and the connection between marine and terrestrial areas is an integral part of recreation in the NC</p>

Objective	Implementation indicator(s)	Targets	Management considerations
<p>5. To preserve and protect the integrity of registered and unregistered First Nations cultural heritage sites and features, recognizing that areas adjacent to these sites may need to be managed to ensure the integrity at the site itself.</p>	<p>Impact to First Nations cultural heritage sites and features through recreational use. See also Section 5.7: Cultural Heritage Resources</p>	<p>No negative impact.</p>	<p>Promote awareness among recreational users about ways to protect sites and features of cultural importance to First Nations and local communities. Develop site-specific guidelines and recommended practices for non-commercial recreational users to ensure sensitive FN sites and features are properly managed. Consult user groups in the development of these guidelines. Ensure that guidelines are readily available and clearly communicated to all operators, users, and user groups. First Nations to develop site-specific guidelines.</p>
<p>6. To preserve and protect the integrity of registered and unregistered non-First Nations cultural heritage sites.</p>	<p>Impact to non-First Nations cultural heritage sites through recreational use. See also Section 5.7: Cultural Heritage Resources</p>	<p>No negative impact.</p>	
<p>7. To ensure recreation use does not degrade the integrity of ecological values and physical features in areas used for recreational activities.</p>	<p>Impact to ecosystem values and physical features through recreational use.</p>	<p>No negative impact. Improvement of sites for recreational use that meets this target is allowed, e.g., campsites, latrines, and trails.</p>	<p>Promote awareness among recreational users about actions (e.g., low impact camping, garbage handling, bear awareness) to minimize impacts to physical features and ecosystems. Some areas should be managed as non-motorized access to protect ecological and cultural values. Promote Observe, Record, and Report procedures for communicating incidents⁶⁸.</p>

⁶⁸ The Observe, Record, Report program seeks assistance from the public in reporting any violation of federal or provincial environmental laws and regulations. The program is jointly sponsored by Ministry of Water, Land and Air Protection (Provincial), the Department of Fisheries and Oceans (Canada), and the BC Wildlife Federation. Information on this program can be viewed at <http://wlapwww.gov.bc.ca/eeeb/enfhome/orr.htm>.

Objective	Implementation indicator(s)	Targets	Management considerations
<p>8. To promote recreation opportunities and access along Highway 16 corridor</p>	<p>Availability of facilities and access to recreation sites, e.g. day-use sites, recreation boat launches, over night sites, camping spots, trails, backcountry skiing availability, snow machining area access, etc.</p>	<p>Maintain existing and increase new opportunities with respect to day-use sites, rec boat launches over night sites, camping, trails, back country skiing, snow machining, etc</p>	<p>Include recreation user groups as well as First Nations in access planning and management.</p> <p>Management consideration around site-specific areas such as access to back country skiing and snow machine areas may need extra planning.</p> <p>Note: See also Section 5.16: Visual Quality.</p> <p>Cross-referenced to Section 5.3: Access Management.</p>

5.12 Northern Goshawk

5.12.1 Resource Values

The northern goshawk (*Accipiter gentiles*) is a medium-sized forest raptor with wide distribution in the northern hemisphere. Subspecies *laingi* on Haida Gwaii is endangered and red-listed by the BC Conservation Data Centre, whereas subspecies *atricapillus*, the subspecies found throughout the forested interior of British Columbia, is not. It is unclear which subspecies lives in the North Coast LRMP area as no specimens have been collected, or DNA tests conducted. Preliminary work from the Alaskan Panhandle, however, indicates that the goshawks found on the coastal mainland are at least as similar to the Queen Charlotte goshawks (subspecies *laingii*) as to the interior subspecies. This is why the coastal birds are listed as *laingii* in the Identified Wildlife Management Strategy.

Goshawks have not been studied intensively in the North Coast, but studies in adjacent areas of north western B.C., and in the Alaskan panhandle, provide substantial information relevant to the plan area. This information is summarized in the associated technical report⁶⁹, and a synopsis is presented here.

Northern Goshawks live at low densities, with breeding pairs using exclusive territories (with centres 4 to 10 km apart, depending on prey availability) at least from mid-February to late August. They are believed to be resident in the plan area year-round, but may be less territorial in winter. Goshawk breeding territories consist of a nest area, a post-fledging area, and a much larger foraging area. Foraging areas may range from 2,400 to 10,000 ha depending on the availability of prey. Goshawks show remarkable fidelity to nest areas, within which a number of nests are maintained and used off and on for many years.

This raptor is uniquely adapted to forest habitats, with short wings, long tail and powerful pursuit ability. It takes a wide variety of prey, from passerines to small mammals, but most often forages in forest where open understorey increases the vulnerability of prey. Its reproductive ability is thought to be limited by availability of suitable nest sites (almost always in mature to old growth forest with closed canopy and a relatively open understorey), and availability of prey in mature forest settings, or coastal forest edges, where pursuit is possible. Regional population density is also limited by social behaviour with territories spaced fairly evenly through the landscape.

The coastal sub-species of Northern Goshawk is an Identified Wildlife Management Species (IWMS) in British Columbia, recognizing its real vulnerability to loss of mature and old-growth forest for nesting and foraging.

5.12.2 Resource Issues

The primary management issues threatening conservation of northern goshawks in the North Coast plan area are:

- Harvesting of mature and old-growth stands with known nests or good potential for nesting. Key structural attributes consistently selected by northern goshawk for nesting habitat include mature/old-growth stand structure and relatively closed canopies with corresponding open understories⁷⁰.
- Harvesting of sufficient mature or old-growth forest in the breeding territory to the extent that the foraging potential (availability of prey) decreases below a threshold necessary to raise young and

⁶⁹ Mahon, T., D. Morgan and F. Doyle. 2003. Northern Goshawk Habitat in the North Coast Forest District: Foraging Area and Nest Area Habitat Suitability Models. Unpublished report for the NC LRMP Government Technical Team, Smithers, B.C.

⁷⁰ Kennedy 1988; Hayward and Escano 1989; Reynolds et al. 1992 as cited in Mahon et al 2003.

sustain the breeding pair. Northern Goshawks forage in mature/old-growth areas with high canopy closure and a clear understory. This habitat allows goshawks to move freely under the canopy, allows good visibility of prey, and also provides ample perches from which to hunt⁷¹.

At present only one nest site has been discovered in the North Coast at Alder Creek. Based on studies of the characteristics of known nest sites in the CWH zone in Northwestern BC, goshawk biologists expect that the distribution of highly suitable nesting habitat in the plan areas will be largely coincident with the valley bottoms⁷². With such a distribution, the number of occupied territories is expected to be relatively low. Goshawks will be at low densities, so each nest area and associated foraging habitat is particularly valuable for population persistence.

5.12.3 Management direction for northern goshawk habitat

The intent of goshawk habitat management is to maintain healthy and viable population of goshawks throughout their natural range.

The following is proposed to address northern goshawk habitat in the North Coast LRMP:

- General Management Direction, whereby objectives and targets are applied throughout the land base to maintain the general spatial distribution of habitat within the plan area (Table 21).

⁷¹ Squires and Reynolds 1997, as cited in Mahon et al 2003.

⁷² Mahon, T., D. Morgan and F. Doyle 2003, Northern Goshawk Habitat in the North Coast Forest District: Foraging Area and Nest Area Habitat Suitability Models. Unpublished report for the NC LRMP Government Technical Team, Smithers, BC.

Table 21: General management direction for northern goshawks.

Management intent:			
<ul style="list-style-type: none"> To maintain adequate nesting and foraging habitat to ensure a viable population of northern goshawks across their present range within the plan area. 			
On-the-ground objective	Indicator(s)	Target	Management considerations
1. To maintain all known goshawk nest areas and post-fledging areas with sufficient mature and old growth forest to allow continued occupancy and successful reproduction.	Spatial extent (ha) of forest harvesting within the identified nest and post-fledging areas.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	<p>Tactical and operational planning should include assessment of potential development for existence of goshawk nests (at least during layout of boundaries for felling trees), and definition of nest areas, prior to tree felling.</p> <p>Planning to include nest areas in old growth management areas and retention areas.</p> <p>Lay out harvesting so that mature and old forest in nest areas is contiguous with other foraging habitat.</p>
2. To maintain sufficient foraging habitat adjacent to nest areas to allow continued occupation of the breeding territory.	Proportion of the foraging area, bordering the nest area, in mature and old growth structural stages.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	<p>A reasonable quantitative target is not available at present because the threshold of mature and old forest for territory occupancy has not been measured. The IWMS foraging target is 2400 ha.</p> <p>Marine shorelines and lakehores: Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p> <p>Seek advice of a qualified professional in planning for mature and old growth structural stand retention and development in the foraging area. (e.g., inclusion of riparian reserves and wildlife tree patches). This should include consideration of the best</p>

On-the-ground objective	Indicator(s)	Target	Management considerations
			<p>layout of mature structural retention within cutovers, and silvicultural treatments in regenerating stands, so as to promote prey abundance: Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8.</p> <p>Given fiscal constraints, seek funding from a number of alternative sources (e.g., birding organizations).</p>
<p>3. Undertake research and inventory to (a) identify the distribution, and habitat needs, of goshawks including identification of nest areas and post-fledging areas, and (b) characterize the taxonomy of the subspecies found in the plan area.</p>	<p>See Management Considerations</p>	<p>See Management Considerations</p> <p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Implement an inventory program led by a qualified biologist to locate new nests, assess diet, and monitor post-fledging area use.</p> <p>Research to assess breeding territory size, hunting habitat requirements and prey availability in different forest types.</p> <p>Consider using field crews from local educational institutions for monitoring and inventory.</p>

5.13 Timber

5.13.1 Resource values

Forestry has historically been one of the primary economic activities on the North Coast. Most of the plan area is within the North Coast Timber Supply Area (TSA), although a small portion of Tree Farm Licence 25 is included near the southern boundary of the plan area and Princess Royal Island is excluded.

First Nations advise that, currently and prior to contact, First Nations have utilized timber resources for tens of thousands of years for traditional and cultural purposes including, but not limited to, an industrial economy and a traditional economy.

Merchantable species in the North Coast include western hemlock, western redcedar, amabilis fir, Sitka spruce, and yellow-cedar. Most of the land base available for harvest, or timber harvesting land base (THLB) occurs at lower elevations of the coastal hypermaritime forests and stretches partially up to areas below the mountain hemlock forests at higher elevations. Only 16% of the forested land base (7% of the total land base) is considered available and economically viable for timber harvesting. The steep topography, rugged terrain and strict policy requirements for terrain, wildlife and riparian inventories contribute to the high operating cost of accessing timber. However, practices such as heli-logging have expanded the opportunities for timber harvesting beyond what is traditionally considered the THLB. Areas with ground-based harvesting with road networks are almost always accessed from the ocean, with the exception of the Skeena River corridor. Timber harvesting on the North Coast predominantly uses two harvest methods:

- 1) Conventional, ground-based harvesting and
- 2) Non-conventional helicopter harvesting.

A-Frame logging and foreshore harvesting methods are no longer common practice, but are applied in certain circumstances, if appropriate. Although clear-cut harvesting still occurs, alternate harvesting methods such as Variable Retention (VR) have increased significantly over the past five years. In order to better understand ecosystem recovery and response to these alternate harvesting approaches, research projects have been initiated to compare variable retention to clear-cut harvesting methods. Since each ecosystem will respond differently to harvesting practices due to a wide range of variables, one harvesting practice should not be applied equally across the plan area. Additional research is needed on alternate harvesting practices. As such, the timber section places great emphasis on research and adaptive management in order to achieve the most appropriate harvesting practices consistent with Ecosystem Based Management (EBM) principles.

5.13.2 Resource Issues

Some of the main strategic planning issues related to the timber resource are:

- Availability of an economically sustainable, equitable, diverse and operationally feasible timber supply in the short- and long-term in a manner consistent with EBM.
- Potential impact of forestry activities on other resource values (e.g., wildlife, biodiversity, cultural heritage resources, and visual quality).
- Developed areas with unacceptable re-growth of trees (not satisfactorily re-stocked) require rehabilitation and restoration programs to address other resource values that have been adversely impacted.
- There are no strategic planning issues related to forest health, although forest health considerations may be important on a site-specific basis.

5.13.3 Management direction for timber

This section focuses on maintaining the value of the timber resource. Other sections provide direction to forestry activities in order to maintain other resource values e.g., wildlife, biodiversity, and visual quality. Forest management is currently governed under the *Forest Practices Code of British Columbia Act* (FPC) and the *Forest and Range Practices Act* (FRPA). Operational plans under either Act must be consistent with government objectives which include those in approved higher-level plans based on the recommendations provided by the LRMP Table. Operational plans are subject to public review and First Nations consultation and accommodation processes.

General management direction for timber is to primarily flow from the adoption and application of the relevant provisions of the EBM Handbook as described in Sections 3.2.3 to 3.2.8. Table 22 contains additional direction based on Table discussion. It is provided to further assist/inform resource management and planning in the manner described in Sections 3.2.8 and is subject to both adaptive management and the principles and mechanisms for making EBM operational as generally described in Chapter 3: Ecosystem-Based Management and Chapter 7: Implementation, Monitoring and Amendment. The following is additional direction that should always be read in conjunction with the relevant provisions of the EBM Handbook as adopted and applied in Sections 3.2.3 to 3.2.8.

Table 22: General management direction for timber.

Management intent:			
<ul style="list-style-type: none"> To maintain the structural and functional integrity of ecosystems within managed forests at all spatial scales. To work with First Nations, members of the public, and interest groups to ensure sustainable, ecosystem-based management of the forest resource. 			

Objective	Implementation indicator	Targets	Management considerations
1. Maximize a sustainable annual harvest and operationally feasible timber supply over the short and long term in a manner consistent with EBM and TEK.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	To be determined at the end of the LRMP process.	<p># of sustainable businesses in the forestry sector</p> <p>Area of THLB outside of Protection Areas, and Biodiversity Areas and Special Forest Management Areas.</p> <p>Maximize local employment opportunities, where applicable (See Chapter 6: Community Stability and Economic Development).</p> <p>First Nations, gov't and licencees to work together cooperatively to develop and sustain viable business opportunities.</p> <p>Area-based target for timber supply – to be determined at the end of the LRMP process, after agreement-in-principle is reached on other recommendations.</p> <p>The target will exclude Protection Areas. It will also net out sub-regional, landscape, or stand-level reserves and be consistent with overall LRMP objectives and targets.</p>
2. Assess access to timber supply across the land base outside of Protection Areas, Biodiversity Areas and Special Forest Management Areas.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	In areas where tourism and forestry are allowed, companies should pursue early business-to-business consultations to coordinate activities and take reasonable actions to avoid unnecessary and unreasonable interruption to each others' operations.

Objective	Implementation indicator	Targets	Management considerations
3. Monitor science-based forestry practices resulting from EBM allowing for continuous improvement and adaptive management.	Number of local research programs which are directly related to ecological and economic drivers of EBM.	Number of research programs needed to address targets of EBM.	Government and others to establish implementation and monitoring post-LRMP, supporting research initiatives and adaptive management directly related to EBM.
4. Restore developed watersheds which were harvested pre-1987 and are currently not satisfactorily restocked.	Number of watershed restoration programs implemented on the North Coast.	Restoration of all watersheds harvested pre-1987 to satisfactorily restocked.	Implement government and other funding sources for restoration.
5. Establish area based community forest tenures that are representative of the land base and will contribute to the long term economic and human well being of the North Coast people through, but not exclusive to: a. Forest harvesting b. Manufacturing c. Value-added product development initiatives	# and success of community forest tenures		Province to work with local communities and First Nations of the North Coast to identify tenure opportunities.
6. Ensure that forestry activities at all scales are done in a cost-effective manner	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	

Objective	Implementation indicator	Targets	Management considerations
7. Ensure full cost of implementing EBM is adequately covered by the stumpage system or through other funding mechanisms.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	

5.14 Tourism

5.14.1 Resource Values

Tourism is a well-established and growing industry in the North Coast. Key strengths of tourism development in the area include striking natural scenery, an abundance of fish and wildlife, a diverse range of opportunities for water and land-based outdoor recreation, and a vibrant local First Nations culture.

Much of the North Coast plan area is relatively remote and only accessible by water. Most high use areas are concentrated around Prince Rupert, Douglas Channel, Khutzeymateen, Principe, Laredo, Whale, Ursula, Verney Passage and Grenville Channel. Sport fishing, both marine and freshwater, is one of the most prevalent tourism activities on the North Coast. Numerous fishing lodges and boat charter operations provide opportunities for visitors from around the world to experience exceptional angling opportunities. Nature-based tourism (e.g. wildlife viewing, kayaking) has grown considerably throughout the 1990s and early 2000s, and this trend is expected to continue. The attractive wilderness attributes of the North Coast, including remote and rugged scenery and an abundance of wildlife, gives nature-based tourism a significant potential for growth.

A rich culture and numerous cultural heritage sites provide opportunities for culturally-based tourism for local First Nations. First Nations involvement in tourism is poised to expand as economic development activities with local communities, and partnerships with outside tourism interests, become realized. Conflicts exist between tourism development and operations and First Nation interests and uses, particularly traditional harvesting. Planning and development must ensure First Nation interests and uses are protected and accommodated.

5.14.2 Resource Issues⁷³

Some of the main strategic planning issues related to the tourism resource are:

- potential impact of tourism activities on attributes of importance to tourism and other resources (e.g., flora, fauna, physical features, aesthetic values, commercial fishing, culture & heritage values and First Nation traditional harvesting opportunities);
- potential impact of other resource development activities on attributes of importance to tourism (e.g., abundance of fish and wildlife, aesthetic values, quality of the natural environment);
- ability to provide opportunities for local communities and First Nations in sustainable development of the tourism industry; and
- reducing conflict between First Nation and local community interests and uses and tourism development.

5.14.3 Management Direction for Tourism

Protocol agreements between First Nations and tourism operators are necessary to ensure First Nations' interests are addressed. Protocol agreements should address the following issues – lease certainty, terms and conditions of occupation and operation, length of lease, security of tenure, and compensation, among other things.

Table 23 contains the general management direction for tourism. It addresses: (a) the impact of other resource uses on the tourism resource, and (b) the impact of tourism use on other resource uses and

⁷³ See also Footnote 23 on page 54 regarding the Conservation and Environment Sector's views on hunting.

values. Implementation of visual management (See Section 5.16) and Protection Areas (Section 4.1.2) will help to maintain tourism values.

The following is proposed to address management for tourism attributes in the North Coast LRMP:

- General Management Direction, whereby objectives and targets are applied throughout the land base to maintain tourism attributes and associated tourism opportunities within the plan area; and
- Tourism areas (shown in Table 24 and Map 8) identify areas where there is significant use or opportunities for tourism development and use. Development of other resources may occur in these zones, however a focus for management would be on features and attributes important to tourism. Tourism areas are also intended as a tool for Land and Water BC, Inc. in processing Crown land tenure applications. Development of other resources will be managed in a cooperative way with tourism interests. Developments within the NC plan area will consider features and attributes important to tourism. Tourism areas do not direct management for visual resources.

Management direction for Tourism is strongly linked to management direction for Black/Kermode Bears (Section 5.5), Grizzly Bears (Section 5.8), Non-Commercial Recreation (Section 5.11), and Visual Quality (Section 5.16).

Table 23: General management direction for tourism.

- Management intent:**
- To maintain the quality of attributes of importance to tourism, including flora, fauna, visual quality, physical and cultural features;
 - To optimize the economic benefits from tourism to the economy of North Coast communities;
 - To maintain opportunities for the range of sustainable tourism activities, including access to those activities, while preserving the quality of the wilderness experience;
 - To manage the level and type of use within high value tourism areas in order to maintain the quality of the tourism experience and minimize conflicts with other resource users and
 - To ensure tourism development is consistent with First Nations Land Use plans and accommodates First Nations values, uses and interests.

Objective	Implementation indicator(s)	Target	Management considerations
1. Manage land-base to support a wide range of culturally and ecologically appropriate tourism	<p>Level of use and type of experience within Tourism Areas as identified in Table 24 and Map 8.</p> <p>Land use designations and associated regulations and guidelines in place to ensure a spectrum of tourism/recreation opportunities, including the support of First Nations-led cultural and nature-based tourism.</p>	Consistency with Table 24.	<p>Tenuring agencies, First Nation Governments and organizations will work together to develop a mechanism to implement targets identified in Table 24.</p> <p>Resource developers need to consult with tenured tourism operators and operators under application for tenure in advance of design and development of industrial initiatives which may result in impacts to tourism operators. Tourism operators need to discuss any proposed tourism development with other tenure holders in the area of the development so that development can be planned with full knowledge of what other tenure holders are or may be undertaking.</p> <p>Web accessible maps showing all land tenures and contact information needs to be created. (See Sections 5.10: Mineral and Energy and 5.13: Timber and Chapter 6: Community Stability and Economic Development).</p> <p>Some forms of recreation and tourism are compatible with First Nations’ traditional use activities (e.g. low intensity nature and cultural tourism). Others are not. Land base allocations need to reflect this.</p>

Objective	Implementation indicator(s)	Target	Management considerations
<p>2. To maintain, enhance and protect the quality of experience in tourism areas.</p>	<p>Scenic quality is addressed in Section 5.16: Visual Quality.</p> <p>Fish are addressed in Section 5.4: Aquatic and Riparian</p> <p>Wildlife is addressed in Sections 5.5, 5.8, 5.9, 5.12, 5.15.</p>		<p>Appropriate tools to help manage tourism use include codes of conduct; education of tourism operators about appropriate activities for their clients; and waste management guidelines.</p>
<p>3. To establish and maintain appropriate levels of tourism use</p>	<p>Assessment of need and feasibility of establishing acceptable levels of use, including carrying capacities.</p>	<p>Assessment as required on site specific basis</p>	<p>Establish guidelines for carrying capacities, including ecological carrying capacity, in identified tourism areas. Guidelines need to:</p> <ul style="list-style-type: none"> • address First Nations’ rights, interests, and values, including First Nation traditional harvesting as a priority use; • vary by planning unit and can only be done in consultation with First Nations; and • ensure equity between non-commercial recreation use and tourism. <p>Adjust permitted levels of use, where necessary, to prevent impacts on fish, wildlife or other values.</p> <p>For acceptable levels of use in bear viewing areas and areas of potential conflict with bears, see Section 5.8: Grizzly Bears.</p> <p>See also section 5.11: Non-commercial Recreation.</p> <p>Tourism recognizes multiple uses of the land and water on which it operates, such as commercial fishing, forestry, mining, First Nations and recreation. Conflicts that develop between tourism operators and other users that cannot be resolved between the parties will be referred to other non-interested parties in order to give assistance in resolution of the conflict.</p>

Objective	Implementation indicator(s)	Target	Management considerations
4. To maintain and enhance opportunities for access to tourism areas	Availability of access to tourism sites/ areas, where this is consistent with objectives for other resource values	Site specific planning at a more detailed scale will assess the implications of access on tourism and other resource values.	See Section 5.3 Access Management
5. To preserve the integrity of First Nations cultural heritage sites in areas used for tourism activities.	<p>Impact to cultural heritage sites in areas of tourism use.</p> <p>Land use designations, regulations, guidelines or protocols are in place to maintain the integrity of sensitive cultural and heritage and traditional harvesting sites and resources.</p> <p>Protection of identified areas that are sensitive to intensive tourism development.</p>	<p>No negative impact.</p> <p>First Nations have Protocol Agreements in place with commercial recreation and tourism operators. This Target is not agreed to.</p> <p>Areas sensitive to intensive tourism development have appropriate protection in place, to ensure that the resources and sites are not degraded. Methods of protection to be addressed during implementation and monitoring.</p>	<p>Tourism use of First Nations cultural heritage sites to be determined by First Nations.</p> <p>Tourism operators to negotiate protocol agreements with First Nations re: cultural heritage resource management and ensuring that cultural heritage information remains confidential and is limited to information required to operate with no impact.</p> <p>Need to identify areas where certain kinds of tourism development (e.g. intensive) will not be permitted to protect First Nations traditional harvesting sites and values.</p> <p>Promote understanding among tourism operators so there is no mis-interpretation or mis-representation of cultural heritage sites.</p> <p>Recognize the need for education and improving communication about cultural heritage sites.</p> <p>Use First Nation plans in planning.</p> <p>All parties to monitor sites/areas and report status to First Nations and appropriate agencies.</p> <p>See also Chapter 2: First Nations Planning and Participation, Section 5.7: Cultural Heritage Resources, and individual First Nations Land Use Plans.</p>
6. To preserve the integrity of non-First Nations cultural heritage sites.	Impact to non-First Nations cultural heritage sites in areas of tourism use.	No negative impact.	See also Section 5.7. Cultural Heritage Resources.

Objective	Implementation indicator(s)	Target	Management considerations
7. To preserve the integrity of ecological values and physical features (e.g. hot springs or beaches) in areas used for tourism activities in identified tenured areas.	Impact from tourism use to associated ecosystems.	No negative impact from tourism use. Appropriate development permitted to enhance site value and prevent site degradation (e.g. outhouses, boardwalks or campsites).	Tourism operators to take actions to minimize impacts to physical features and ecosystems (e.g., low impact camping, garbage handling, bear awareness) and to pass this information on to their clients. All parties to monitor sites/areas and report status to First Nations and appropriate agencies.
8. To maintain opportunities for commercial bear viewing while minimizing impacts on black and grizzly bears.	-	-	Objectives and targets for bear viewing are outlined in Section 5.5: Black / Kermode Bears and Section 5.8: Grizzly Bears.
9. Flow of economic benefits to First Nations	Protocols between industry and First Nations, and governments and First Nations, addressing employment, training, capacity building, tenure and revenue sharing	Revenues streams to First Nations established. Tenure awards to First Nations. Increased employment of First Nations in tourism sector to reflect per capita representation in NC population provided employees have the necessary skills or opportunity to acquire them.	Consultation with First Nations. Negotiate protocols.

5.14.4 Tourism Areas

Table 24: Guidelines for Tourism Development in Tourism Areas.

See also Map 8

Area	Tourism attributes	Level of use / Anticipated types of experiences	Examples of appropriate land-based development and activities
1. Skeena River Corridor	<ul style="list-style-type: none"> • Outstanding natural viewsapes uninterrupted by development • Ease of access to semi-wilderness • High quality guided angling • Bird watching • Post contact heritage sites (Port Essington) • Linkages to marine-based tourism products: river tours 	<ul style="list-style-type: none"> • Concentrate tourism facilities in a limited number of locations • High level of expected use (Transit corridor, extensive boat-based activity) • Integrated use area 	<p>Existing</p> <ul style="list-style-type: none"> • Photography • Scenic area viewing/Picnic sites • Boat launches <p>Potential</p> <ul style="list-style-type: none"> • Interpretive centers • Hut-to Hut hiking • Expanded commercial recreation on the southern banks of the Skeena River • First Nations cultural heritage
1a. Khtada Lake	<ul style="list-style-type: none"> • Fish resources • Scenic wilderness and high quality natural settings 	<ul style="list-style-type: none"> • Low level of use • Wilderness experience • Remote fishing experiences 	<p>Existing</p> <ul style="list-style-type: none"> • Guided angling • Non-commercial recreation use <p>Potential</p> <ul style="list-style-type: none"> • Sport fishing lodge • Camping sites for kayak and canoe tours
2a. Ecstall River: Lower	<ul style="list-style-type: none"> • Scenic viewsapes • High fish, wildlife and bio-diversity values 	<ul style="list-style-type: none"> • Semi-remote • Moderate level of expected use • Motorized tourism activities permitted 	<p>Existing</p> <ul style="list-style-type: none"> • Sport fishing • Jet boating <p>Potential</p> <ul style="list-style-type: none"> • Hut-to hut, camping, hiking, canoe and kayak activity

Area	Tourism attributes	Level of use / Anticipated types of experiences	Examples of appropriate land-based development and activities
			<ul style="list-style-type: none"> • Wildlife interpretive tours, educational experiences, scenic viewing • Safety facility • “Green” building designs where facilities are required
2b. Ecstall River: Upper (Kitkiata /Quaal)	<ul style="list-style-type: none"> • Scenic viewsapes • High fish, wildlife and bio-diversity values 	<ul style="list-style-type: none"> • Low level of expected use • Motorized tourism activities excluded • Remote wilderness experience 	<ul style="list-style-type: none"> • Low impact activity • Guided tourism activities • “Green” building designs where facilities are required
3. Prince Rupert Outer Area	<ul style="list-style-type: none"> • Unique geographical setting • Beaches (e.g. Salt Lakes area, Lucy Island) • Retail opportunities • Culturally oriented products (e.g. First Nations museums) • Existing resident use of recreation areas • Linkages to marine-based tourism products: kayaking, diving, marine wildlife viewing, guided angling, boat tours 	<ul style="list-style-type: none"> • High level of expected use • Integrated use areas 	<p>Existing</p> <ul style="list-style-type: none"> • Hiking and walking • Staging area for tourism operations (e.g. fishing, boat tours, wildlife viewing and kayaking) <p>Potential</p> <ul style="list-style-type: none"> • All types of tourism development considered appropriate • Mountain biking • Expansion of existing activities
4. Dundas / Melville Islands	<ul style="list-style-type: none"> • Archipelago geography • Scenic resources • Wildlife viewing opportunities 	<ul style="list-style-type: none"> • Manage during different seasons for FN traditional resource uses • Manage tourism use during 	<ul style="list-style-type: none"> • Camping • Hiking • Beach-combing

Area	Tourism attributes	Level of use / Anticipated types of experiences	Examples of appropriate land-based development and activities
	<ul style="list-style-type: none"> opportunities • Linkages to marine-based tourism products: kayaking, guided angling, diving, marine wildlife viewing 	<ul style="list-style-type: none"> peak season to maintain low levels of use • Semi-remote experiences • Multiple use area. 	<ul style="list-style-type: none"> • First Nations cultural tours
<p>5. Khutzeymateen and Ksi X’anmas (Kwinamass) Inlets</p>	<ul style="list-style-type: none"> • Wildlife resources (e.g. grizzly bear, whales) • Scenic resources • Old volcano (Crow Lagoon) • Adjacent to Khutzeymateen Grizzly Bear Sanctuary • Linkages to marine-based tourism products: kayaking, boat tours, anchorages 	<ul style="list-style-type: none"> • Low level of expected use in the off- season • High levels of expected use at wildlife viewing stations, and during the salmon spawning season • Semi-remote wilderness • Manage commercial recreation user days during peak wildlife viewing seasons (see Section 5.8: Grizzly Bears). • Maintain access for recreational use 	<p>Existing</p> <ul style="list-style-type: none"> • Wildlife viewing • First Nations activity • Commercial Recreation tenures <p>Potential</p> <ul style="list-style-type: none"> • Wildlife viewing at viewing stations or in designated areas (see Section 5.8: Grizzly Bears).
<p>6. Porcher / Stevens Island Group</p>	<ul style="list-style-type: none"> • Scenic viewsapes • Accessible beach areas • Linkages to marine-based tourism products: kayaking, guided angling, boat tours 	<ul style="list-style-type: none"> • Manage during different seasons for FN traditional resource uses • Moderate to high expected levels of use • Semi-remote experiences complemented by high quality viewsapes 	<p>Existing</p> <ul style="list-style-type: none"> • Camping, hiking, wildlife viewing <p>Potential</p> <ul style="list-style-type: none"> • Lodge development • Trail development • Environmental education tours • Cultural and traditional tourism • Bed and breakfast development

Area	Tourism attributes	Level of use / Anticipated types of experiences	Examples of appropriate land-based development and activities
<p>7. Estevan Group and Campania Island</p>	<ul style="list-style-type: none"> • Scenic resources • Protected anchorages • Trails • Hotsprings • Beaches • Wildlife viewing • Sandy beaches • Linkages to marine-based tourism products: kayaking, guided angling, boat tours, marine wildlife viewing 	<ul style="list-style-type: none"> • Remote experiences • Managed levels of commercial use where required to maintain the quality of experiences • Moderate level of expected use • Primary transit route and scenic zone for marine based activity (e.g. cruise ships, angling, sailing) 	<p>Existing</p> <ul style="list-style-type: none"> • Protected anchorages • Trail use • Remote inland fishing • Wildlife and bird viewing • Guided angling (inland and marine) • Beach combing <p>Potential</p> <ul style="list-style-type: none"> • Hut-to-hut hiking • Remote fly fishing • Excursion base-station development • Environmental, historical, First Nations cultural, educational tours • Trail development • Natural design principles used for facility development where such activities are required
<p>8. Marine Tourism Corridor Corridor includes:</p> <ul style="list-style-type: none"> • Squally and Whale Channels • Lewis, Cridge and Union Passages • Pitt Island, Hinton, Farrant • Douglas Channel 	<ul style="list-style-type: none"> • Scenic values • Protected anchorages • Trails • Hotsprings • Beaches • Historic sites • Wilderness and fishing lodges • Wildlife viewing 	<ul style="list-style-type: none"> • Low to moderate expected levels of use on land • Remote experiences • Maintenance of high quality experiences for both recreation and commercial tourism users at key sites (e.g. Bishop Bay Hotsprings) 	<p>Existing</p> <ul style="list-style-type: none"> • Trail use • Remote inland fishing • Hotsprings • Wildlife and bird viewing • Marine and fly fishing • Beach combing • Historic site visitation

Area	Tourism attributes	Level of use / Anticipated types of experiences	Examples of appropriate land-based development and activities
	<ul style="list-style-type: none"> Sandy beaches Linkages to marine-based tourism products and facilities: guided angling, cruise ship routes, marine wildlife viewing, kayaking, boat tours, and anchorages 		<p>Potential</p> <ul style="list-style-type: none"> Service infra-structure (e.g. lodges) Hut-to-hut, heli- and ridge hiking Hotsprings Remote fly fishing Managed base station development Excursion base-station development Environmental, historical, First Nations cultural, educational tours Natural design principles used for facility development where such activities are required
9. Skeena River Mouth	<ul style="list-style-type: none"> Scenic marine travel corridor Pristine settings Linkages to marine-based tourism products: angling, diving, marine wildlife viewing, kayaking 	<ul style="list-style-type: none"> High level of expected use 	<p>Existing</p> <ul style="list-style-type: none"> Bird watching Camping <p>Potential</p> <ul style="list-style-type: none"> Lodge development
10. Work Channel	<ul style="list-style-type: none"> Scenic resources (e.g. Quotoon inlet) Fish resources and angling opportunities Roaded and non-roaded access to high value wilderness recreation sites Wildlife viewing: bears and whales 	<ul style="list-style-type: none"> High at wildlife viewing stations (See Section 5.8: Grizzly Bears for bear viewing in Quotoon Inlet) and on access routes Moderate level of expected use overall for the region Higher expected levels of activity during peak periods (i.e. salmon spawning) 	<p>Existing</p> <ul style="list-style-type: none"> Hiking <p>Potential</p> <ul style="list-style-type: none"> Lodge development Wildlife viewing at designated site in the Quotoon Bear Viewing Zone (see Section 5.8: Grizzly Bears). First Nations cultural tours

Area	Tourism attributes	Level of use / Anticipated types of experiences	Examples of appropriate land-based development and activities
	Linkages to marine-based tourism products: kayaking, anchorages, guided angling, marine wildlife viewing	season). <ul style="list-style-type: none"> • Low in off-peak season • Maintained road access for recreational use 	
11. Inside Passage / Grenville Channel	<ul style="list-style-type: none"> • High value scenic resources • Campsites • Lowe Inlet and Klewnugget Inlet Marine Parks • Linkages to cruise ships, guided angling, marine wildlife viewing, kayaking, boating, anchorages 	<ul style="list-style-type: none"> • Low current usage of the land base for tourism activities • High levels of marine tourism traffic expected • High quality natural setting 	Existing <ul style="list-style-type: none"> • Kayaking and camping Potential <ul style="list-style-type: none"> • Hut-to-hut hiking • Expanded kayaking and camping • Natural designs for facility where required
12. Observatory Inlet / Alice Arm (K’alii Ts’im Gitso’oohl)	<ul style="list-style-type: none"> • Scenic viewsapes • Historic sites (e.g. Anyox, Alice Arm, Kitsault) • Access to sub-alpine zones • Linkages to water-based tourism activities and facilities: marine cruising, guided angling, sailing, canoeing, and kayaking, anchorages 	<ul style="list-style-type: none"> • Low expected level of use on land • Moderate expected use of the marine environment 	Existing <ul style="list-style-type: none"> • Historic sites Potential <ul style="list-style-type: none"> • Wildlife viewing • Mountain biking • Hunting • Campsites
13. Portland (K’alii Xk’alaan) Inlet / Canal	<ul style="list-style-type: none"> • Scenic viewsapes • Historic sites (e.g. Georgie River, Swamp Point, Maple Bay) • Linkages to water-based use areas: marine routes, angling, 		

Area	Tourism attributes	Level of use / Anticipated types of experiences	Examples of appropriate land-based development and activities
	sailing, kayaking and canoeing <ul style="list-style-type: none"> Proximity to potential U.S. tourism market 		
14. Principe Channel (Outside Passage)	<ul style="list-style-type: none"> Scenic viewscapes Historic sites (e.g. Calamity Bay) Linkages to potential marine-based tourism products: marine cruising, guided angling, sailing, canoeing, kayaking, anchorages and marine wildlife viewing 	<ul style="list-style-type: none"> Low to moderate expected levels of use Remote experiences High expectation of visual quality Integrated use zone 	Existing <ul style="list-style-type: none"> Fishing lodge developments Potential <ul style="list-style-type: none"> Hiking Wildlife viewing Canoeing and kayaking through lake and inlet systems Remote experience (e.g. fly-fishing)
15. Aristazabal Island	<ul style="list-style-type: none"> Scenic resources Kayaking activity Accessible beaches Wildlife resources Linkages to marine based tourism products: cruising, marine wildlife viewing, kayaking, guided angling, boat tours 	<ul style="list-style-type: none"> Low to moderate expected level of use Remote experience complemented by high quality scenic resources Potential First Nations tour focus area 	Existing <ul style="list-style-type: none"> Limited Potential <ul style="list-style-type: none"> Kayaking and wildlife tours from base station First Nations cultural tours

5.15 Ungulates

5.15.1 Resource Values⁷⁴

There are three species of ungulate in the North Coast: mountain goat (*Oreamnos americanus*), coastal black-tailed deer (*Odocoileus hemionus sitkensis*) and moose (*Alces alces andersoni*), a recent immigrant. First Nations advise that they have continued to utilize ungulates for cultural and Section 35 purposes for thousands of years.

The deep, wet snow pack in coastal mountains creates challenging conditions for ungulates and the quality of winter range habitat is a primary determinant of winter survival. During periodic extreme winters, these winter ranges provide the critical forage, thermal and security cover, and snow interception necessary to maintain existing ungulate populations. Consequently, appropriate management of ungulate winter range is vital to maintaining viable ungulate populations throughout the plan area. In general, winter range for all three of these ungulate species can be adversely impacted by the loss of forest cover, and by the increased disturbance associated with human access and resource development.

5.15.2 General management approach for ungulates

The goal of ungulate winter range management is to maintain healthy and viable populations of mountain goat, moose, and coastal black-tail deer throughout their natural, or in the case of the moose, their potential range. This goal will be achieved by managing food, shelter, and security attributes within ungulate winter ranges. The objectives and targets established in the General Management Direction (GMD) are intended to be applied throughout the plan area. These objectives and targets include the following principles for all applicable ungulate species.

- Management of Ungulate Winter Range will be detailed in operational planning documents.
- All winter range identification, verification, impact assessment, and development of mitigation strategies must be completed by a qualified professional using a repeatable and documented methodology.

The Ministry of Water Land and Air Protection (WLAP) is currently gathering existing inventory information as part of the initial stages of formally designating ungulate winter range (UWR). Once data collation and preparation of Management Objectives are completed, areas identified will be legally established as UWR under the *Forest and Range Practices Act*. After completion of UWR designation, new winter range areas could be added if new scientific or biological data becomes available.

5.15.3 Management direction for mountain goats

Mountain goats occur only in North America. The highest density populations are found in British Columbia where they are associated with mountainous topography. Within the North Coast Forest District, mountain goats occur primarily in the Kitimat Range, Meziadin Mountain, Kimsquit Mountains, and Southern Boundary Range ecosections, although small populations are also found in the eastern Hecate Lowlands. Mountain goat habitats and populations are considered particularly vulnerable to development activities and are therefore of management concern.

The coastal goat ecotype is considered particularly dependent on coniferous forests for winter survival due to the persistent wet snowpack. In winter, predator avoidance and deep snow in mountainous environments confine mountain goats to closed-canopy forests in close proximity to cliffs and steep bluffs. In general, consistent features of optimal mountain goat winter range include steep forested south

⁷⁴ See also Footnote 23 on page 54 regarding the Conservation and Environment Sector's views on hunting.

and south-westerly facing slopes within 400 meters of escape terrain. Mountain goat winter range (MGWR) is defined as the functional and structural attributes of stands and habitats within and adjacent to escape terrain currently or historically utilized by mountain goats for which operational timing windows will be defined by WLAP.

There are two key factors that potentially affect mountain goat populations and their winter range.

1. Decreases in available forest cover due to resource developments, may result in habitat alienation, habitat fragmentation, and loss of snow interception. This reduces forage availability and increases the energy required to move through deeper snow.
2. Increased human access through roads, industrial developments, recreational trails, and helicopter access, which can increase the amount of disturbance to wintering goats and, subsequently result in increased mortality from physiological stress, hunting, increased predator access, and poaching.

Impacts associated with road access were assessed in an Environmental Risk Assessment (ERA)⁷⁵ for mountain goats, but industrial and recreational helicopter activity and associated behavioural and habitat alienation impacts could not be considered due to modelling limitations. Recent studies suggest that helicopter over-flights can have significant impacts on the health of wintering mountain goats. Based on these studies, the Ministry of Water, Land and Air Protection has developed a set of interim guidelines to ensure that mountain goats are not impacted by helicopters or fixed wing flights associated with commercial recreation.⁷⁶

Table 25 contains the general management direction for mountain goats. The following objectives, indicators and targets provide direction for:

- maintaining the structural and functional quality of mountain goat habitat; and
- minimizing disruption and potential mortality to goats resulting from access (air and road).

A preliminary map of mountain goat winter range has been developed (Map 9). This mapping will need to be confirmed on-the-ground for the GMD for mountain goats to be implemented.

⁷⁵ Pollard, B.T. 2003. Environmental Risk Assessment: Base Case, Mountain Goats. Produced for the Government Technical Team of the North Coast Land and Resource Management Plan, Smithers, BC.

⁷⁶ Interim Wildlife Guidelines for Commercial Backcountry Recreation in British Columbia, Biodiversity Branch, Ministry of Water Air and Land Protection, May 2002. (<http://wlapwww.gov.bc.ca/wld/comrec/crecintro.html>). This report has not yet been peer-reviewed.

Table 25: General management direction for mountain goats.

Management intent:			
<ul style="list-style-type: none"> To manage and sustain mountain goat winter range and optimum populations at a low risk by maintaining habitat quality, quantity and distribution throughout their natural range. 			
Objective	Implementation indicator(s)	Target(s)	Management considerations
1. Maintain functional and structural attributes of goat winter ranges, wherever they occur in the landscape.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Developers will show due diligence in the identification and assessment of goat winter range in and adjacent to proposed developments before potential disturbances occur. See Appendix 8: Mountain Goat Winter Range Identification, Assessment and Planning Protocol.
2. Maintain habitat suitability of winter range by minimizing disturbance and mortality risk to mountain goats.	Indicator 2a. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Land and Water BC and WALP to establish need for on-board GPS data loggers as a requirement for tenure
	Indicator 2b. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Developers will inform contracted pilots of goat winter range to ensure compliance with the LRMP objectives and targets.
	Indicator 2c. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8

Objective	Implementation indicator(s)	Target(s)	Management considerations
	Indicator 2d. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	
	Indicator 2e. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	
	Indicator 2f. Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Deactivation of temporary infrastructures should follow immediately on completion of operations and should restrict motorized access. Access limiting measures should be employed until full deactivation is completed. Re-sloping is the preferred method of deactivating constructed roads.
3. Minimize road-induced displacement and mortality risk within or adjacent to UWR	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	

5.15.4 Management direction for moose and blacktailed deer

Table 26 contains the general management direction for moose and blacktailed deer.

5.15.4.1 Moose

Moose are relative newcomers to the northern British Columbia coast, expanding their range westward from the Liard Plateau in the last two hundred and fifty years. First Nations advise that they have used moose for cultural and Section 35 purposes. The sub-species *andersoni* was first identified in the Coast Mountains in the 1930's and can now be found in most coastal drainages including the Nass, Skeena, Kitimat, Kitlope and Bella Coola Rivers. Globally, moose are assigned a conservation ranking of G5 and are not considered at risk or vulnerable to species extirpation.⁷⁷ In BC, the species is of management concern and considered locally abundant, widespread, and secure. Immigration into the North Coast LRMP area is expected to continue although western extremes of the LRMP area appear incapable of supporting large populations.⁷⁸ Moose are associated with riparian habitats, especially floodplains and large wetlands.

Winter range areas provide important forage and thermal cover during adverse weather conditions. On the coast this often includes productive shrub areas such as low elevation wetlands, floodplains or rich forests adjacent to closed canopy mature and old forests. Moose winter habitat can be classified as either primary or secondary based on available forage communities. Primary, or permanent habitats are shrub communities that are perpetuated within a landscape due to continuous and predictable disturbances e.g., riparian areas and avalanche tracks. Secondary, or transient habitats are those that exist temporarily within a landscape due to non-continuous and random disturbances, such as very deep snows, fire, or wind throw. Secondary habitats can be further subdivided into type A, which does not contain self-perpetuating forage communities, and type B, which does contain self-perpetuating communities of reduced value due to other limiting factors such as snow depth, poor connectivity or small areas.⁷⁹

The results of a species assessment for moose in the North Coast plan area indicate that the risk for adverse impacts to moose from resource development activities is classed as Very Low and in some cases populations are actually likely to increase. Winter forage supply is the primary limiting factor in moose winter range and continuous development will increase the suitability of most of the richer sites. The greatest potential for habitat associated impacts occurs when development removes most or all of the forest cover in the identified secondary type B habitats where deep snow can have the most significant impacts on local populations.

5.15.4.2 Black-Tailed Deer

Sitka black-tailed deer are found throughout the North Coast plan area but are rarely observed and are unlikely to occur on smaller, isolated rock islands (S. Liepins, pers comm). The highest concentrations are thought to occur in the Hecate Lowlands (B. Pollard, pers comm.). Black-tailed deer use a broad range of habitat types. In winter they are primarily found at lower elevations (<400m) in mature and old growth forest with stand attributes that provide winter forage cover for security, thermal regulation and interception of snow and rain. Predator avoidance also may be a key driver in the selection of winter

⁷⁷ NatureServe Explorer: An online encyclopedia of life [web application]. 2001. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: <http://www.natureserve.org/explorer>.

⁷⁸ Pollard, B.T. 2003. Environmental Assessment: Base Case, Moose. Produced for the Government Technical Team of the North Coast Land and Resource Management Plan, Smithers, BC.

⁷⁹ Pollard, B.T. 2002. Moose winter range mapping for the North Coast Forest District. Produced for the Government Technical Team of the North Coast Land and Resource Management Plan, Smithers, BC.

range. Numerous high activity winter use areas observed during field review have included topographic features such as ridgelines and flat benches on steeper slopes (S. Liepins, pers comm).

Sitka deer are abundant throughout most of the plan area and are a species of management concern. First Nations advise that they have used blacktailed deer for cultural and Section 35 purposes. Variations in topography and climatic influences provide a variety of winter conditions across the North Coast, and this influences the vulnerability of deer to habitat alteration. Preliminary assessments of deer winter range in the Hecate Lowlands suggest that the risk is low to deer as a result of development activity (B. Pollard, pers comm.) although no formal species assessment has been completed due to the lack of inventory information. Because snow in the Hecate Lowlands seldom accumulates to depth and seldom persists for more than a few weeks, the concept of critical winter range is not thought to apply to this ecoregion. This is primarily due to an increase in average annual snow loading, which increases requirements for snow interception. Deer critical winter range within more mountainous terrain of the plan area has not been well studied and locations of winter range areas are almost entirely unknown at this time.

Table 26: General management direction for moose and blacktailed deer.

Management intent:			
<ul style="list-style-type: none"> To maintain healthy and viable populations of moose and deer at a low risk throughout their potential range. 			
Objective	Implementation indicator(s)	Targets	Management considerations
1. To minimize the potential for moose and deer mortality in roaded areas in identified winter range ⁸⁰ .	1a. Incidence in winter range from publicly accessible roads.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Restrict access to roaded areas within in winter range within winter months to minimize the potential for moose and deer mortality. Maintain visual cover or roadside screening between roads and winter range and travel corridors along riparian areas consistent with transportation safety requirements. Minimize the right-of-way and physically gate or deactivate all access in or adjacent to moose and deer winter range immediately on completion of function. Deactivation should restrict all motorized ground access.
	1b. Incidence of vehicular collisions on all roads in winter range.	Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8	Restrict access to roaded areas within in winter range within winter months to minimize the potential for moose and deer mortality. On all roads, minimize risk factors associated with increased collision rates including speed, road density, and snow bank barriers. Plough “run-away lanes” or large turn outs on winter roads through winter range. Increase signage and reduced speed zones in areas with high wintering densities.
2. To maintain the quality of snow interception and browse production within identified moose and deer winter range.	See Management Considerations	See Management Considerations	Maintain a balance of snow interception and browse production in winter ranges specific to the type of winter range, degree of colonization, and location within the LRMP area. This balance should be documented in operational planning documents. Monitor herbicide application in areas containing

⁸⁰ Identified winter range refers to existing winter range inventory or other area as updated when new information becomes available.

Objective	Implementation indicator(s)	Targets	Management considerations
			<p>critical wildlife habitat features. Target crop trees only. Winter range management can include any or all of the following approaches including:</p> <ul style="list-style-type: none"> • Variable sized and shaped harvest areas, • Wildlife tree patches, • Riparian and wetland buffers, • Connectivity retention, • Limited or targeted brushing, • Variable density spacing, and, • Sivicultural practices to enhance browse .

5.16 Visual Management

5.16.1 Resource values

The dramatic topography, scenic waterways, islands, fjords and glaciers in the North Coast make the area renowned for its scenic beauty. The scenery is valued by local residents and is a primary resource for recreation and tourism interests from within BC and around the world. The Inside Passage and Highway 16 Corridor have particularly high visual values (large numbers of viewers, high expectations for visual quality). The overall emphasis of visual management areas is to maintain the quality of viewsapes to support recreation, tourism, cultural (First Nation) and quality of life values. Table 27 describes some of the areas within the North Coast having scenic resource values. It is intended to provide background information about these areas; it is not meant to define all of the values nor to give any management priority to these areas.

Table 27: Description of scenic resource values.

Area	Reason for Visual Management
Skeena River Corridor	Corridor is a scenic transport route (Highway 16, railway, river) important to tourism / recreation. Important related features are Khyex River, McNeil River road, Lachmach Road, Ecstall/Skeena confluence and Khtada Lake.
Skeena River Mouth	This area is part of a high value scenic marine travel corridor, in addition to including the train corridor. Area also provides high quality angling, diving, and marine wildlife viewing opportunities.
Grenville Channel Corridor	Extremely high value scenic resources along major marine travel corridor. Potential for increased tourism around land base activities such as camping, hut-to-hut hiking, kayaking and canoeing, especially at southern end of channel. Visual management requirements highest in narrows due to close proximity to untouched forested land.
Ecstall River / Kitkiata Inlet	River based wilderness activities throughout zone. Grease trail in Upper Ecstall (Kitkiata/Quaal area). FN interests in cultural tours Also scenic from Douglas Channel area.
Prince Rupert Outer Area	Important scenic viewsapes from city/communities and Highway 16.
Dundas / Melville Islands	Scenic viewsapes important for wilderness experience. High potential for First Nations and other tourism opportunities, both marine and land-based.
Work Channel	High value scenic area in close proximity to Prince Rupert, with road access and high potential for tourism development. Marine wildlife viewing (whales) around the mouth of channel is an important tourism activity.
Estevan group and Campania Island	Scenic from: Estevan, Squally, Camaano Sound, Hecate Strait Important for marine tours, canoeing, kayaking, wildlife viewing (marine and terrestrial), and cultural tours. Land based activities focus around sheltered anchorages, undeveloped campsites and similar features.

Area	Reason for Visual Management
Campania Island	Scenic from adjacent marine areas. Important also for land-based activities.
Aristazabal Island	Scenic viewsapes in a remote setting. Scenic from Laredo Channel and Sound and Beachemin Channel. Marine based activities include cruising, fishing, marine wildlife viewing opportunities, and accessible beaches. Existing tourism facility at Barrowman Bay.
Observatory Inlet	Nisga’a commercial recreation opportunity Marine based sightseeing / viewing Scenic viewsapes combined with historic sites (e.g. Anyox, Alice Arm, Kitsault) and high wildlife viewing potential. Current use is low, but potential is high.
Porcher Island	Water-based activity from the marine area (Kitkatla Inlet / Porcher Inlet) Consult with Gitxaala First nation
Portland (K’alii Xk’alaan) Inlet / Canal	Scenic viewsapes combined with historic sites (e.g. Georgie River, Swamp Point, Maple Bay) and proximity to potential U.S. tourism market. Current use is low but potential is high. Nisga’a commercial recreation opportunity.
Outside Passage	Scenic viewsapes in a remote setting (Principe and Petrel Channels). Current use is marine-based (e.g. marine cruising, fishing, marine wildlife viewing) with potential for expanded land based activities through lake and inlet systems (e.g. Anger / Ire Inlets). Important for cruise ship travel, marine tours, canoeing, kayaking, wildlife viewing (marine and terrestrial), and cultural tours
Banks Island – Calamity Bay	Historical site.
Gil, Farrant, Fin, Hinton, and South Pitt Islands	Scenic from: Squally Channel, Whale Channel, Wright Sound Important for marine tours, canoeing, kayaking, wildlife viewing (marine and terrestrial), and cultural tours
Douglas Channel Area	Scenic from: Douglas Channel, Varney Passage, Ursula Channel, Mackay Reach, Bishop Bay Important for BC Ferries route, bear viewing (Kermode), fishing lodges, fishing, marine cruising, and marine wildlife viewing.

5.16.1 Resource issues

Meeting visual management goals in coastal forests is challenging because the steep terrain and tall trees often lead to significant visual impact from logging. Linear alterations, such as roads, can have severe and long-lasting visual impact. Also, partial cutting, which can be of visual benefit, is not always a viable option. Creative methods of visual landscape design and alternative harvesting systems hold potential to

manage the quality of viewsapes in coastal forests and maintain the overall visual experience in an area, while allowing harvesting to proceed.

Managing for visual quality is a challenge due to overlapping interests on the land and resource base. The historic harvesting practices of the North Coast have, for the most part, been limited to forested areas that are accessible directly to tidal marine water. The intent of visual quality management defined in this section is not to preclude forestry operations due to harvesting practices of the past, but rather to guide future operating practices in visually sensitive areas important to the tourism industry.

5.16.3 Management direction for Visuals

This section will focus on the following as they relate to visual quality management:

- Visual Management Area Definitions
- Transition Strategy and Implementation of Visual Management
- Chart Area Reallocation
- Continuous Viewpoints, Visible Distance and Green-up Requirements
- Operational Costs

5.16.3.1 Visual Management Area Definition

For forestry activities, visual zones will be managed according to four visual classes defined in Table 28 and demonstrated in **Error! Reference source not found.** These definitions describe the general visual management objectives, alteration guidelines, maximum alteration limits and management standards for each of the four Visual Classes. The “maximum alteration values” identify the highest level of visible alteration as determined from “perspective” view. Class I, II, and III visual zones are managed for viewers that are moving through an area. Class IV (Special Viewscape Zone) is managed for viewsapes from “static” locations such as lodges and high use, non-moving locations.

Visual class designations are to guide all existing and potential forestry development. They are to be considered in permitting and development planning (e.g. environmental assessment processes) for other industrial activities, however it is understood that other development may not be able to achieve these standards in local situations. In these circumstances, specific visual assessments and mitigation strategies should become part of the permitting process.

5.16.3.2 Transition Strategy and Implementation of Visual Management

- 1) Areas harvested prior to 1995 (the implementation of the *Forest Practices Code of British Columbia Act*), will not be included in calculating the maximum percent alteration currently within a visual quality polygon. This means that a clearcut from pre-1995 does not contribute to the visible alteration requirements within a visual quality polygon.
- 2) Existing approved cutting permits will be considered as transition permits and, as such, given variance if they exceed the maximum percent alteration permitted within a visual quality polygon. Therefore, the new system of visual quality management does not apply to permits that have been approved up to the date that the LRMP is approved.
- 3) Non-forestry related industrial disturbances (i.e. pipeline, hydro-electric, mining), or those on private land, will not be included in calculating the maximum alteration permitted within each visual quality polygon.
- 4) The North Coast Monitoring team will set up three operational trials in the plan area within one year of plan approval. These trials will:

- Further define the overall experience intended by each of the three visual management areas;
- Further define operational costs that result from implementation of the visual management areas;
- Involve both forestry tenure holders and tourism tenure holders who operate in the trial area.

The results of these trials will be used by the North Coast Monitoring Team to assess the effectiveness of the visual management system, and may result in recommendations from the Monitoring Team to refine the visual management system and/or the application of visual zones on the North Coast land base.

- 5) Forestry and tourism industry representatives will guide the North Coast Monitoring Team in developing an education program to promote public awareness on operational forestry practices that are used to meet visual sensitivities for tourism.
- 6) Monitoring programs will be set up by the North Coast Monitoring Team to review harvesting activities and report to both tourism and forestry industry representatives. A dispute resolution process will be set up if there is disagreement on achieving targets of the visual class targets.
- 7) The tourism and forestry sector representatives will agree to the Map 10 as defining visual management classes on the landscape as the basis for visual quality targets.
- 8) It is hereby understood that the agreement on visuals from the LRMP Table will be applied in the North Coast plan area in place of the current legislative requirements for Visual Quality Objectives of the *Forest & Range Practices Act*.

5.16.3.3 Chart Area Reallocation

This management system is contingent upon an equitable process of chart area reallocation, administered by the Ministry of Forests including all forest tenure holders; British Columbia Timber Sales, small business forestry and any other forest tenure holder affected by visual quality management. Chart reallocation is required to ensure equitable distribution of operational impacts among tenure holders, including small business operators and First Nations.

5.16.3.4 Continuous Viewpoints, Visible Distance and Green-Up Requirements

In order to ensure certainty to both the tourism and forestry industries, while addressing the intent of the visual experience, the following definitions will direct the way in which visibly harvested areas are calculated.

a) Viewscapes will be assessed from mid-channel of each visual quality corridor within the plan area. In all areas inventoried as visible, a joint assessment of actual visibility from the mid-channel will take place. Where that joint assessment indicates areas where logging would not be visible due to the distance from mid-channel, those areas will not be included in the calculation of percent alteration within the visual polygon.

b) Any harvesting on visible landscapes where the completed harvesting cannot be seen will not be included in the calculation of percent alteration within the visual polygon.

Continuous viewpoints are defined by the contiguous polygon on the land base defining the visual class. The continuous viewpoint will be considered perpendicular to the landscape from the mid channel. The allowable visible percent area for any given time will be based on the area of the contiguous polygon.

Green-up requirements that determine whether or not an area harvested is considered to be contributing to or disrupting the visual experience are subject to on going review by the North Coast Monitoring Team. The many combinations of slope, stocking and topography of the North Coast are too variable to implement set height requirements within the limited time frame for the LRMP. Industry representatives will work with the North Coast Monitoring Team to develop guiding principles for green-up requirements in order to achieve acceptable levels of operational impacts to both tourism and forestry.

5.16.3.5 Operational Impacts

The visual management system described in this section has been designed to provide a high quality viewing experience in the plan area, while allowing timber harvesting to proceed without undue operational impacts. Trials will be conducted to assess operational impacts from visual management to timber harvesting, and trial results will be provided to the North Coast Monitoring Team for their consideration.

Error! Reference source not found. visually represents the application of Class I, II and III management to three different landscapes. It is intended to provide a visual definition of acceptable forestry alteration for Classes I to III. Map 10 defines visual management classes across the LRMP plan area as the basis for visual quality targets. It is understood that this system of visual management will replace the current legislative requirements for Visual Quality Objectives of the *Forest and Range Practices Act*.

5.16.3.6 General Management Direction

Table 29 contains the general management direction for visual management, which uses the visual management classes described in Table 28. Examples of the visual management classes are displayed in Figure 1 **Error! Reference source not found.**

Figure 1: Visual representation of the application of Visual Management Classes I, II and III.

- Attached at the end of the document.

Table 28: Visual Management Area Classes and Prescriptions

Visual Zone	General Objective	Alteration Guideline	Maximum Alteration	Management Standards
Class I (Wild Zone)	The intention of this zone is to ensure the perception of wildness. This means that a wild scenic experience is sought whereby visually unaltered landscapes predominate.	<ul style="list-style-type: none"> • Very high proportion of landscape continuum in a wild appearance condition. • Low proportion of the landscape continuum in very carefully altered visual state. • Innovative, visually sensitive harvesting techniques are encouraged. 	2% perspective view	<ul style="list-style-type: none"> • Visual design assessment using digital terrain modeling is to be completed for developments proposed in visible areas. • Maintain continuous and effective shoreline buffer (while still permitting careful installation of shoreline facilities and access infrastructure like log dumps that are designed to minimize visual impacts). Low impact, not visually apparent selection hand logging permitted along shoreline. • Intent is to maintain the visual experience over time. To ensure this, visually effective green-up periods will be implemented and monitored to achieve the General Objective. • Agreement between the forestry and tourism operators will be established for logging and logging related (e.g. road building) operations between June 15 and Sept 15.
Class II (Natural Variability Zone)	Visual alterations in keeping with natural visual experience where activities blend with landscape and do not readily alter visual experience.	<ul style="list-style-type: none"> • High proportion of landscape continuum in naturally appearing condition. • Low proportion of the landscape continuum in very carefully altered visual state. • Innocuous development permitted throughout. Concentrated developments permitted on a sporadic basis 	5% perspective view	<ul style="list-style-type: none"> • Visual design assessment using digital terrain modeling is to be completed for developments proposed in visible areas. • Continuous shoreline buffer with minor gaps maintained. Low impact selection hand logging and limited, water based high lead logging permitted along shoreline • Intent is to maintain the visual experience over time. To ensure this, visually effective green-up periods will be implemented and monitored to achieve the General Objective. • Practical timing windows for active logging operations may be established in consultation with tourism operators • Maintain continuous and effective shoreline buffer (while still permitting careful installation of shoreline facilities and access infrastructure like log dumps that are designed to minimize visual impacts). Low impact, not visually apparent selection hand logging permitted along shoreline.

Visual Zone	General Objective	Alteration Guideline	Maximum Alteration	Management Standards
Class III (Landscape Forestry Zone)	Aesthetically pleasing scenic experience where activities are evident but subordinate. Design of alterations to create impression of careful and respectful land use.	<ul style="list-style-type: none"> Majority of landscape continuum in naturally appearing condition. Low proportion of the landscape continuum in readily visible but carefully altered visual state. Development evident throughout zone but subordinate 	8% perspective view	<ul style="list-style-type: none"> Visual design assessment using digital terrain modeling is to be completed for developments proposed in visible areas. Continuous shoreline buffer with minor gaps maintained. Low impact selection hand logging and limited, water based high lead logging permitted along shoreline Intent is to maintain the visual experience over time. To ensure this, visually effective green-up periods will be implemented and monitored to achieve the General Objective. Maintain continuous and effective shoreline buffer (while still permitting careful installation of shoreline facilities and access infrastructure like log dumps that are designed to minimize visual impacts). Low impact, not visually apparent selection hand logging permitted along shoreline.
Class IV (Special Viewscape Zone)	Manage specified facility-based viewscape to maintain or improve visual quality	<ul style="list-style-type: none"> Maintain or improve visual quality through time Establishment of specific activities within viewscape to be done collaboratively with the agreement of forestry and tourism operators 	By agreement based on existing level of integrity and/or disturbance in the facility's viewscape	<ul style="list-style-type: none"> Class IV should be managed similar to Class I. Visual design assessment using digital terrain modeling is to be completed for developments proposed in visible areas. Involve the interested stakeholder in the development of the visual design prescription Agreement between the forestry and tourism operators will be established for logging operations between June 15 and Sept 15.

Table 29: General management direction for visual management.

Management intent:			
<ul style="list-style-type: none"> To maintain the aesthetic quality of viewsapes from local and First Nations communities, as well as from areas used by recreationists, tourists and travelers. 			
Objective	Implementation indicator(s)	Targets	Management considerations
<p>1. Ensure that management maintains the quality of visual experiences according to the visual classes described in Table 28, identified on Map 10 and visually represented in Error! Reference source not found.</p>	<p>Degree of visual modification as a result of forest development activities.</p>	<p>Degree of visual modification consistent with visual classes defined in Table 28, and represented in Error! Reference source not found. for the visual areas identified on Map 10.</p>	<p>Monitoring programs will be set up by the LRMP implementation team to review harvesting activities and report to both tourism and forest industry representatives. This is intended to increase the level of communication between resource users.</p> <p>A dispute resolution process will be set up if there is disagreement on achieving the visual class targets.</p> <p>Visual class designations are to guide all existing and potential forestry development. They are also to be considered in permitting and development planning (e.g. environmental assessment processes) for other industrial activities, however it is understood that other development may not be able to achieve these standards in local situations. In these circumstances, specific visual assessments and mitigation strategies should become part of the permitting process.</p>
<p>2. Establish adaptive management operational trial areas to further define the overall experience intended by each of the three zones.</p>	<p>Number of operational trial area projects developed.</p>	<p>Three operational trial area projects developed within one year of plan approval.</p>	<p>The LRMP Monitoring Team will guide forestry and tourism industry representatives in developing an education program to promote public awareness of operational forestry practices that are used to meet visual sensitivities and develop collaborative use of the land base amongst forestry and tourism operators.</p>

Objective	Implementation indicator(s)	Targets	Management considerations
3. Ensure that tourism stakeholders are involved in reviewing forest development plans.	Number of forest development plans reviewed by tourism stakeholders.	100% of forest development plans reviewed by tourism stakeholders.	A dispute resolution process will be used to resolve disagreements about development plans or their implementation in relation to visual zone definitions.

6. COMMUNITY STABILITY AND ECONOMIC DEVELOPMENT

The communities in the North Coast are strongly resource-based, relying on natural resources to provide jobs and income. Economically significant industries include tourism, fishing and fish processing, forestry, and wood processing. Mining has been important historically and has the potential to be a significant economic contributor in the future. Offshore oil, gas and aquaculture also have the potential to be significant contributors to the economy, although these activities are controversial due to concerns about potential environmental impacts; however, these topics were not addressed at the LRMP Table. Diversification of the economy is recognized as being key to addressing the potentially negative “boom and bust” cycles that accompany dependence on one or two key resource-based industries.

Forestry, tourism and mining are closely linked to the land base. Development activities outside of private land, are addressed through the objectives, indicators and targets contained in Chapter 5: General Management Direction. Resource-based activities not dependent on the land base, such as commercial fishing, offshore oil and gas, and aquaculture are addressed through separate processes such as coastal planning. Note that the LRMP recognizes that salmon populations are potentially affected by the terrestrial activities and that the sustainable management of the salmon fishery is tied to sustainable resource management, as addressed in Chapter 5: General Management Direction.

One of the purposes of the LRMP is to provide certainty to the various economic sectors in the Plan Area, which in turn will contribute to economic stability. Economic stability through planning provides certainty for investment, both for external investors bringing jobs and services into local communities and by providing employment opportunities and quality of life to encourage people to settle in the area. Given the high dependence of North Coast communities on natural resources, sustaining these resources and the ecological services provided by healthy ecosystems is a primary concern, in order to achieve overall community stability and human well-being. The North Coast LRMP recognizes the importance of economic activities to the stability of the local area and to the economic well-being of the region, and province. Ecologically sustainable and diverse economic development should be encouraged consistent with the principles of ecosystem-based management.

There are four First Nations communities located within the North Coast plan area. These include: Hartley Bay, Lax Kw’alaams (Port Simpson), Metlakatla, and Gitxaala. While Haisla, Kitsumkalum and Kitselas communities fall outside the plan area, they do have interests within the plan area. Most of these First Nations communities have a higher level of unemployment and more poverty than non-First Nations communities in the region. Lax Kw’alaams and Metlakatla Band members represent 20% of the population of the Prince Rupert area. Unemployment within First Nation communities was 56.7% in 2001 compared to 15.8% unemployment in Prince Rupert and Port Edward. Per capita earnings for Lax Kw’alaams and Metlakatla residents was \$6071 compared to \$17,130 for Prince Rupert residents. Twice as many residents between the ages of 20 and 34 in Lax Kw’alaams and Metlakatla had less than a high school graduation certification than compared to Prince Rupert and Port Edward. First Nations want to be employed and they want to participate in the economy. It is critical that employment opportunities be created for these communities and that the LRMP facilitate the goal of increased employment for First Nations communities.

The Nisga’a Nation through the Nisga’a Final Agreement also has interests within the plan areas.

6.1 Agreement on “No Net Job Loss or Better”

MEMORANDUM OF AGREEMENT REGARDING IMPLEMENTATION OF ”NO NET JOB LOSS OR BETTER”

**Between
The Province of British Columbia
and
The North Coast LRMP Table**

June 12, 2004

Introduction

This Memorandum of Agreement regarding the implementation of “no net job loss or better” describes the Province’s understanding of and commitments to “no net job loss or better” as agreed to in the North Coast Land and Resource Management Plan.

The primary purpose of this agreement is to explicitly describe understandings of

1. what “no net job loss or better” means in the context of the LRMP, and
2. the commitments of the Province as to how ”no net job loss or better” will be implemented.

Understandings and Commitments

The Province supports ”no net job loss or better”, where it is understood to apply to:

- a) The North Coast Plan Area;
- b) Changes in employment figures that occur only as a result of the implementation of LRMP objectives and zones;
- c) Number of person years of employment (FTE’s) across all sectors of the economy (if that detailed level of valid information is available).

The Province makes the following commitments based on the above understandings:

- a) EBM, and in particular the trouble shooting and flexibility provisions, must be implemented in a manner consistent with NNJLOB principle.
- b) Legal land use objectives must be established and implemented in a manner consistent with the NNJLOB principle.
- c) Legal land use objectives will not be lowered below the standard provincial levels under any circumstances;
- d) The North Coast Monitoring Team will have specific responsibilities for overseeing the tracking of “no net job loss or better”, as well as responsibilities for making recommendations to the Province on changes, if necessary, to achieve it. These responsibilities will be built into the Terms of Reference for the monitoring team.

Appendix:

The Coast Information Team (CIT) has defined Ecosystem Based Management (EBM) as *“an adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and communities.”* This is achieved by attaining the two broad goals of EBM, which are to maintain ecological integrity while achieving high levels of human well being.

The North Coast LRMP Table has committed applying a balanced approach in the final LRMP document by achieving ecological integrity through a comprehensive system of land and resource management objectives. This includes concurrently achieving high levels of human well being by increasing certainty on the land, increasing the potential for a diversified economy that maintains existing aggregate/equivalent⁸¹ job levels across sectors, creates opportunities for jobs in First Nations communities, and provides for seamless transition⁸² to ensure there are no net negative impacts on jobs for communities as the north coast moves toward a new economy. Part of this transition to ensure healthy communities is the agreement around no net loss of jobs.

By agreeing to phase in the package of land and resource management objectives through time and only as the communities of the north coast transition into the new economy, the Table is seeking to ensure that currently employed workers will be able to maintain meaningful employment into the future, and that there are opportunities for First Nation and other community members to both attain and retain employment. The North Coast LRMP is built upon EBM management of land and resources occurring concurrently with a seamless and positive shift in employment that causes no disruption through loss of employment to workers and their families, and provides local workers with opportunities to work locally.

The Province fully supports the move to EBM within the LRMP being concurrent with no net loss of jobs.

North Coast LRMP Table Agreement:

1. *“No net loss of jobs, or better” means that economic change arising from the land use plan will, in aggregate, maintain or improve the number of jobs held by residents of the North Coast Plan Area.*
2. *The North Coast LRMP employment target is to reach a national average, including all First Nations communities. The North Coast LRMP includes the following commitments to labour and resource dependent communities:*
 - a) *No net job loss or better attributed to the implementation of the North Coast land use plan*
 - b) *Phase in EBM as we create new employment and a new economy.*
 - c) *Provide for transition through the management structure for EBM.*
 - d) *If the forestry, tourism, mining and other employment in aggregate does not achieve no net job loss or better, this will trigger more intensive/practical adaptive management, flexibility, and transition efforts through EBM (as contemplated within the trouble shooting and flexibility provisions of the EBM Handbook) and all other available means.*

⁸¹ The goal is to have existing aggregate wage levels remain constant as employment shifts among sectors of the economy

⁸² Existing employment levels remain constant or increase in the short term when summed across all sectors locally.

6.2 Economic and social goals for the North Coast

LRMPs are mandated to provide strategic direction for on-the-ground activities in order to provide an appropriate level of resource stewardship balanced across the range of resource uses and activities. Sustainable management of resources will contribute to a sustainable economy in the long term, acknowledging that economic health is also influenced by factors outside the control of land managers. Economic diversification will also contribute to the economic health and stability of communities.

The mandate of LRMPs is to make recommendations related to on-the-ground management of land and resources. At the same time, there is a recognition that the well-being of cultures, communities, and economies is an integral component of an ecosystem-based management framework and needs to be addressed within the context of maintaining healthy ecosystems and the interests of First Nations and local communities. There is also recognition of the links between management of on-the-ground resources and the economic viability and social stability of marine sectors, particularly commercial and sport fisheries.

Objectives for economic and social goals (human well-being) for the plan area are included here (Table 30) so that long-term monitoring can assess whether the overall goals for the plan area are being met. Monitoring of the LRMP will consider whether these overall goals are being met and the role of the LRMP in achieving ecosystem-based management as a whole.

Table 30: Economic and social objectives.

Economic/ social objective ⁸³	Effectiveness indicator(s)	Policy Recommendations
For all resource development activities		
1. Increase the number of jobs in the LRMP area.	Increasing local employment. To be measured for each community in the LRMP area.	Increase number of local Conservation Officers
2. Improve the standard of living and quality of life for all generations in the LRMP area. This includes maintaining a sustainable environment as well as a sustainable economy.	Increasing standard of living (e.g., mean per capita income). Indicators of human well-being: access to medical and education services; clean water and air; diverse recreation opportunities; lower crime rates, etc. To be measured for each community in the LRMP area.	Promote the development of a “rural strategy” that addresses social and economic challenges in the area and implications for the standard of living and quality of life of local and First Nations residents. The strategy will identify key social values in the area and highlight what is required for people to live and participate in the community with a satisfactory quality of life. Design health and education resources to address local needs. Maintain professional support in rural areas.
3. Expand on opportunities to address community needs and environmental health and integrity.	Revenues coming into and remaining in the community for infrastructure and community development. To be measured for each community in the LRMP area.	

⁸³ The first five economic/social objectives were identified by the working group for the economic development action plan.

Economic/ social objective ⁸³	Effectiveness indicator(s)	Policy Recommendations
<p>4. Enhance the diversity of large and small scale commercially viable businesses in the plan area</p>	<p>a. Increase in the number and range of economic activities across sectors. b. Range of large and small businesses c. Number of value-added, niche market and specialty products produced out of the North Coast. d. Number of programs that assist community members in starting businesses, including assistance with financing, business planning, and marketing.</p> <p>All indicators to be measured for each community in the LRMP area.</p>	<p>Create an enabling environment to enhance opportunities for innovation such as research and development e.g., through appurtenancy, tax incentives etc.</p> <p>Encourage local investment and participation in new economic ventures, including value-added and specialty products.</p>
<p>5. Increase the flow of benefits to local communities from resource rents, including First Nations communities.</p>	<p>Flow of revenue in and out of the community</p>	<p>Monitoring Committee to track flow of revenue in and out of the North Coast. Work with existing organizations that track the local economy e.g., North Coast Municipal Association, National Rural Network.</p> <p>Ensure that any new stumpage formula maximizes the amount of revenue that goes to local communities.</p> <p>Identify and pursue opportunities for community involvement in monitoring.</p>
<p>6. Create an environment that encourages investment in local companies.</p>	<p>Increase in the number of locally-owned businesses.</p> <p>To be measured for each community in the LRMP area.</p>	<p>Undertake programs to help community members attract capital to their communities.</p> <p>Identify opportunities linked to the natural potential of the plan area and provide appropriate infrastructure and training to realize this area-based economic potential.</p>

Economic/ social objective ⁸³	Effectiveness indicator(s)	Policy Recommendations
<p>7. Increase the flow of economic benefits to First Nations</p>	<p>Protocols between industry and First Nations, and the provincial government and First Nations, addressing employment, training, capacity building, tenure, and revenue sharing.</p> <p>Increased employment of First Nations in all sectors of the economy to reflect the per capita representation in the North Coast population.</p>	<p>Consultation with First Nations</p> <p>Negotiate protocols</p> <p>Include technical and professional training as an integral part of overall resource planning.</p> <p>Apply targeted interventions to increase employment opportunities in First Nations communities.</p>
<p>8. Promote dialogue, partnerships and problem solving between industry, the general public, and governments, including First Nations regarding sustainability and ecosystem –based management.</p>	<p>Increase in the number of businesses, partnerships, and joint ventures involving First Nations.</p> <p>Increase in the number of joint management agreements between the provincial government and First Nations and between third parties and First Nations.</p> <p>Increase in the level of decision-making required by First Nations for the management of forestry, fishery, and other natural resources.</p> <p>Number of successful projects that used effective collaboration or partnerships to problem solve and balance social, economic and environmental interests.</p> <p>Increase in the number of programs that provide capacity building for First Nations.</p>	<p>Encourage dialogue between industry and other interests at all phases of project development.</p>

Economic/ social objective ⁸³	Effectiveness indicator(s)	Policy Recommendations
9. Expedite the permitting and approval process for resource development activities including mining, forestry, tourism etc.	No increase in processing time and, where appropriate, decrease in processing time. Note that expediting approvals cannot compromise the time required for adequate assessment and must still ensure appropriate consultation with local governments, First Nations, and community stakeholders.	<p>LRMP and coastal planning should provide clarity of management intent, in order to facilitate the processing of development applications in consideration of all values.</p> <p>Report on permit processing times as part of LRMP implementation and monitoring.</p> <p>Involve First Nations in permitting and approval processes.</p> <p>Provide adequate resources for planning and assessment of proposed developments</p>
10. Provide for economic benefits for First Nation governments from mineral, aggregate and energy developments.	<p>First Nation benefits including jobs, training and contracts.</p> <p>Employment of First Nations in mining sector to reflect per capita representation in North Coast population.</p>	Prior to developing a mineral, aggregate or energy project, a company must work with the First Nation in whose traditional territory it is operating to come up with strategies and agreements which address training, employment, contracting, joint venturing and partnership opportunities for First Nations.
11. Examine past industrial development sites and determine if there are unacceptable environmental impacts and prioritize for reclamation	Number of industrial sites prioritized for reclamation.	
Mineral and energy resources		
12. Encourage a variety of mineral, aggregate and energy-based economic opportunities that are consistent with	<p>a. Number of long-term jobs directly and indirectly linked with mineral, aggregate and energy activities.</p> <p>To be measured in each community.</p>	

Economic/ social objective ⁸³	Effectiveness indicator(s)	Policy Recommendations
ecosystem-based management and that promote stability and long-term benefits to local communities.	b. Number of dollars and other benefits accruing to local, provincial, and national economies from mineral, aggregate and energy activities	
	c. The amount of First Nations participation in all facets of the mineral, aggregate and energy industry and associated services. d. Increase in the number of protocols that provide revenue-sharing with First Nations. To be measured in each community	Ensure that mineral, aggregate and energy development recognizes the economic component of First Nations rights and title.
13. Encourage a variety of low-impact energy sources.	Number of conventional and alternative energy types explored and projects initiated.	Local communities require the availability of alternative energy sources for subsistence purposes.
Timber		
14. Support an economically and ecologically sustainable and viable forest sector that operates consistent with ecosystem-based management and that promotes stability and long-term benefits to local communities.	a. Stable or increasing numbers of local people employed in the forest industry. To be measured in each community. Measures could include the number of local jobs per 1000 cubic metres of wood harvested.	Ensure equitable treatment of all participants in the forest economy. Balance local interests and employment, including First Nations, with business interests.
	b. Continuity and stability of local wood supply for small and large-scale manufacturing.	
	c. Increase in the number of protocols that provide revenue-sharing with First Nations. To be measured in each community. d. Increase in the number of renewable forest tenures awarded to First Nations. e. Establishment of community forests within	Monitor both direct and indirect economic gains from the forest industry to the North Coast and BC. Need for a market-based stumpage system that incorporates the cost of EBM. Government to endorse local initiatives for community forests through joint partnership programs.

Economic/ social objective ⁸³	Effectiveness indicator(s)	Policy Recommendations
	the LRMP area.	forests through joint partnership programs.
15. Increase opportunities for local economic diversification and value-added processing in the forest industry.	Increase in the number and diversity of forest-related businesses in the North Coast, including value-added and remanufacturing.	A significant proportion of all resources harvested should be processed into value-added products. Find ways to utilize all wood “waste”.
16. Develop forestry-related education programs in direct proximity of North Coast colleges and high schools, including programs in First Nations communities.	Education programs established	Government to endorse local initiatives for community forests through joint partnership programs.
Non-Timber Forest Products		
17. Maintain opportunities for NTFP industries in a manner consistent with EBM	Contribution of NTFP to human well-being including local jobs	
Tourism		
18. Encourage a variety of ecologically and economically sustainable tourism development opportunities across the LRMP area that are consistent with ecosystem-based management and that promote stability and long-term benefits to local communities.	Growth in the number of local tourism operations and related employment. To be measured in each community	Need to consider economic and environmental carrying capacity.
19. Promote and increase First Nations participation in tourism and ownership of tourism businesses	a. Increase in the number of tourism businesses owned by or involving First Nations. b. Increase in the number of protocol agreements.	Provide First Nations with assistance and opportunities to participate in the tourism sector and to also own their own tourism-related businesses. Seek to provide tenure award to First Nations.

Economic/ social objective ⁸³	Effectiveness indicator(s)	Policy Recommendations
	To be measured in each community.	Respect First Nations land use plans in tourism development and operations. Protocol agreements may reflect elements agreed to by the parties. Elements could include economic benefits and revenue sharing, amongst other items.
20. Attract investment and promote local ownership in the tourism industry.	Increase in the number of locally owned businesses in the tourism industry.	Promote partnerships and collaborative agreements between large and small businesses.
21. Encourage local employment opportunities in tourism by creating a positive and stable investment climate	Increase in local employment in the tourism industry	Includes direct employment in the tourism industry and employment in related service and supply industries
22. Industrial developers to engage in consultation with tourism operators and tenure holders to increase effectiveness of planning and seek to address interests of all parties, including First Nations.	Consultation on 100% of development plans referred to tourism associations and tourism operators and other sectors having a specific interest in impact on tourism, and individuals not belonging to a specific association..	Create and maintain an up-to-date directory of tourism and other operators in the North Coast, that is distributed to industrial developers in order to facilitate ongoing consultation. The directory should identify the geographic area of interest of tourism operators. Establish central place to record users of an area so new developers know who to consult with. First Nations, Provincial and local governments to work at instituting a mechanism to deal with unlicensed commercial tourism operators and non-commercial recreationists and tourists to maintain acceptable levels of use in consideration of the range of resource uses and other values and consistent with First Nations plans.
Non-Commercial Recreation		
23. Government to support infrastructure and services to maintain and enhance non-commercial recreation	Maintained or increased recreational infrastructure and publicly-owned services, e.g., boat launches, recreational campsites, public roads to recreational sites, garbage removal,	Publicly-maintained facilities contribute positive perceptions and well-being of local recreationists and visitors to the area.

Economic/ social objective ⁸³	Effectiveness indicator(s)	Policy Recommendations
opportunities	public toilets.	Through EBM supposed to leave as little footprint as possible – e.g., users take out own garbage
<p>24. Undertake studies to identify carrying capacity levels (re type, timing and intensity of use) for areas of high recreational use. Priority areas for carrying capacity studies will be identified by the LRMP Monitoring Committee. Carrying capacity studies should consider existing use and allocations.</p>	<p>Carrying capacity projects initiated and carrying capacities established for identified high use areas.</p>	<p>Requires consultation with user groups. Involve local people in projects Once carrying capacities have been determined for priority areas, allocations re types, timing and intensity of use can be made among First Nations, recreation and tourism users.</p>

7. IMPLEMENTATION, MONITORING AND AMENDMENT

7.1 Introduction

The coastal region of British Columbia is an area of significant interest and value to a broad range of stakeholders. In February 2002 the Province of British Columbia committed to supporting a process to create strategic land use plans that:

- Foster economic and environmental sustainability through an Ecosystem-Based Management (EBM) approach, which has the goals of maintaining ecological integrity and healthy human communities in the plan area and maintaining the quality of life valued by local residents and First Nations; and
- Deliver comprehensive strategic direction on the management and development of lands and resources, clearly describing (a) resource uses and values; (b) general management direction across the plan area; (c) management direction applicable to specific geographic areas; and (d) any implementation requirements such as recommendations for policy or legislative change. All recommendations for policy or legislative change will be based on best available peer-reviewed science as well as local and traditional ecological knowledge.

Existing aboriginal rights and treaty rights are recognized and affirmed under Section 35 of the *Constitution Act, 1982*. Planning under ecosystem-based management acknowledges these rights and also addresses First Nations interests within their claimed territories. It also recognizes the importance of social and economic stability to local communities, including First Nations communities. [The nature of First Nations involvement in plan implementation is still under discussion at the government-to-government level and will be added to this chapter once completed. At this stage, First Nations have indicated they will need to see how the package fits together with the FN role defined before they can support the chapter.]

The North Coast LRMP has been developed using best available science and local and traditional knowledge. The structure for implementation, monitoring and amendment of the LRMP is designed to allow continuity from the LRMP Table to the implementation phase and to ensure that the principles of EBM are carried forward. It will also allow the plan to evolve as peer review of current reports and new information becomes available and our understanding improves about ecosystems and socio-economic values on the North Coast.

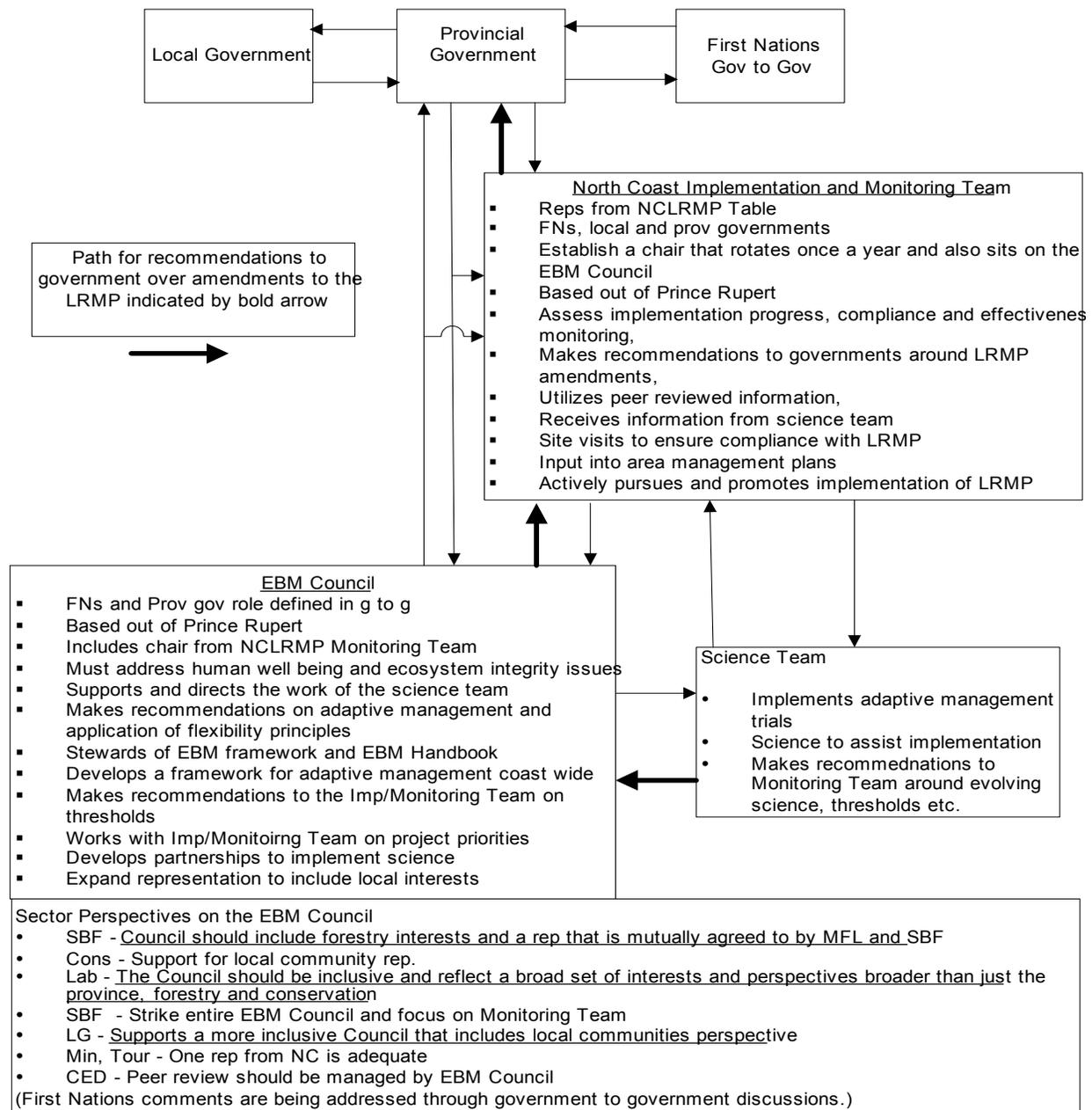
In this sense the LRMP is a ‘living’ document that evolves over time. By monitoring key indicators at various stages and incorporating new information and knowledge, it will be possible to analyze the outcomes of management practices in light of the original LRMP objectives and incorporate those results through amendment and more detailed planning.

7.2 Implementation Structure

The EBM Council is responsible for adaptive management, the EBM Handbook and coordination of science across the coast. The North Coast Monitoring Team is responsible for making recommendations (i.e., social choice) to Provincial government over finalization of GMD or future amendments to the LRMP, including indicators, targets and management considerations within the GMD.

There are a number of different groups and agencies involved in the implementation and monitoring of an LRMP. Figure 2 shows the proposed structure for the various parties involved in LRMP implementation and monitoring.

Figure 2: Relationship between the LRMP Monitoring Teams, the EBM Steering Committee and Science Team and the provincial government during plan implementation



Notes to Figure 2:

- The structure of First Nations participation in implementation and monitoring will be developed through government-to-government discussions.
- The relationship between the provincial government and local government as it relates to monitoring will be guided by the Protocol of Recognition between the Province of BC and Union of British Columbia Municipalities.

7.2.1 North Coast Monitoring Team

The North Coast LRMP Monitoring Team will provide the continuity between the completion of the LRMP and its implementation, including effectiveness monitoring and recommendations for amendment over the short and long term. The membership of the Monitoring Team is intended to be inclusive and equitable and to reflect the diversity of the original LRMP Planning Table, including representatives of local governments and each First Nation in a manner consistent with a government-to-government relationship between First Nations and the Province.

The transition from LRMP Table to monitoring team is intended to be as seamless as possible. A meeting will be held following LRMP ratification, at which time participants in the LRMP and other interested parties can indicate their interest in participating in the Monitoring Team. It is expected that the structure of the Monitoring Team will reflect the LRMP Table, with a representative and alternate from each sector participating in meetings. As part of developing its Terms of Reference, the members of the Monitoring Team will agree on an appropriate composition for the Team and how representatives and alternates from the various sectors will be selected.

The role of the Monitoring Team is to assess compliance with the LRMP and the effectiveness of the plan in addressing the overall goals and objectives for the area. The Committee does not have the mandate to make land use planning decisions, however it can make recommendations to the provincial government on effective plan implementation and for amendments as new information becomes available. It is envisioned that the Committee will work within a cooperative reporting structure that involves local, provincial and First Nations governments and that provides opportunities for feedback from the public, stakeholders, and line agencies involved in plan implementation (see Figure 2).

The North Coast LRMP is an independent planning process that has made recommendations for the North Coast LRMP area and it is also part of a larger coastal planning structure that is fair, transparent and equitable. Plan implementation is likely to be coordinated with other coastal strategic land use plans, including the Central Coast LRMP, Haida Gwaii/ Queen Charlotte Islands Land Use Plan and First Nations Land Use Plans. Each of these strategic plans is expected to have their own monitoring committee. As part of coast-wide implementation of LRMPs (see below), independent science and local and traditional ecological knowledge will be applied to assess EBM-related thresholds and targets. The outcome of these assessments will inform LRMP Monitoring Teams and government-to-government discussions about amendments to the LRMP and will assist in providing the overall effectiveness of the plan in meeting EBM goals.

One of the first tasks of the members of the North Coast LRMP Monitoring Team will be to develop a Terms of Reference and Ground Rules. The range of activities of the Committee could include the following:

- To actively pursue and promote implementation of the approved LRMP.
- To assess implementation progress and compliance by agencies and resource users and provide recommendations for improvement. Note that this is intended to be a strategic monitoring of compliance; the Monitoring Team is not intended to act as a watchdog for operational infractions, which will be the responsibility of existing auditing programs.

- To assess the short and long-term effectiveness of the LRMP objectives and targets in providing ecosystem-based management of all values (social, economic and ecological) and provide recommendations for improvement;
- To undertake occasional site visits (more frequent at the start of the process) to review the effectiveness of plan implementation in meeting both the human and ecological well-being components of EBM.
- To bring any concerns and new information to the attention of the provincial government;
- To identify and forward requests for research and adaptive management to coast-wide implementation coordinators in order to inform Monitoring Team recommendations. The Monitoring Team may also provide feedback to the coast-wide implementation body with regard to the socio-economic and environmental values in the North Coast and to clarify the intent of the LRMP as required.
- To provide advice on plan interpretation and implementation at the request of provincial government agencies;
- To review and provide input into more detailed management plans for Protection Areas.
- Review and provide input into priorities for watershed restoration.
- To pursue opportunities for public-private partnerships to carry out inventory, monitoring and adaptive management projects as required. These partnerships will attempt to build on existing monitoring and inventory programs wherever possible. Any projects initiated through public-private partnerships will be undertaken as independent, science-based undertakings that inform, but are independent to, the Monitoring Team.
- To review and provide input to the LRMP Monitoring Report and provide recommendations on proposed plan amendments;
- To provide community liaison concerning plan implementation and monitoring. This includes providing timely and transparent release of information to local and provincial media on the progress of plan implementation under EBM; and
- To inform the international community about the progress of EBM implementation in the North Coast and to promote its successes.

In order to ensure an equitable implementation process that encourages local participation across the full range of interests in the planning area, the LRMP Table⁸⁴ recommends that financial support be provided by way of fair daily remuneration to local Monitoring Team members who must volunteer their time to participate. The purpose of the remuneration is to offset the cost of lost wages incurred by participation during work days.

7.2.2 Provincial Government

7.2.2.1 Ministry of Sustainable Resource Management

With the exception of First Nations Land Use Plans, the Ministry of Sustainable Resource Management (MSRM) oversees implementation of strategic land use plans. MSRM works with regional managers of other agencies through the Interagency Management Committee (IAMC) to address cross-ministry implementation issues. The North Coast LRMP falls within both the Coast Region IAMC and Skeena Sub-region IAMC areas. MSRM will:

- Oversee implementation of the LRMP;
- Establish and coordinate the activities of LRMP Monitoring Teams;

⁸⁴ The Province stood aside on this Table recommendation

- Monitor implementation progress and compliance by agencies and resource users. This includes making efficient use of existing compliance and enforcement and monitoring programs;
- Interpret plan management objectives and strategies and resolve issues where necessary, in consultation with the LRMP Monitoring Team;
- Prepare a Monitoring Report on plan implementation annually for the first two years following plan approval and on implementation and effectiveness every two years thereafter;
- Pursue partnerships and funding to support ongoing implementation and monitoring activities;
- Review recommendations from the Monitoring Team on proposed plan amendments and provide advice on those amendments to Government; and
- Advise the provincial government of specific problems regarding plan implementation.
- LRMP Table members recommend strongly that implementation of the North Coast LRMP be coordinated out of the northwest.

Provincial Government Agencies

Provincial government agencies are the primary vehicles for the implementation of the LRMP through the ongoing delivery of government programs, policies and initiatives. The relevant ministries and agencies will:

- Carry out responsibilities under the plan;
- Prepare an Implementation Plan detailing tasks arising from LRMP objectives, targets and management considerations, including defining priorities for implementation and more detailed planning;
- Provide the LRMP document to licensed resource users, resource agency staff, stakeholders, First Nations and interested public and provide information support concerning plan interpretation and implementation;
- Require consistency with the LRMP by resource users;
- Advise MSRM on aspects of plan interpretation and implementation;
- Prepare summaries for the monitoring report;
- Initiate, review and/or provide recommendations on proposed revisions and amendments to the plan, to be identified to the LRMP Monitoring Team through the LRMP Monitoring Report.

7.2.3 First Nations

[Government is committed to working with First Nations on a government-to-government basis. The nature of the government-to-government component of LRMP implementation will be defined during the government-to-government discussions that precede Cabinet's approval of the LRMP and a description inserted in this chapter.

Government is also committed to working with Nisga'a Lisims Government to ensure that the provisions of the Nisga'a Final Agreement are respected.]

7.2.4 Local government

The provincial government will keep local governments informed about the implementation of the LRMP. Local governments are encouraged to participate in the implementation and ongoing monitoring and review of the plan through representation on the LRMP Monitoring Team, participation in coast-wide implementation, or through direct discussions with the provincial government. They are encouraged to

inform the Province of regional or municipal issues related to LRMP implementation and to provide information about settlement planning or other initiatives that may have implications for implementing the LRMP direction.

7.2.5 Public, Stakeholders, and Resource Developers

The nature and level of involvement of stakeholders, resource developers, and members of the public in LRMP implementation will be determined in response to emerging issues, stakeholder interests and agency resources. Interest-based, participatory processes are encouraged in principle. Members of the public, stakeholders and resource developers are expected to continue their roles as important contributors to the effective implementation of the LRMP in partnership with First Nations, and local and provincial governments. These parties can provide important feedback to the provincial government through the implementing provincial agencies or their sector representatives on the LRMP Monitoring Team. In addition, resource developers can work with the Monitoring Team and the provincial government to develop and fund inventory, monitoring and adaptive management projects as part of public-private partnerships.

7.2.6 Coast-wide Implementation and Science

A process will be developed coast-wide to coordinate, in a transparent, cost-effective and accountable manner, the refinement, implementation and practice of EBM to maintain ecological integrity and achieve high levels of human well-being that reflects local considerations in the Central Coast, North Coast and Haida Gwaii/QCI region of the coast of BC. This will include:

- Using the best available science and local and traditional ecological knowledge management systems to
 - refine currently accepted benchmarks and thresholds for human well-being and ecological integrity as updated information comes forward;
 - make recommendations on inventory requirements and planning and assessment standards under EBM; and
 - identify additional thresholds, where required;
- Recommending management targets to the LRMP Monitoring Team and local, provincial and First Nations governments;
- Ensuring the effectiveness of EBM-related monitoring and implementation programs; and
- Refining priorities and requirements for adaptive management programs/initiatives and ensure their credibility and effective implementation.

A coast-wide EBM Science Team, consisting of independently chosen technical experts in social, economic and ecological science, will conduct scientific research including ecological integrity (e.g., forest ecology, terrain stability, hydrology, riparian ecosystems, conservation biology, traditional ecological knowledge), human well-being (e.g., socio-economics, sociology, anthropology) and the design and application of adaptive management programs. Research should include the involvement of local and provincial scientists including government scientists, universities, and the consulting community, as well as people having local and traditional knowledge of the values of interest. All products developed to inform LRMP implementation will undergo a formal, double-blind peer review to ensure that the methods and conclusions are based on sound and credible science.

The EBM Council, informed by recommendations from the North Coast Monitoring Team where appropriate, shall be responsible for overall direction and management of the EBM Science Team. The EBM Science Team should be chaired by a strong, impartial person with a proven track record in coordinating multidisciplinary projects.

IMPLEMENTATION, MONITORING AND AMENDMENT

Note that the intent of coast-wide implementation is not to create a new layer of bureaucracy. Wherever possible, projects will be based on public-private partnerships and will build on existing programs and inventory and monitoring projects. In addition, attempts will be made to identify arrangements that address the business interests of developers while providing needed to support EBM e.g., as part of forest certification or mine impact assessment.

7.3 Plan Implementation

In the Management Direction for the LRMP, the management intent and objectives describe a desired future condition to be met as a result of land and resource management. Where indicators and targets are in place, these provide measures of achievement of the objective. Management considerations are strategies for implementation to meet objectives and targets. During plan implementation, the direction in the LRMP will guide approval processes for development activities and overall operational planning. Implementation of the LRMP can occur through a number of processes:

- More detailed plans, such as Sustainable Resource Management Plans (SRMPs), Sustainable Forest Management Plans (SFMPs), Forest Stewardship Plans (FSPs), etc.,
- Approval processes such as the Environmental Assessment Process;
- Resource development permits;
- Land dispositions; and
- Incremental activities implemented as specific LRMP projects.

Resource agencies are responsible for implementing the LRMP as part of their annual business plan. Provincial agencies are responsible for developing business or service plans that identify LRMP-related projects. The business or service plan will provide details of how management direction will be applied in the day-to-day business of the resource agencies. The plan will also set implementation priorities. Agencies will be responsible for providing updates on the level of progress on implementation projects in the LRMP Monitoring Report (see Chapter 7: Implementation, Monitoring and Amendment).

It is expected that all elements of the resource management direction in the LRMP will be fully implemented, subject to the flexibility provisions outlined below and available funding. The management intent in the LRMP will be reflected in resource management and development activities as soon as possible following plan approval by the provincial Cabinet.

7.3.1 Direction to more Detailed Planning

As part of implementation, it may be necessary to refine the broad, strategic guidance in the LRMP through more detailed plans. Detailed plans include sustainable resource management plans, access management plans, protection area management plans, settlement use plans (pursuant to the *Municipal Act*, and any future local plans. In all cases, it is expected that detailed planning initiatives and the resulting products will be guided by, and be consistent with, LRMP management direction. Where more detailed planning processes reveal new information, revision or amendment to the LRMP may be warranted, in accordance with the criteria and process outlined later in this chapter.

7.3.2 Legal designations

There are a number of potential pieces of legislation available for the purpose of designating land use types. Setting legal designations for Protection Areas, Biodiversity Areas and Special Forest Management Areas should be considered in the context of the definitions described above.

Specific elements of the North Coast LRMP will receive legal designation following Cabinet approval of the LRMP. In general, legal designation occurs to provide certainty to a specific component of the management direction (an objective or target).

The following criteria will be used to determine which elements of the LRMP will be considered for establishment as a legal objective. Each element of the North Coast LRMP will be evaluated against the following criteria:

- The direction is measurable and applies to on-the-ground activities related to land and resources under provincial jurisdiction.
- The direction pertains to operational plans.
- The direction is incremental to existing policy or legislation.
- The direction is not already addressed through existing regulations.
- There is a low likelihood that the objective will have to be frequently changed (e.g. as a result of research or new information). Changing a legal objective based on an LRMP requires signing by a statutory decision maker or their delegate.

The Province commits to informing the Monitoring Team about any LRMP management direction that it is considering for legal establishment. Any reports and analyses behind the targets in the Cabinet-approved GMD that are appropriate to be made legally binding will be subject to formal scientific peer review before legal establishment is undertaken. The LRMP Monitoring Team will be informed about objectives and targets that are proposed for legal establishment so that they can review the information behind the management direction in light of most up-to-date peer-reviewed information and adaptive management.

The provincial government has created legislation under the *Land Act* and the *Forest and Range and Practices Act* for legally establishing objectives and targets in LRMPs. These new legislative tools will replace the Higher Level Plan designations under the *Forest Practices Code of BC Act* (FPC). It is expected that translating LRMP recommendations into legal objectives under the *Land Act* will occur over a 6 month to 2 year period. This will provide time to resolve outstanding issues related to EBM objectives and targets. The Minister or Regional Director of the Ministry of Sustainable Resource Management has the authority to approve or change legal objectives (see Chapter 7: Implementation, Monitoring and Amendment).

7.4 Requirements for transitioning to Ecosystem-based Management on the Coast

7.4.1 Data Requirements

The implementation of EBM relies heavily on the availability of data. It is generally agreed that data gaps exist, including data relating to ecological, social, economic and cultural factors. The strategy and timing of outstanding data development and analysis need to be addressed in the EBM Implementation Workshop. Obvious steps in data development include:

- Identify data gaps (e.g., TEM, socio-economic, TEK, local knowledge) and analytical requirements;
- Develop and initiate workplan, budget acquisition and timeline to close data gaps;
- Prioritize which data gaps get attention and action.
- Identify data gaps in TEK management systems and local knowledge.

7.4.2 Capacity Building and Training

Given the change from current planning and practice contemplated by EBM, capacity building is a priority for implementation.

General proposals that require further development:

- Beginning immediately, develop and implement an EBM training program for managers, planners and workers (including field training sessions, video training, computer based training model with self test, posters, etc.);
- Link training program to operational pilots (landscape/watershed) as a modular means of implementing operational components of the EBM Handbook.

7.4.3 Equity for affected workers

The principles and goals of EBM require equity. Where the implementation of EBM potentially leads to a reduction in the number of people employed in forestry, logging and silviculture, EBM should be phased in as new employment is created. A mechanism is required to ensure workers are treated equitably. This is primarily the responsibility of government, licensees and institutional mechanisms like the Coast Sustainability Trust (see Section 6.1 Agreement on “No Net Job Loss or Better”).

7.4.4 Costs Associated with implementing EBM

Implementing EBM has cost implications for government and the private sector. The failure to quantify and understand cost implications in a precise and transparent fashion could prove to be a significant impediment to implementing EBM. Implementing EBM successfully requires that enterprises that practice EBM realize a profit if they are to be successful, and that institutions (e.g., government) supporting implementation of EBM enjoy a measure of fiscal accountability. Among other things, the implementation process needs to address:

- Government revenue;
- Amortizing infrastructure (e.g., roads, bridges, logging camps);
- Existing deployment of capital (e.g., machinery, camps, infrastructure, human resources);
- Opportunity costs;
- Stumpage allowance (e.g., additional considerations for EBM and EBM pilot costs).

7.4.5 EBM Investment

The implementation of EBM contemplates new investment to achieve the desired equilibrium between conservation and development. Recognizing that investment seeks a return, the opportunities for new and innovative investment need to be actively explored. To date, exploration of the potential of new investment to carry the cost of implementing EBM has been explored on a limited basis.

The implementation process needs to establish criteria for EBM investment and pursue potential sources.

Criteria include:

- Risk abatement
- Marketing
- Potential for return on investment

Proposals from the Forest Sector for Investment include:

- developing an international reputation for environmental leadership
- doubling the amount of volume going into value-added processing in BC over the next ten years
- branding coastal forest products
- a range of improved forest practices
- practicing innovative eco-sensitive forestry

7.5 Monitoring

The monitoring phase of the LRMP involves ongoing assessment of how well the management intent in the LRMP is being implemented. There are two aspects to plan monitoring:

- i) *LRMP implementation monitoring*, which reviews the progress of agency projects and programs related to LRMP implementation and assesses compliance with LRMP management direction; and
- ii) *LRMP effectiveness monitoring*, which involves monitoring of selected indicators over time to assess the effectiveness of LRMP management targets in achieving the overall intent of the plan, as reflected in the management intent and objectives. This includes adaptive management projects to assess the relative effectiveness of different management approaches.

Implementation monitoring will be undertaken by the provincial government following the steps outlined in the provincial Strategic Land Use Plan Monitoring Procedures (Reay and Zweck, May, 2000 Draft). The results will be reported out in the LRMP Monitoring Report (see below).

Effectiveness monitoring will be carried out at a number of levels. Monitoring and adaptive management of specific values will be coordinated and implemented as part of coast-wide implementation (see Section 7.2.6). In addition, funding will be sought through public-private partnerships to carry out monitoring and adaptive management related to other resources addressed in the LRMP (socio-economic and ecological). More intensive adaptive management efforts may be required where socio-economic indicators such as employment (no net job loss) or ecological indicators suggest that EBM is not being achieved. Priorities for inventory and adaptive management are identified in Appendix 5.

7.5.1 Funding

The success of LRMP monitoring programs requires continuity and an assurance of ongoing funding. The LRMP Table recommends that umbrella funding targeted to the North Coast be provided by the provincial government over at least 5 years rather than annual funding. In addition, a North Coast Monitoring Team of the LRMP will be struck to explore opportunities for funding through the federal government, provincial economic development initiatives (e.g., Western Economic Development), local government associations (e.g., chamber of commerce, northern caucus), international partnership programs, provincial and national non-governmental organizations, and industry.

Participants of the North Coast LRMP support the final consensus recommendations with the understanding that adequate funding will be provided for implementation and monitoring (as per the letter in Appendix 9). Within this context the Provincial government will provide basic funding for a monitoring committee and contribute to coast-wide adaptive management and advancement of the science to support EBM. The LRMP Table recommends that funding include daily remuneration for local Team members who participate voluntarily in the process. The purpose of the remuneration would be to offset the cost of lost wages incurred by participation during work days.

It is understood that funding partners will be required to fully fund the above-mentioned implementation activities.

7.5.2 Reporting out

Accountability to the plan is described in the Monitoring Report, in which individual agencies report on implementation progress and the status of completion of tasks or actions identified in the LRMP Implementation Plan. The Report also summarizes, through the evaluation of performance indicators, the achievement of expected outcomes for the LRMP (through effectiveness monitoring). The provincial government is responsible for preparing the Monitoring Report and coordinating a process of review and discussion by the LRMP Monitoring Team. Those ministries responsible for implementing the LRMP

objectives will each contribute annual reports on their agency's progress on LRMP tasks and activities, which are synopsised in the Monitoring Report. The Report will be prepared annually in the first 2 years following plan approval and every 2 years after that.

The Monitoring Report will be presented to the LRMP Monitoring Team for review. As part of the review process, the Monitoring Team may make recommendations on plan implementation and amendments. The provincial government will report back to the Monitoring Team on how the recommendations of the Committee have been addressed.

The provincial government and the LRMP Monitoring Team will communicate the progress of plan implementation under EBM to local, regional and provincial communities on a regular basis. In addition, every effort will be made to promote the progress of EBM implementation and its successes to the international community. This could include a market strategy that, among other things, involves communicating with local governments in the European community about EBM implementation.

7.6 Plan Amendments

To remain relevant as circumstances change, the final LRMP must be open to evolution and fine-tuning. It must be capable of responding to significant new issues should they arise, through the findings of adaptive management experiments or projects. Reasons for plan changes include:

- emergence of new information or research results on resource values including results from adaptive management trials and feedback from peer review of LRMP-related documents such as relevant resource analyses and products;
- emergence of unanticipated problems;
- emergence of improved management techniques and opportunities for greater efficiencies;
- emergence of more effective ways of achieving intended objectives;
- recommendations for changes in the strategic plan arising from lower level planning processes, compliance with new legislation or regulations, or with significant new land and resource management strategies or provincial initiatives.

If independent monitoring shows that the strategic management plan established for a particular Biodiversity Area is precluding investment in permitted economic activities in that area, appropriate amendments to the strategic management plan to address the investment impediments may be developed (in consultation with the North Coast Monitoring Team), provided that any amendments must be consistent with the primary role of Biodiversity Areas as described in Section 4.1.3 (i.e. conservation and the contribution to the maintenance of species, ecosystems and seral stage diversity and ecosystem function).

Proposed revisions to the LRMP as identified by agencies, First Nations and the Monitoring Team, or through coast-wide implementation, will be identified in the Monitoring Report. The Monitoring Team will provide recommendations for plan amendments to the provincial government based on review of the Monitoring Report, site visits, results of new information coming forward as a result of research and adaptive management projects, and feedback from sector constituents. The provincial government will develop an appropriate amendment process, as required and in consultation with the Monitoring Team, and will coordinate the process to ensure it is consistent with existing legislation, regulations and policy. There are different levels of amendment, depending on the scope and number of issues involved. These are described in Section 7.6.1 below.

7.6.1 Categories of Amendments

The provincial government will review all proposed plan amendments and assign them to one of the three categories detailed below. In making such assignments, the provincial government will seek recommendations from the Monitoring Team.

Minor Amendments (Plan Updates)

Minor amendments or plan updates are any minor changes to the plan that would not have the effect of altering the overall balance of the originally negotiated agreement reflected in the approved plan. Recommendations for minor revisions to the plan will be made by the Monitoring Team and can be brought forward at any time. Minor changes include:

- Revision of wording to clarify intent or correct errors in the original plan document;
- Revision of the order in which local level plans, watershed assessments, and other actions identified in the plan are actually done;
- Priorities for local level plans, watershed assessments, and other actions identified in the plan;

- Small changes to boundaries of resource attribute maps;
- Refinements to objectives and targets or indicators, i.e. clarifying or interpreting management direction, or adding new ones that provide alternative management direction yet still achieve the existing objectives in the plan; and
- Changes required to make the plan conform with provincial laws, regulations or policies, where these do not alter the original balance of the plan agreement.

Unscheduled Major Amendments

An unscheduled major amendment is a significant change to the plan:

- that would have the effect of altering the overall balance of the originally negotiated agreement reflected in the approved plan, and
- that, for reasons of overriding provincial necessity or other compelling causes, must be considered before the scheduled term of the plan is complete.

Unscheduled major amendments may include:

- Significant changes to the boundaries of resource management zones. This does not include areas legislated under the *Land Act*, *Park Act*, *Environment and Land Use Act* or *Ecological Reserve Act*, which can only have their boundaries changed by an Order-in-Council or in some cases by the Ministry of Sustainable Resource Management.;
- Major revisions to the objectives, targets or indicators set out in the plan, i.e., additions or deletions. This includes changes that result from adaptive management or peer review of existing documents; and
- Changes required to make the plan conform with provincial laws, regulations, strategies or policies (including new strategic initiatives such as the Grizzly Bear Strategy, the Identified Wildlife Management Strategy, etc.), where these do not alter the original balance of the plan agreement.

In the interests of protecting plan stability, every effort should be made to hold issues for consideration in the periodic, comprehensive review rather than opening the plan for major amendment during its term.

Periodic Comprehensive Review

The LRMP is subject to a periodic, comprehensive review which involves a review of the entire plan and examines all significant revision proposals in context. The provincial government may consider annually whether or not a comprehensive review is warranted, based on the number and significance of changes recommended by the Monitoring Team or through coast-wide implementation. The provincial government will establish the Terms of Reference for the review, in consultation with the public, First Nations, and the LRMP Monitoring Team. The Terms of Reference will be consistent with existing legislation, regulations and policy.

8. GLOSSARY

ACCESS PLAN: A plan that shows how road construction, modification and deactivation will be carried out to protect, or mitigate impacts on known resources or sensitive locations while maximizing the efficacy of resource development.

ACTIVE FLOODPLAIN: An active floodplain is any level area with alluvial soils, adjacent to streams, which is flooded by stream water on a periodic basis and is at the same elevation as areas showing evidence of:

- Flood channels free of terrestrial vegetation
- Rafted debris or fluvial sediments newly deposited on the surface of the forest floor or suspended on trees or vegetation
- Recent scarring of trees by material moved by flood waters.

The active floodplain is typically flooded every few years and may be less extensive than a broader floodplain that is bounded by a distinct terrace or slope break

ACCESS MANAGEMENT PLAN: A plan that directs the control of public access following road development to minimize impacts on sensitive habitats and wildlife populations e.g., through gating, access control points, or seasonal road closures.

ADAPTIVE MANAGEMENT: The rigorous combination of management, research, and monitoring so that credible information is gained and management activities can be modified by experience. Adaptive management acknowledges institutional barriers to change and designs means to overcome them.

ADVANCED EXPLORATION: Development work to provide an estimate of the size, shape, position and value of an occurrence of oil, gas, minerals or rocks in advance of a production decision. Advanced exploration can involve techniques such as detailed borehole drilling, surface or underground bulk samples from trial pits, headings, drifts and tunnels.

ALLOWABLE ANNUAL CUT (AAC): The allowable rate of timber harvest from a specified area of land. The chief forester sets AACs for timber supply areas (TSAs) and tree farm licences (TFLs) in accordance with Section 8 of the *Forest Act*.

ALPINE: The zone in a mountain system which lies above the timberline.

ALTERNATIVE SILVICULTURE SYSTEMS: Silviculture systems other than clearcutting or clearcutting with reserves that maintain significant mature forest cover.

ANADROMOUS FISH: Fish that spawn in freshwater and migrate to sea to grow to maturity.

ARCHAEOLOGICAL SITES: Locations containing or with the potential to contain the physical remains of past human activity. These sites are assessed through archaeological investigations (see also cultural heritage resource).

BACKCOUNTRY RECREATION: The Ministry of Small Business, Tourism and Culture defines a backcountry area as one that is accessible by neither paved nor gravel road. A backcountry area under this definition is more than 1 km from any road. Backcountry areas are remote and have little to no visible evidence of human activity or development.

BIODIVERSITY: (SEE BIOLOGICAL DIVERSITY)

BIOGEOCLIMATIC ECOSYSTEM CLASSIFICATION (BEC): A hierarchical classification scheme that integrates climatic, vegetation and site factors at three levels: regional, local and chronological.

BIOGEOCLIMATIC ZONE: A large geographic area with a broadly homogeneous macroclimate. Each zone is named after one or more of the dominant climax species of the ecosystems in the zone, and a geographic or climatic modifier. British Columbia has 14 biogeoclimatic zones.

BIOLOGICAL DIVERSITY: The diversity of plants, animals and other living organisms in all their forms and levels of organization, including genes, species, ecosystems, and the evolutionary and functional processes that link them.

BLUE-LISTED SPECIES: Sensitive or vulnerable species as identified by the British Columbia Conservation Data Centre. Blue-listed species are considered to be vulnerable and “at risk” but not yet endangered or threatened. Populations of these species may not be decline but their habitat or other requirements are such that they are sensitive to further disturbance. The blue list also includes species that may not be in decline but that are generally suspected of being vulnerable, but for which information is too limited to allow designation in another category.

BOTANICAL FOREST PRODUCT: Non-timber based products gathered from forest and range land. There are seven recognized categories: wild edible mushrooms, floral greenery, medicinal products, fruits and berries, herbs and vegetables, landscaping products, and craft products.

COARSE WOODY DEBRIS: Sound and rotting logs and stumps that provide habitat for fungi, plants, animals and insects and their predators, and that provide a source of nutrients for soil development.

COMMERCIAL TIMBER HARVESTING: The cutting and removal of trees from a forested area for the primary purpose of producing forest products and/or practising forest management. “Commercial Timber Harvesting” does not include the incidental cutting and removal of trees for other purposes (e.g., mining).

COMMUNITY WATERSHED: Defined in the *Forest Practices Code of British Columbia Act* as:

- a) the drainage area above the most downstream point of diversion on a stream for a water use that is for human consumption and that is licensed under the *Water Act* for
 - i) a waterworks purpose, or
 - ii) a domestic purpose if the licence is held by or is subject to the control of a water users’ community incorporated under the *Water Act* if the drainage area is not more than 500 km² and the water licence was issued before June 15, 1995 or
- b) an area that is designated as a community watershed under subsection (10).

CONNECTIVITY: A qualitative term describing the degree to which late-successional ecosystems are linked to one another to form an interconnected network. The degree of interconnectedness and the characteristics of the linkages vary in natural landscapes based on topography and natural disturbance regime. Breaking of these linkages results in fragmentation.

CONSENSUS: Generally described as broad agreement. According to the Terms of Reference for the North Coast LRMP, " Consensus is defined as having no substantial disagreement with the decision. Table members may have concerns about specific aspects of the agreement, but can accept that the proposal goes forward and will support the overall plan."

COVER: Features or characteristics of the landscape that allow animals to either reduce the risk of predation and/or avoid extreme temperature (heat or cold including the wind chill) and/or avoid deep snow.

CRITICAL WILDLIFE HABITAT: Part or all of a specific place occupied by a wildlife species population of such species and recognized as being essential for the maintenance of the population. {wetlands, breeding sites (leks, rutting arenas, etc.), birthing sites (calving, spawning, etc.), riparian zones, colonies, rookeries, hibernacula, winter range and over wintering area (caribou, ungulates, trumpeter swam, etc.), caves, talus slopes, avalanche chutes, denning sites, nesting sites and cliffs.}

CROWN LAND: Land that is owned by the Crown; referred to as federal Crown land when it is owned by Canada, and as provincial Crown land when it is owned by a province. Land refers to the land itself and the resources or values on or under it.

CULTURAL HERITAGE RESOURCE: An object, a site or the location of a traditional societal practice that is of historical, cultural or archaeological significance to the Province, a community or an aboriginal people. Cultural heritage resources include archaeological sites, structural features, heritage landscape features and traditional use sites.

CUMULATIVE EFFECTS: Effects on biota of stress imposed by more than one mechanism (e.g., stress in fish imposed by both elevated suspended sediment concentrations in the water and by high water temperatures)

CUTBLOCK: Defined in the *Forest Practices Code of British Columbia Act* as a specific area of land identified on a forest development plan, or in a licence to cut, road permit, or Christmas tree permit, within which timber is to be or has been harvested.

DEACTIVATION (see ROAD DEACTIVATION)

DEFERRED AREA: Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as an area specified in a higher level plan where

- a) timber harvesting or other forest development activities have been postponed for a period of time, or
- b) that the district manager has determined should not be harvested or otherwise be developed until a higher level plan for the area is completed.

DETECTION MONITORING: Entails surveys of occurrence or inventories of abundance that are repeated to detect trends (e.g. are Pine Mushrooms in a given location and how regularly does it fruit?).

ECOLOGICAL RESERVE: Crown land reserved for ecological purposes under the *Ecological Reserve Act* including areas:

- a) suitable for scientific research and educational purposes associated with studies in productivity and other aspects of the natural environment;
- b) that are representative examples of natural ecosystems within the province;
- c) where rare or endangered native plants or animals in their natural habitat may be preserved; and
- d) that contain unique and rare examples of botanical, zoological or geological phenomena.

ECOSECTION: An ecological unit based on climate and physiography.

ECOSYSTEM: A functional unit consisting of all the living organisms (plants, animals and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size — a log, pond, field, forest or the earth's biosphere — but it always functions as a whole unit. Ecosystems are commonly described according to the major type of vegetation, for example, forest ecosystem, or range ecosystem.

ECOSYSTEM INTEGRITY: The soundness or wholeness of the processes and organisms composing the ecosystem. To maintain ecosystem integrity one must maintain functioning, self-sustaining ecosystems with characteristics similar to the original ones.

ENVIRONMENTALLY SENSITIVE AREA: An area identified during a forest inventory that is sensitive to disturbance and/or is significantly valuable for fisheries, wildlife, water and recreation resources.

EVALUATION MONITORING: Examines correlations or cause and effect relations between the sampled object and potentially related variables such as management activities (e.g. studying the effects of Pine Mushroom and timber harvesting on mushroom productivity).

FOREST COVER REQUIREMENTS: Specify desired distributions of areas by age or size class groupings. These objectives can be used to reflect desired conditions for wildlife, watershed protection, visual quality and other integrated resource management objectives.

FOREST DEVELOPMENT PLAN: An operational plan guided by the principles of integrated resource management that details the logistics of timber development, usually over a period of five years. Methods, schedules and responsibilities for accessing, harvesting, renewing, and protecting forest resources are set out to enable site-specific operations to proceed.

FOREST PRACTICES CODE (FPC): Commonly used to refer to the legislation (including the *Forest Practices Code of British Columbia Act* and associated regulations), standards and guidebooks that govern forest practices in BC.

FRONTCOUNTRY TOURISM: Defined by the Ministry of Small Business, Tourism and Culture as any area that is accessible by paved road or is under the influence of paved-road access. Usually refers to roads that areas that are within 1 km of a paved road.

GENETIC DIVERSITY: Variation among and within species that is attributable to differences in hereditary material (DNA).

HABITAT: The place where an organism lives and/or the conditions of that environment including the soil, vegetation, water and food.

HABITAT CAPABILITY: is defined as the ability of the habitat, under optimal conditions to provide life requisites of a species, irrespective of its current habitat conditions. It is the potential of a forested ecosystem under ideal conditions for the wildlife species in question to support that species - the right plant species, forest stand age and stocking rate for each wildlife species. The current stage age is not relevant to a capability assessment, because what is being evaluated is the site series, with the assumption that at some stage it can produce the forage that is required to support the species in question. All forests go through changes, and once a forest has been logged or burned there is a series of well defined stages - herb & low shrub, tall shrub, pole sapling, young forest, mature forest, and old forest. If one of those stages has the ability to provide the necessary forage, then the site series is rated for that value for the species. For example, site series that can produce mixed spruce and aspen forest with open spacing are high capability moose winter habitat; whereas site series that only produce dense pine forests are low capability moose winter habitat.

HABITAT EFFECTIVENESS: is defined as a measure of a species ability to use current or potential habitat conditions. It is an estimate of the effects of human activities, such as roads, fences, recreational uses, industrial developments, settlements, on the usability of the habitat. For example, a watershed may have high grizzly bear habitat capability, moderately high grizzly bear suitability but be rated ineffective because of high road densities and high numbers of recreational user days.

HABITAT MANAGEMENT: Management of the forest to create environments which provide habitats (food, shelter) to meet the needs of particular organisms.

HABITAT SUITABILITY: is defined as the ability of the habitat in its current condition to provide the life requisites of a species. It is the potential of a forested ecosystem in its current state to support a given

wildlife species - the current plant species, current stand age and current stocking rate. It is an estimate of how well current habitat conditions provide the specified life requisites of the species being considered. The suitability of the land is frequently less than the capability because of unfavourable seral conditions or conflicting land use. For example, the high capability caribou winter habitat of mature lodgepole pine forest becomes low suitability winter habitat following clearcut harvesting; or the high capability waterfowl estuary has lower suitability after dredging.

HERITAGE TRAIL: A trail having cultural significance by reason of established aboriginal use or use by early immigrants (see also **CULTURAL HERITAGE RESOURCE**).

HIGH VALUE FISH HABITAT: High-valued fish habitat includes physical components of aquatic ecosystems that are important for the completion of fish life cycles. Alterations of these physical components have the potential to affect fish at the individual and at population levels. In this context, however, the specific management approach relates to the conservation of fish populations. Examples of high-valued fish habitat areas include estuaries, eel grass beds, salmonid and eulachon spawning areas, off-channel rearing habitats.

HISTORIC SITE: A site noted or famous in history.

IDENTIFIED WILDLIFE: defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as those species at risk that the Deputy Minister of Environment, Lands and Parks, or a person authorized by that deputy minister, and the chief forester, agree will be managed through a higher level plan, wildlife habitat area, or general wildlife measure.

IMPACT ASSESSMENT: A study of the potential future effects of resource development on other resources and on social, economic and/or environmental conditions

INTERAGENCY MANAGEMENT COMMITTEE (IAMC): The interagency committee of senior land and resource management officials in each region of the province. The committee is responsible for integrating all resource planning and protected areas work in a region and for setting regional planning priorities.

INTERIOR FOREST CONDITIONS: Conditions achieved at a point where edge effects no longer influence environmental conditions within a patch. The conditions changed usually involve light intensity, temperature, wind, relative humidity and snow accumulation and melt.

KEYSTONE SPECIES: A species that plays an important ecological role in determining the overall structure and dynamic relationships within a biotic community. A keystone species' presence is essential to the integrity and stability of a particular ecosystem.

LAND AND RESOURCE MANAGEMENT PLANNING (LRMP): An integrated sub-regional consensus-based process requiring public participation that produces a Land and Resource Management Plan for review and approval by government. The plan establishes direction for land use and specifies broad resource management objectives and strategies.

LANDSCAPE INVENTORY (SEE VISUAL LANDSCAPE INVENTORY)

LANDSCAPE UNIT: Planning areas established under the *Forest Practices Code of British Columbia Act* by the district manager and based on topographic or geographic features such as a watershed or series of watersheds.

MAINTAIN: To preserve from failure or decline; to cause to continue.

MINERAL: Ore of metal and every natural substance that can be mined and that either is in place where it was originally formed or deposited, or is in talus rock, and includes rock or other materials from mine tailings, dumps and previously mined deposits of minerals, but does not include: coal, petroleum, natural

gas, earth, soil, peat, marl, sand and gravel, and rock and riprap used in the construction of roads, buildings or structures.

MINERAL TENURE: A claim or lease issued under the *Mineral Tenure Act* (= mineral title).

NATURAL DISTURBANCE TYPES: Forest cover types resulting from natural disturbance regimes, such as wildfires, windstorms and, to a lesser extent, insects and landslides. For the purposes of setting biodiversity objectives, five natural disturbance types are recognized as occurring in BC:

- NDT1 Ecosystems with rare stand-initiating events
- NDT2 Ecosystems with infrequent stand-initiating events
- NDT3 Ecosystems with frequent stand-initiating events
- NDT4 Ecosystems with frequent stand-maintaining fires
- NDT5 Alpine Tundra and Sub-alpine Parkland ecosystems.

NATURAL HERITAGE: Means land, water and atmosphere, their mineral, vegetable and other components, and includes flora and fauna on or in them.

NO STAKING RESERVE: There are two types of reserves which are currently in use to manage mineral lands. A “no staking” mineral and/or placer reserve precludes location (staking) of a mineral and/or placer claim. To permit location with specific conditions or restrictions, a “subject to conditions” reserve would be established.

OBJECTIVE: An aim, goal or end of action. Objectives and associated indicators and targets contained in plans provide direction on land use and resource management for the plan area.

Official Community Plan (OCP): General statement of the broad objectives and policies of the local government respecting the form and character of existing and proposed land use and servicing requirements in the area covered by the plan.

OLD GROWTH: Forest that contains live and dead trees of various sizes, species, composition and age class structures. Old growth forests, as part of a slowly changing but dynamic ecosystem, include climax forests but not sub-climax or mid-seral forests. The age and structure of old growth varies significantly by forest type and from one biogeoclimatic zone to another.

OLD GROWTH ATTRIBUTES: Structural attributes and other characteristics of old growth forests, including: large trees for the species and site; wide variation in tree sizes and spacing; accumulations of large dead standing and fallen trees; multiple canopy layers; canopy gaps and understory patchiness; elements of decay such as broken or deformed tops or trunks and root decay; and the presence of species characteristic of old growth.

PROTECTED AREA: A land designation for areas of land and water set aside to protect natural heritage, cultural heritage or recreational values (may include national park, provincial park, or ecological reserve designations).

PROTECTED AREAS STRATEGY (PAS): The Provincial government strategy in place to meet BC’s commitment to develop and expand the protected areas system to protect 12% of the province by the year 2000. 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.

PROVINCIALY SIGNIFICANT SITE: A site which has historic significance for the province. In applying for provincial designation under the *Heritage Conservation Act*, the applicant must demonstrate the provincial significance of the site.

RARE ECOSYSTEMS: Ecosystems are rare when they are restricted in number and areal extent. At the landscape level they are biogeoclimatic site series or surrogates that make up less than 2% of the landscape unit and are not common in adjacent units.

RESEARCH MONITORING: Consists of long term, intensive investigations of basic biological, ecological, and ecosystem management questions (e.g. to understand the impacts of timber harvesting, managers need to understand genetic structure, dispersal mechanisms and reproductive processes and the role of mushrooms in the forest ecosystem).

RECREATION: Any mental or physical revitalization and the voluntary pursuit of leisure activities. Outdoor recreation is recreation that takes place out-of-doors, and forest recreation takes place in a forest or wildland setting.

RED-LISTED SPECIES: Threatened or endangered species as identified by the British Columbia Conservation Data Centre. The taxa on the red list are either extirpated, endangered or threatened, or are being considered for such status. Any indigenous taxon (species or sub-species) threatened with imminent extinction or extirpation throughout all or a significant portion of its range in British Columbia is endangered. Threatened taxa are those indigenous species or sub-species that are likely to become endangered in BC if factors are not reversed.

REFERRAL: The process which by applications for permits, licenses, leases, etc., made to one government agency by an individual or industry are given to another agency for review and comment.

REGIONAL PROTECTED AREAS TEAM (RPAT): The inter-ministry committee in each region that is responsible for conducting the technical inventories and analyses required to identify gaps in the protected areas system, identify areas of interest, consult with the public and propose study areas.

REGIONALLY SIGNIFICANT SITE: A site which has historic significance for a region.

RESOURCE ANALYSIS: The critical examination of resources and environment so as to support planning and decision-making. Resource analysis consists of:

- gathering, examining and interpreting relevant resource-related information;
- organizing and integrating information to assist in developing scenarios; and,
- assessing the impacts of a proposed course of action (scenario).

RESOURCE MANAGEMENT ZONE (RMZ) — FROM REGIONAL OR SUB-REGIONAL PLAN: A division or zone of the planning area that is distinct from other zones with respect to biophysical characteristics, resource issues or resource management direction. Resource management zones may be drawn on a map to describe general management intent. The zones are usually further defined using descriptive objectives and strategies to explain future land use and resource management activities.

RESOURCE VALUE: Values on Crown land which include but are not limited to biological diversity, fisheries, wildlife, minerals, oil and gas, energy, water quality and quantity, recreation and tourism, natural and cultural heritage, timber, forage, wilderness and aesthetic values.

RIPARIAN: The land adjacent to the normal high water line in a stream, river or lake and extending to the portion of land that is influenced by the presence of the adjacent ponded or channelled water. Riparian areas typically exemplify a rich and diverse vegetative mosaic reflecting the influence of available surface water.

RIPARIAN HABITAT: Vegetation growing close to a watercourse, lake, swamp, or spring that is generally critical for wildlife cover, fish food organisms, stream nutrients and large organic debris, and for streambank stability.

RIPARIAN MANAGEMENT AREA: Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as an area, of width determined in accordance with Part 10 of the regulation, that is adjacent to a stream, wetland or lake and consists of a riparian management zone and, depending on the riparian class, a riparian reserve zone.

ROAD DEACTIVATION: Measures taken to stabilize roads and trails during periods of inactivity, including the control of drainage, the removal of sidecast where necessary, and the re-establishment of vegetation for permanent deactivation.

Temporary deactivation includes measures to control drainage and reduce risk of erosion, repair or removal of bridges, and removal of sidecast, where necessary.

Semi-permanent deactivation includes removing stream culverts, enhanced measures to control of drainage and erosion, repair or removal of bridges, and removal of sidecast, where necessary.

Permanent deactivation includes removal of stream culverts and restoration of channel and bank stability, removal of bridge superstructures, enhanced measures to control drainage and erosion, removal of sidecast, and establishment of vegetation.

ROAD RECLAMATION: see Permanent deactivation under **ROAD DEACTIVATION**.

ROTATION: The planned number of years between the formation or regeneration of a forest stand and its final cutting at a specified stage of maturity.

SCENIC AREA: Any visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district manager.

SERAL STAGES: The stages of ecological succession of a plant community. e.g., from young stage to old stage. The characteristic sequence of biotic communities that successively occupy and replace each other by which some components of the physical environment become altered over time.

SILVICULTURAL SYSTEM: A planned program of treatments throughout the life of the stand to achieve stand structural objectives based on integrated resource management goals. A silvicultural system includes harvesting, regeneration and stand-tending methods or phases. It covers all activities for the entire length of a rotation or cutting cycle.

The Forest Practices Code Silvicultural Systems Guidebook identifies six major categories of silvicultural system: five even-aged systems and one uneven-aged system. Even-aged categories include the clearcut, patch-cut, coppice, seed tree and shelterwood systems. Uneven-aged systems are termed selection silvicultural systems.

SILVICULTURE: Silviculture is the art and science of controlling the establishment, growth, composition, health and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of landowners and society on a sustainable basis.

SLASH: The residue left on the ground as a result of forest and other vegetation being altered by forest practices or other land use activities.

SPECIES OF CONCERN: Wildlife species of local concern through not red or blue listed.

STAND: A community of trees sufficiently uniform in species composition, age, arrangement, and condition to be distinguishable as a group from the forest or other growth on the adjoining area, and thus forming a silviculture or management entity.

STAND STRUCTURE: The distribution of trees in a stand, which can be described by species, vertical or horizontal spatial patterns, size of trees or tree parts, age, or a combination of these.

STRATEGIC LAND USE PLANNING: Planning at the regional, sub-regional and, in some cases, at the local level which results in land allocation and/or resource management direction. Strategic land use planning at the regional and sub-regional level involves the preparation of resource management zones, objectives and strategies.

STRATEGIES: Specific management instructions to achieve an objective.

STRUCTURAL ATTRIBUTES: Components of a forest stand (including living and dead standing trees, canopy architecture, and fallen dead trees) which together determine stand structure.

SUBALPINE: Situated in the higher slopes of mountains, just below the timber line.

SUITABILITY: A measure of the current condition of an area to meet the needs of a resource value (e.g., wildlife habitat) or use (e.g., recreation, timber harvesting).

SUSTAINABILITY: A state or process that can be maintained indefinitely. The principles of sustainability integrate three closely interlinked elements — the environment, the economy and the social system — into a system that can be maintained in a healthy state indefinitely.

TIMBER: In terms of industrial logging, any trees or stands of trees that are commercially valuable.

TIMBER HARVESTING LAND BASE (THLB): Crown forest land within the timber supply area where timber harvesting is considered both acceptable and economically feasible, given objectives for all relevant forest values, existing timber quality, market values and applicable technology.

TIMBER SUPPLY AREA (TSA): An integrated resource management unit established in accordance with Section 6 of the Forest Act. TSAs were originally defined by an established pattern of wood flow from management units to the primary timber-using industries.

TOURISM: The aggregate of all business that directly provides goods or services to facilitate business, pleasure or leisure activities away from the home environment.

TRADITIONAL USE SITE: A geographically defined site that has been traditionally used by one or more groups of people for some types of activity. These sites will often lack the physical evidence of human-made artefacts or structures and maintain cultural significance to a living community of people. Traditional use sites are usually documented with the assistance of oral historical or written archival sources. Examples include: sacred sites, resource gathering sites such as berry-gathering grounds and culturally modified trees, and the site of a legendary or past events of cultural significance (See **CULTURAL HERITAGE RESOURCE**).

VISUAL IMPACT ASSESSMENT (VIA): An evaluation of the visual impact of resource development proposals on forest landscape

VISUAL LANDSCAPE INVENTORY: The identification, classification, and recording of the location and quality of visual resources and values.

VISUAL LANDSCAPE MANAGEMENT: The identification, assessment, design and manipulation of the visual features or values of a landscape, and the consideration of these values in the integrated management of provincial forest and range lands.

VISUAL QUALITY: The character, condition, and quality of a scenic landscape or other visual resource and how it is perceived, preferred or otherwise valued by the public.

VISUAL QUALITY OBJECTIVE (VQO): A resource management objective established by the district manager or contained in a higher level plan that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of VQO are commonly used: preservation; retention; partial retention; modification; and, maximum modification.

WATERSHED: An area of land that collects and discharges water into a single main stream through a series of smaller tributaries.

WATERSHED ASSESSMENT: Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as an evaluation of the cumulative impact that proposed activities and developments would have on stream flows, suspended sediment, landslide and stream channel stability within the watershed.

WETLAND: A swamp, marsh or other similar area that supports natural vegetation that is distinct from adjacent upland areas.

WHERE POSSIBLE: Includes the concept of both physical practicality and economic feasibility, unless otherwise indicated.

WILDLIFE: Defined in the *Forest Practices Code of British Columbia Act* as

- (a) a vertebrate that is a mammal, bird, reptile or amphibian prescribed as wildlife under the *Wildlife Act*,
- (b) a fish, including
 - (i) any vertebrate of the order *Petromyzoniformes* (lampreys) or class *Osteichthyes* (bony fishes), or
 - (ii) an invertebrate of the class *Crustacea* (crustaceans) or class *Mollusca* (mollusks) from or in the non-tidal waters of the Province, and
- (c) an invertebrate or plant listed by the Minister of Environment, Lands and Parks as an endangered, a threatened or a vulnerable species, and includes the eggs and juvenile stages of these vertebrates, invertebrates and plants.

WILDLIFE HABITAT: Areas of land and water that support specific wildlife or groups of wildlife.

WILDLIFE TREE PATCH: A stand of trees and other habitat features (e.g., wetland, lick, etc.) deferred from harvest to maintain some habitat requirement for wildlife (e.g., hiding/security cover, thermal cover, nesting, perching, forage, etc.). The size and shape required for a wildlife tree patch will depend on the habitat requirement being provided.

WILDLIFE TREE: Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as a tree or group of trees that are identified in an operational plan to provide present or future wildlife habitat. A wildlife tree is a standing live or dead tree with special characteristics that provide valuable habitat for the conservation or enhancement of wildlife. Characteristics include large diameter and height for the site, current use by wildlife, declining or dead condition, value as a species, valuable location and relative scarcity.

ACRONYMS

AAC	Allowable Annual Cut
AT	Alpine Tundra Zone (a biogeoclimatic zone)
BEO	Biodiversity Emphasis Option
CAMP	Coordinated Access Management Plan
ESSF	Englemann Spruce Subalpine Fir Zone (a biogeoclimatic zone)
FEN	Forest Ecosystem Networks
FN	First Nations
FPC	Forest Practices Code
FRPA	Forest and Range Practices Act
GBCS	Grizzly Bear Conservation Strategy
GBPU	Grizzly Bear Population Units
GIS	Geographic Information Systems
IAMC	Interagency Management Committee
IRM	Integrated Resource Management
LRMP	Land and Resource Management Plan
LU	Landscape Unit
MEM	Ministry of Energy and Mines
MOF	Ministry of Forests
MOU	Memorandum of Understanding
MSRM	Ministry of Sustainable Resource Management
OCP	Official Community Plan
ROS	Recreation Opportunity Spectrum
RMZ	Resource Management Zone
PAS	Protected Areas Strategy
THLB	Timber Harvesting Land Base
TUS	Traditional Use Studies
VQO	Visual Quality Objective
WAP	Watershed Assessment Procedure
WLAP	Ministry of Water, Land and Air Protection

APPENDICES

Appendix 1: Ratification Statements – First Nations

Allied Tsimshian Tribes of Lax Kw'alaams – March 29, 2004

Allied Tsimshian Tribes Association



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March 29, 2004

STATEMENT AT CLOSE OF NORTH COAST LRMP TABLE

1. The Allied Tsimshian Tribes of Lax Kw'alaams ("ATT") attended throughout the NC LRMP process to inform the table participants of its interests and relevant elements of its plan during the LRMP process. Simultaneously, the ATT has been developing a plan for its Traditional Territory.
2. The ATT attended the LRMP process with the understanding that issues regarding ATT's interests that remained unresolved at the conclusion of the LRMP process would move forward to a provincial government to ATT government negotiation for further discussion.
3. Significant issues regarding ATT's interests remain unresolved as the LRMP table process concludes. The ATT looks forward to addressing these issues in a government to government negotiation with the provincial government.

Gixaala First Nation – March 29, 2004

Gitxaala Nation statement to NCLRMP

The Gitxaala Nation has never surrendered its Aboriginal Rights and Title, including but not limited to; Governance, Access, Management, Jurisdiction, Ownership, and Authority of the lands, waters, air, and resources within the Gitxaala Nation sovereign territory.

The Gitxaala Nation and the Provincial government understand that the NCLRMP process is designed to make recommendations to the provincial government which the province will then bring to government to government negotiations and discussions and that this process is without prejudice to Aboriginal Rights and Title.

The Gitxaala government looks forward to ongoing government to government negotiations and discussions regarding the above mentioned subjects and other matters.

Kitselas First Nation – March 29, 2004

Kitselas First Nation Closing Statement to the North Coast LRMP Table March 29, 2004

The Kitselas representatives to the North Coast LRMP are pleased to be here today to present our thoughts on the closing of this phase of the NCLRMP process. We fought hard to be here. At the initiation of this process, we were not afforded a seat at the table. However, we made a strong representation to the Province, which was supported by our fellow Tsimshian First Nations. The Province, to their credit, listened carefully and the result is this day and this opportunity to provide further input to that which Kitselas has provided over the last many months.

Kitselas and First Nations generally have been reluctant to participate in provincial land use planning exercises. The reasons are varied, but two principal reasons are that these processes have not had the desire or the ability to deal with aboriginal rights and titles, nor have First Nation socio-economic circumstances been a factor in the deliberations of the public round table process. In the North Coast planning process, however, the First Nations, DC and the sectoral interests around the table have been able to reach understandings and arrangements that are more supportive of First Nation participation.

The Tsimshian First Nations and the Province have established a policy level connection through the Stewardship Committee and it will be at that forum that the government-to-government dialogue will unfold. Granted, issues related to aboriginal rights, titles and interests remain at the tripartite treaty table. However, this process affords the opportunity to develop certain degrees of certainty, build understandings and relationships and begin to address the current imbalance in socio-economic experience between the First Nations and others in the planning area to the extent that is influenced by land and resource planning and decision-making.

Kitselas takes an interest-based approach to achieving our objectives through a step-by-step process. Our approach aims to use the partnership potential that exists throughout our traditional territory and traditional use areas. We hope to add a unique Kitselas value to these partnerships that will create greater social, economic and cultural wealth that we can share in a more equitable way.

Both historically and currently, Kitselas has used the natural resources in the NCLRMP planning area. These resources are key to our economic and cultural survival. We cannot move to another part of Canada if the resources in our traditional territories and traditional use areas are used up. We are Kitselas, the people of the river. Our language, our practices, our political institutions have evolved with the eco-systems of the north coast and the Skeena. We are not a people without them.

We approached this planning process with a degree of nervousness; however, we believe that, in processes such as these, we are in a position to make a unique contribution. As

Kitselas closing statement March 29, 2004
North Coast LRMP

First Nations, we can play a role as a catalyst and facilitator. We believe that we can bring a unique perspective to the process because of our historical occupancy of these territories. We believe that more than any single government agency or sectoral interest group, we bring a balanced perspective between the economic and environmental pressures that drive these planning discussions. Finally, we bring with us our aboriginal rights and titles. Not for compromise, definition or extinguishment, but to help to influence this process in the best interests of us all.

In April 2003, Kitselas made a comprehensive presentation to the table on our traditional use areas in the NCLRMP planning area. We made that presentation with the greatest degree of respect for our Tsimshian brothers and sisters in Kitkatla, Metlakatla, Gitgaat and Lax Kw'Alaams. Our traditional and contemporary use of the lands and resources in this area is based on intra-nation understandings that go back many centuries. They were and are a reflection of a complex economic, social and cultural system that still survives. The economy however, has changed. We now must re-define our participation in that economy to reflect its 21st century technology and its complexity and also to reflect the fact that over 50% of the people resident in the planning area are not First Nations people. Kitselas does not believe that means we all must be satisfied with less than we need. It does mean that we must cooperate as opposed to compete. We must be creative and ensure that the greatest value possible is produced from our natural and cultural resources. And we must continue to be responsible stewards of the trust that we carry for our children and grandchildren and their children and grandchildren.

Thank you for the opportunity to make this closing statement.

Glenn Bennett
Wilfred Bennett
Morris Mason

Kitsumkalum First Nation – March 29, 2004

KITSUMKALUM



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FIRST NATION OFFICE

COMPREHENSIVE CLAIMS. SPECIFIC CLAIMS. NATURAL RESOURCES.

March 29, 2004.

Kitsumkalum Statement on Completion of the NCLRMP.

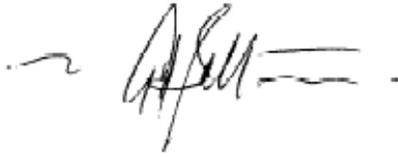
Kitsumkalum participation in the NorthCoast LRMP to ensure that our traditional use areas are properly respected within the planning process and also by our neighboring First Nations in their land use plans. Without derogating from Kitsumkalum First Nations aboriginal rights we support our neighboring first Nations viewpoints on aboriginal rights and title in the NCLRMP area.

- *Kitsumkalum participated in the NCLRMP in accordance with the Terms of Reference and the Tsimshian Accord respecting government to government relationships, and without prejudice to treaty negotiations.*
- *Kitsumkalum presented planning information, ~~planning information~~ as part of the planning Process, for Table and neighboring First Nations information.*

Given this, Kitsumkalum supports this package going forward to government-to-government discussions, as contemplated in the Terms of Reference and the Tsimshian Accord. It is our understanding and expectation that these discussions will include Kitselas and Kitsumkalum in a manner reflective of our participation in the NCLRMP Process itself.

We also support the First Nations claiming title within the planning area including Lax kwa'laams, Metlakatla, Kitkatla, Gitga'at, Kltsao and the Haislu in their quest for resolution on interests which remain unresolved at the conclusion of the LRMP process.

This Statement is intended to express the general intent and understanding of Kitsumkalum first Nation as this provincial planning process is completed. Specifics in this statement may be refined, should legal reasons dictate.



Metlakatla First Nation – March 29, 2004



Metlakatla First Nation

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 Phone (250) 628-3201 Fax (250) 628-9259

March 29, 2004

In anticipation that today would be the last NCLRMP Table meeting, Metlakatla prepared the following statement:

The North Coast LRMP (NCLRMP) process has been a challenging undertaking for all parties, and particularly for First Nations. The Metlakatla First Nation appreciates the opportunity to inform the Table and explain Metlakatla's perspective in the Provincial land use planning process. According to the NCLRMP Terms of Reference, Metlakatla's involvement has been "without prejudice to Aboriginal Rights and Title" on land and resource management and jurisdictional issues.

Metlakatla respects the work of the NCLRMP Table and that the Province will engage in Government-to-Government negotiations on the basis of the NCLRMP results. While there are areas of alignment between the NCLRMP and Metlakatla's land use plan, there is a requirement for the Province and Metlakatla to discuss outstanding issues of importance during the Government-to-Government negotiations.

Metlakatla agrees that the package of results from the NCLRMP deliberations be forwarded for review to the Government-to-Government negotiations.

Metlakatla's role in the additional G-to-G works that the ^{NCLRMP} Table's (added) Terms Table ratification is yet to be determined by Metlakatla.

Haisla First Nation – June 12, 2004



Kitamaat Village Council

HAISLA PO BOX 1101, KITAMAAT VILLAGE BC V0T 2B0 TELEPHONE 639-9361 FAX 632-2840

June 12, 2004

PROVISIONAL HAISLA NATION STATEMENT ON COMPLETION OF NCLRMP

Whereas the ownership and jurisdiction over Haisla's territory within the boundaries of the North Coast Land and Resource Management Plan (NCLRMP) has not yet been resolved with the British Columbia Government;

Whereas the Haisla Nation does not recognize any reference to their territory, as crown land or any such designation;

Whereas the overlap between Haisla and Tsimshian traditional territories and any land and resource use conflicts arising from overlapping land use plans, will be negotiated between the First Nations; and

Whereas the Haisla Nation believes that the NCLRMP is a means by which the British Columbia Government will partially address First Nations meaningful participation in land and resource management, and that this process will continue in other forums such as government to government negotiations and interim measures agreements.

- The Haisla Nation participated in the North Coast Land and Resource Management Plan in accordance with the Terms of Reference respecting government to government relationship, and without prejudice to treaty negotiations.
- The Haisla Nation presented their Land Use Plan and made it readily accessible to all participants of the NCLRMP.
- The Haisla Nation is in the process of presenting the NCLRMP to the Haisla Community in reciprocal manner, and has started to engage in the government to government negotiations.
- Generally, the Haisla Nation has had its zoning interests met by the LRMP recommendations.

Given this, the Haisla representatives supported the March package going forward to government-to-government discussions, as contemplated in the General Protocol Agreement on Land Use Planning and Interim Measures. Haisla representatives also support the current package, but require further clarifications on portions of the plan that

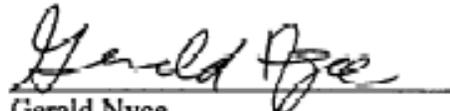
have been moved to implementation and monitoring, and will raise this in government to government.

Endorsement of this plan does not in any way abrogate or diminish Haisla rights and title. The willingness of the Province and Table members to develop Section 1.2.4.1 with the Haisla that discusses Rights and Title issues is a key item in our endorsement. Endorsement is solely focused on portions of the plan area that are within Haisla territory.

The Haisla representatives are signing off on the plan to reflect the general good will and participation of all Table members. At the same time final Haisla ratification will come following community discussions and the government-to-government process with the Province. As such Haisla endorsement should be regarded as provisional ratification.



Whitney Lukuku, RPF
Representative to LRMP



Gerald Nyce
Representative to LRMP

Nisga'a Lisims Government – December 23, 2004

Statement of the Nisga'a Nation

North Coast Land and Resource Management Plan

The Nisga'a Nation's representatives to the North Coast LRMP main table are pleased to give their provisional assessment that the substantive recommendations for management of land and resources set out in the document entitled *North Coast Land and Resource Management Plan: Final Recommendations* appear to be consistent with the provisions of the *Nisga'a Final Agreement* and with current Nisga'a Lisims Government legislation and policy and planning documents pertaining to the North Coast LRMP area, with the following caveat:

Discussions are ongoing between the Government of British Columbia and the Nass Wildlife Committee regarding the Skeena/Nass Grizzly Bear Management Area (GBMA), which lies in part within the Nass Wildlife Area, as specified in the Nisga'a Final Agreement.

However, the Nisga'a Nation is concerned about the treatment accorded in the *Final Recommendations* document to other First Nations' land use plans and assertions of aboriginal rights and title, to the extent that those plans and assertions encroach on the Nass Area, as defined in the *Nisga'a Final Agreement*. To the same extent, the Nisga'a Nation is concerned about the future "government-to-government" discussions and the as yet undefined "government-to-government" component of North Coast LRMP implementation, in which those other First Nations expect to participate.

Nisga'a Lisims Government does not accept that any First Nation other than the Nisga'a Nation has ever had aboriginal rights or title over any part of the North Coast LRMP area within the Nass Area, as specified in the *Nisga'a Final Agreement*. Nisga'a Lisims Government considers any assertion of such aboriginal rights or title by any other First Nation to be illegitimate, and therefore considers the land use plans of any other First Nation to be illegitimate to the extent that they encroach on this area.

Once the *Final Recommendations* document is completed, the document will be submitted to the Executive of Nisga'a Lisims Government for ratification.

Communications

The Nisga'a Nation will be pleased to consider a joint communication with the Provincial Government (based on the statement above), upon final submission of the North Coast LRMP recommendations to Cabinet.

Appendix 2: Ratification Statements – Other Sectors

No other sectors submitted final ratification statements.

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Appendix 3: List of Peer Reviewers for Government Technical Team Reports

All background and resource analysis reports were reviewed by members of the Government Technical Team. .

Table 31 lists the technical experts involved in conducting peer reviews of reports for the North Coast LRMP. This table only includes reports prepared by the Government Technical Team. Reports prepared by the Coast Information Team are not included here

Table 31: Name and affiliation of reviewers of North Coast LRMP reports

RESOURCE VALUE	REPORT TITLE	AUTHOR	REVIEWER	
			NAME	AFFILIATION
Planning General	Background Report: Implementing adaptive management through the NC LRMP	Taylor, B. 2000	Brian Nyberg	Ministry of Forests, Forest Practices Branch, Victoria
	Background Report: Criteria and Indicators briefing paper.	Beasley, B. and P. Wright 2001.		
	Background Report: An EBM planning framework for the NC LRMP.	Holt, R.F. 2001.		NC Forest District
				Ministry of Water, Land and Air Protection
	Background Report: Assessing social and economic considerations in ecosystem-based management,	Wilson, D. 2002	Dr. Murray Rutherford	Assistant professor, Simon Fraser University
Decision Support System: Benchmark Scenario North Coast Landscape Model	Morgan, D., D. Daust and S.A. Fall 2003			
Aquatic and Riparian Ecosystems	CIT's Hydroriparian Planning Guide	CIT HPG Committee	Formal peer review commissioned through the CIT Mgmt Cttee	
			HCG Forestry Consulting;	Commissioned by the Major Forest Companies sector
			Karen Price	Private consultant. Undertook a test application of the HPG: "Testing the Hydroriparian Planning Guide: Report for the NC LRMP and the CIT." Sept

APPENDIX 3: PEER REVIEWERS FOR GTT REPORTS



RESOURCE VALUE	REPORT TITLE	AUTHOR	REVIEWER	
			NAME	AFFILIATION
Aquatic and Riparian Ecosystems (cont'd)				2003.
	Background Report: Aquatic and riparian habitats and values in the North Coast.	Liepins, S. 2003.	Dale Gueret Len Vanderstar	Department of Fisheries and Oceans, Prince Rupert Ministry of Water, Land and Air Protection, Smithes
	Background Report: Eulachon in the North Coast.	Stoffels, D. 2001.	Dale Gueret	Department of Fisheries and Oceans, Prince Rupert
	Background Report: Hydroriparian ecosystems of the North Coast.	Price, K. and D. McLennan 2001.	Len Vanderstar	NC Forest District Ministry of Water, Land and Air Protection, Smithers
	Background Report: Freshwater and Anadromous Fish and Fish Habitat in the North Coast.	Gordon, D. and M. Bahr. 2003.	Dale Gueret	Department of Fisheries and Oceans, Prince Rupert
			Mark Beere	Fish Biologist, Ministry of Water, Land and Air Protection, Smithes
Len Vanderstar Chris Picard			Forest Ecosystem Specialist, Ministry of Water, Land and Air Protection, Smithes Gitga'at FN	
Coarse Filter Biodiversity	Environmental Risk Assessment: Base Case. Coarse Filter Biodiversity Final Report (Mar 2003)	Holt, R.F. and G. Sutherland	Dr. Jim Pojar	B.C. Forest Service, Prince Rupert Forest Region
			Allen Banner	B.C. Forest Service, Prince Rupert Forest Region

APPENDIX 3: PEER REVIEWERS FOR GTT REPORTS



RESOURCE VALUE	REPORT TITLE	AUTHOR	REVIEWER	
			NAME	AFFILIATION
	Terrestrial Ecosystem Mapping of the CDC-listed ecosystems in the North Coast LRMP area (2002).	Ronalds, I. and D. McLennan (Oikos)	Dr. Jim Pojar	B.C. Forest Service, Prince Rupert Forest Region
	Background Report: Natural Disturbance Dynamics on the North Coast.	Dorner, B. and C. Wong. 2002.	Allen Banner Dr. Jim Pojar	B.C. Forest Service, Prince Rupert Forest Region B.C. Forest Service, Prince Rupert Forest Region
Grizzly Bears	ERA Report: Grizzly Bears: Benchmark Scenario Analysis (2003)	Hamilton, A.N. and H. Horn	Wayne McCrory	Private grizzly bear consultant
			Grant MacHutchon	Private grizzly bear consultant
Marbled Murrelets	Environmental Risk Assessment: Base Line Scenario. Marbled Murrelet (2003)	Steventon, J.D.	Dr. Alan Burger	Biological Sciences, University of Victoria
			Louise Blight	MAMU specialist, Ministry of Water, Land and Air Protection, Victoria
			Anne Hetherington	Rare & Endangered Species Bio, Ministry of WLAP, Smithers
Mineral and Energy Resources	Resource Analysis Report: Mineral and Energy resource Analysis Report	Malott, M.L. 2003.	Paul Wojdak	Regional Geologist, Ministry of Energy and Mines, Smithers
Protection	Technical Report: Updated RPAT gap analysis report for the NC LRMP	Stoffels, D. 2002	Dr. J. Pojar	Research Ecologist, Prince Rupert Forest Region
Non-commercial Recreation	Resource Analysis Report: Recreation Opportunity Analysis for the NC LRMP	Stoffels, D. 2001	Matthew LambYorsky	Recreation Officer, NC Forest District
Northern Goshawk	Northern Goshawk Habitat in the North Coast Forest District: Foraging Area and Nest Area Habitat Suitability Models.	Mahon, T., D. Morgan and F. Doyle. 2003	Dr. Erica McClaren	MSRM, Nanaimo & Chair, Coastal Goshawk Recovery Team

APPENDIX 3: PEER REVIEWERS FOR GTT REPORTS



RESOURCE VALUE	REPORT TITLE	AUTHOR	REVIEWER	
			NAME	AFFILIATION
Timber	Background Report: An overview of water based log handling on the NC of BC.	White, E. & Triton Environmental Consultants. 2001.		
	Woodshed Analysis for the NC LRMP: methodology, approach and results. Potential spatial and management implications of cruise ship passenger activity in the development of the NC LRMP.	Forest Licensee Sector. 2003	Dean Daly	Lynx Consultants
Tourism		Ray, R. and P. Williams, SFU. 2003		
Visuals	Resource Analysis Report: Visual Resource Analysis for the NC LRMP	Adair, W. and L. Davies 2002	Matthew LambYorsky	Recreation Officer, North Coast Forest District
Ungulates	Environmental Risk Assessment Base Line Scenario: Mountain Goats	Pollard, B. 2003	Steve Gordon	Water, Land and Air Protection, Skeena Region
			Len Vanderstar	Water, Land and Air Protection, Skeena Region
	Environmental Assessment: Moose	Pollard, B. 2003	Rick Keim	Water, Land and Air Protection, Skeena Region
Cultural Heritage	Methodological Review & Approaches for Local / Traditional Knowledge Research - Briefing Paper	Butler, C. and Menzies C 2002.		
Community Stability	The place of the informal economy in the NC LRMP.	Menzies, C., L.Mattson and C. Butler 2003.	Roger Reid	Economist, Minstry of Water, Land and Air Protection, Victoria
	Economic Development Action Plan	Synergy Mgmt Group Ltd 2003	Kathy Chopik	Economic Development Branch, Ministry of Sustainable Resource Mgmt, Victoria.

Appendix 4: Coast Information Team Ecosystem-Based Management Reports

This Appendix contains web links to specific documents produced by the Coast Information Team that are recommended for use in Section 3.2 An Ecosystem Based Management System for the North Coast:

a) Ecosystem-Based Management Framework:

<http://www.citbc.org/c-ebmf-fin-03May04.pdf>

b) Ecosystem-Based Management Handbook:

<http://www.citbc.org/c-ebm-hdbk-fin-22mar04.pdf>

c) Hydroriparian Planning Guide:

<http://www.citbc.org/c-hpg-final-30Mar04.pdf>

d) Scientific Basis of Ecosystem-Based Management:

<http://www.citbc.org/c-ebm-scibas-fin-04May04.pdf>

Appendix 5: Priority projects for adaptive management and inventory gathering

Priorities for adaptive management

> To be determined by the LRMP Monitoring Team <

Resource Value and LRMP reference	Issue	Indicators	Action	Timeline

Priorities for inventory gathering

> To be determined by the LRMP Monitoring Team <

Resource Value and LRMP reference	Required information/ inventory

Appendix 6: Management Direction To Be Finalized Through Implementation

This Appendix contains those elements from Chapter 5: General Management Direction for which recommendations could not be finalized by the LRMP Table. The process for finalizing these items is described in Section 3.2.8: Finalization of GMD Under Development. Unshaded items in the following tables have been agreed to by the LRMP Table. Only the items shaded grey require further discussion. The shaded items are the last version of the item discussed, but not agreed to, by the LRMP Table

6.4 Aquatic and Riparian Ecosystems

Objective	Implementation indicator(s)	Target(s)	Management considerations
1. Maintain water quality and quantity within the range of natural variability.	1a. Number of incidents of possible development related erosion and/or slope failures.	No incidents	Consider activities that create risk of erosion and slope failure. In order to mitigate the effects of erosion related to multiple active roads, avoid development that simultaneously modifies both sides of streams. Dual development could be mitigated by more riparian protection.
	1b. Established stations for benthic invertebrate monitoring and assessment	Control or reference stations established by the year 20xx. Stations that monitor development effects established by the year 20xx for high priority watersheds. Stations that monitor undeveloped watersheds to be established prior to operations commencing.	Benthic invertebrate monitoring and assessment tools are available. These tools are used within context of a landscape level impact ranking system. The tools require reference stations in a range of sites, from pristine to highly developed, by aquatic ecosystem. High priority watersheds are top-ranking high risk watersheds (i.e. unstable terrain, forestry activity and high value fish habitat). Programs generally are result of partnerships between government and developers. This indicator will enable indicator 1c which should replace indicator 1a as monitoring stations are established.
	1c. Abundance and	No change beyond natural condition.	Benthic invertebrate monitoring and

Objective	Implementation indicator(s)	Target(s)	Management considerations
	occurrence of benthic invertebrates Note: this indicator will apply when benthic invertebrate monitoring is possible as a result of implementation of indicator 1b.	Level 1 and 2: Change beyond natural condition permitted within confines of adaptive management experiments to test ecosystem response to increased development pressure.	assessment should be preceded by geoscience work which mitigates risk. The assessment process provides feedback regarding the effectiveness of mitigation strategies employed. As benthic invertebrate abundance and occurrence vary beyond natural condition, operational response should include intermediate steps so that management consequences (such as restoration of hydriparian functions) increase as divergence from the natural condition increases.
2. Maintain the productive capacity of all high value fish habitat ⁸⁵	Percent of high value fish habitat by watershed ⁸⁶ unmodified by human activities.	100% of high value fish habitat unmodified unless no reasonable alternative exists. Level 2 risk management: Where no reasonable alternative exists to development, developers must be in compliance with the existing legislation and must identify risk from development and identify, implement and monitor mitigation strategies commensurate with the level of risk. This may include foregoing development. Compensation and remediation may be required consistent with the DFO policy of no-net loss.	Watershed level inventory of high value habitat could inform development-planning processes in advance. Existing inventories of fish and fish habitat should be amalgamated into a single, user-friendly database and made readily accessible to resource developers and other interests. High value fish habitats are habitats that are important to the viability of a particular stock or population of fish. They include: Include examples from 1-year transition Productive spawning beds for salmonids, eulachon, or other fish, Productive rearing and over-wintering habitats

⁸⁵ An understanding of the ecological functioning of the fisheries ecosystem is required to identify critical habitats. Some spawning, rearing, highwater refuge or overwintering habitat may not be designated as critical habitat if changes to such habitat are not expected to alter the productive capacity of the fisheries ecosystem.

⁸⁶ Watersheds boundaries are defined on Map 4.

Objective	Implementation indicator(s)	Target(s)	Management considerations
			<p>and high-water refuge areas, and</p> <p>Immediate riparian areas bordering the important aquatic habitats listed above, that are integral to aquatic structure and function and from which there may be impacts to the natural levels of temperature, water quality, sedimentation and bank stability as a result of development.</p> <p>Encourage programs to educate public about damage to spawning habitat through recreational and tourism activities.</p> <p>Forested habitat upslope of high value fish habitat may be important to maintaining the productive capacity of habitat.</p> <p>Limiting access may be important to maintaining local fish populations.</p> <p>Conduct fish presence and habitat inventories prior to development , if industrial development results in the loss of fish habitat as defined under DFO policy, the concept of no net loss over time through the use of replacement or compensatory mechanisms will be followed.</p> <p>Protect and restore freshwater fish populations and habitats. Maintain high quality fish habitat in watersheds with abundant salmon populations and sustain adequate levels of adult returns and population age structure of aquatic species.</p>

Objective	Implementation indicator(s)	Target(s)	Management considerations
<p>3. Sustain natural healthy ecological functioning of the complete range of the hydroriparian ecosystems.</p>	<p>Indicators and targets are identified below for the following types of hydroriparian ecosystem:</p> <ul style="list-style-type: none"> a. Estuarine ecosystems b. Lakes c. Wetlands d. Floodplains, fans and forested swamps e. Tailed frog habitat f. Important wildlife habitat g. Fish-bearing streams h. Streams dependent on large organic debris i. All other hydroriparian areas j. Hotsprings and related ecosystems f. g. Marine shorelines, shores of large lakes and rivers h. wetlands associated 	<p>The following general provisos apply to all hydroriparian ecosystems:</p> <p>Risk Avoidance:</p> <p>The lowest risk to hydroriparian areas occurs by not developing them at all. Any development within hydroriparian ecosystems will trigger a risk-managed approach (see below).</p> <p>Risk Managed Approach:</p> <p>Where development occurs within a hydroriparian ecosystem, a risk-managed approach will be applied, whereby ecosystem values are identified on the site prior to development and managed to minimize risk to the range of ecosystem values, including the following:</p> <ul style="list-style-type: none"> o Important fish and wildlife habitats⁸⁷, including high value wildlife trees, within the riparian forest are not degraded. o Natural levels of coarse woody debris and recruitment are not compromised. o Suitable habitat for tailed frog to be fully maintained. 	<p><i>Wildlife</i></p> <p>In headwater reaches, and non-fish streams amphibians can be the dominant vertebrate predators. The degree to which amphibian streams are buffered is a factor that influences the abundance of amphibians.</p> <p>Invertebrate species assemblages of non-fish streams including ephemeral streams can differ greatly from those of fish streams.</p> <p>Hydroriparian areas are natural corridors for wildlife movements.</p> <p><i>Coarse Woody Debris</i></p> <p>May need to develop procedures to identify streams dependent on downed wood. Consideration of dependency should be based on the stream’s fullest geomorphologic maturity, and not necessarily the current development stage of a stream immediately following a landslide.</p> <p>In stream channels dependent on downed wood, or with naturally unstable banks, manage streamside activities to maintain windfirm buffers and maintain natural rates of downed wood stream introductions.</p>

⁸⁷ In general hydroriparian areas are viewed as important wildlife habitats however some key elements within this zone are more readily identifiable than others, thus management strategies directed to protect these particular elements are recommended as a minimum when development is to occur. Important areas include but are not limited to high value wildlife trees⁸⁷, raptor nests, heronries, and areas of concentrated use as evidenced by wildlife sign including: den sites, defined large mammal game trails (particularly those confined by topography), bear mark trails, mark trees, bear fishing locations, ungulate winter range, mineral licks. Also included are forage sites or breeding habitats for blue- or red-listed species such as tailed frog streams, and critical spring forage microsites for grizzly bears.

Objective	Implementation indicator(s)	Target(s)	Management considerations
	with marind shoreline –	<ul style="list-style-type: none"> ○ Protect all “at risk” ecosystems^{88*} 	<p>Developers will demonstrate due diligence to the extent that they assess the hydroriparian ecosystem in advance of development and protect and buffer important habitats and ecosystem elements.</p> <p>Qualified professionals are to conduct geoscience, windthrow and wildlife assessments to ensure negative impacts are avoided or alternatively to develop mitigation strategies.</p> <p>*Links to the GMD for Tourism and Non-Commercial Recreation.</p>
	3a. Amount of development-related modification of estuarine ecosystems ⁸⁹	<p>100 % unmodified, unless no reasonable alternative exists Where no reasonable alternative exists, development may proceed consistent with the following targets and the general provisos above:</p> <p>i. Within wetted estuary and associated natural opening where important fish and/or wildlife habitat occurs:</p> <p>If development must proceed, incur a Level 2 assessment before proceeding. Major projects require full environmental impact assessment, the outcome of which may include foregoing</p>	

⁸⁸ As defined in section 2.3 Coarse Filter Biodiversity, and including hot springs, karst and limestone.

⁸⁹ Estuarine ecosystems are defined as “the entire natural opening (i.e., area with < 10% tree cover) associated with the wetted portion of the estuarine wetland plus 1.5 lengths of forest from the edge of the opening.”

⁹⁰ The term “sub-region” refers to the following groupings of eco-sections: (a) Hecate Lowlands; (b) Nass-Kitimat Ranges; (c) Southern Boundary Ranges – Meziadin Mountains.

⁹¹ Watershed boundaries are shown on Map **Error! Main Document Only.**

Objective	Implementation indicator(s)	Target(s)	Management considerations
		<p>development.</p> <p>ii. Within the 1.5 tree lengths of riparian forest adjacent to the wetted portion of the estuary and associated natural opening:</p> <p><3 % deviation from natural amount of riparian forest in each sub-region⁹⁰</p> <p><10% deviation from natural amount of riparian forest in each watershed⁹¹</p> <p>Developers must be in compliance with the existing legislation and must identify risk from development and identify, implement and monitor mitigation strategies commensurate with the level of risk.</p>	
	<p>3b. Amount of development-related modification of lake ecosystems.</p>	<p>Consistent with the general provisos for applying risk-managed targets noted above:</p> <p>In the interim, before lake classification occurs and as a baseline of management:</p> <p>i. Within lakes:</p> <p>Where high valuefish habitat occurs, manage to risk avoidance (100% unmodified) unless no reasonable alternative exists. If development must proceed, incur a Level 2 assessment before proceeding. Major projects require full environmental impact assessment, the outcome of which may include foregoing development.</p> <p>ii. Adjacent to lakes 5 – 60 ha in size:</p> <p><i>Not yet resolved.</i></p> <p>iii. Adjacent to lakes > 60 ha in size:</p> <p>Maintain a 30 – 50 m –windfirm buffer.</p>	<p><i>Lakes:</i></p> <p>There is a need for a lake classification on the North Coast. One of the outcomes of lakes classification will be an identification of appropriate levels of management to maintain lake values. In the absence of fish inventory, the province shall classify lakes, by applying the precautionary approach for lakes having the potential of containing fish.</p> <p>Development within or adjacent to lakes should be preceded by inventory of high value fish habitat (as per Obj. 1), aquatic values and sensitive areas, including osprey and eagle nest sites.</p> <p>Manage lakeshore areas to prevent soil degradation, develop and implement management strategies that maintain lakeside riparian forest habitat values (as distinct from</p>

Objective	Implementation indicator(s)	Target(s)	Management considerations
		<p>Within this buffer maintain > 70% of natural riparian forest (i.e., < 30% deviation from natural). Buffering will be accompanied by a site assessment by a qualified professional that will incorporate adjacent wildlife values and prescribe appropriate management to maintain those values. This may include defining a reserve area around the lake that exceeds existing baseline requirements</p>	<p>hydroriparian buffers), including wildlife access/forage/nesting/denning and safety cover requirements.</p> <p>Large culturally modified trees (CMTs) located along major shorelines are often also considered high value wildlife trees.</p> <p>Buffers have been identified for wetlands as an approximation of the hydroriparian ecosystem.</p>
	<p>3c. Amount of development-related modification of wetland ecosystems.</p>	<p>i. Within wetlands: Where high value fish habitat occurs, manage 100% unmodified unless no reasonable alternative exists. If development must proceed, incur a Level 2 assessment before proceeding. Major projects require full environmental impact assessment, the outcome of which may include foregoing development.</p> <p>ii. Within the natural riparian forest associated with wetlands, other than large wetland complexes: Maintain a wind firm buffer. Within this buffer, maintain >70% of natural amount of riparian forest at a watershed⁹² scale. Buffering will be accompanied by a site assessment by a qualified professional that will incorporate adjacent wildlife values and prescribe appropriate management to maintain those values using common sense and</p>	<p><i>Wetlands:</i> Wetland hydroriparian ecosystems are defined as the wetland, surrounding clearing (<10% tree cover) and associated riparian forests. In general wetlands are viewed as important wildlife habitats, however some key elements within this zone are more readily identifiable than others. For this reason, management strategies may be specifically directed to protect particular elements when development is to occur. Important elements include, but are not limited to, high value wildlife trees, raptor nests, heronries, and areas of concentrated use as evidenced by wildlife sign including: den sites, defined large mammal game trails (particularly those confined by topography), bear mark trails, mark trees, ungulate winter range, mineral licks. Also included are forage sites or breeding habitats for blue- or red-listed species such as critical spring forage microsites for grizzly bears.</p>

⁹² Watershed boundaries are defined on Map Error! Main Document Only..

Objective	Implementation indicator(s)	Target(s)	Management considerations
		<p>these values using common sense and flexibility.</p> <p>iii. Adjacent to large wetland complexes: To maintain a 50m – 70m windfirm, forested buffer adjacent to the following large wetland complexes: Georgie River; Sutton River/ Kshwan River; Alice Arm/ Dak River; Stagoo Creek; Kwinimass River/ Lachballac Lake; Ecstall River/ Sparkling Creek; Johnston Creek; Quall River; Paril River; Goat River; and Triumph River. Buffer width will be identified through site level assessment by a qualified professional and will incorporate adjacent values and requirements to maintain wetland values. This may include defining a reserve area around the wetland that exceeds existing baseline requirements. <i>Management within buffer adjacent to large wetland complexes is still unresolved.</i></p>	<p>Buffers have been identified for wetlands as an approximation of the hydroriparian ecosystem.</p>
	<p>3d. Amount of development-related modification of floodplains, fans and forested swamps.</p>	<p>100 % unmodified unless no practicable alternative exists. Where no reasonable alternative exists, development may proceed consistent with the following targets and the general provisos above:</p> <p>i. Low bench floodplains and fans: Where no practicable alternative exists, manage to < 10% deviation from natural</p>	<p>Road crossings and rights-of-way widths on floodplain should be minimized; modifications of active fans are to be avoided. Floodplains and channels rely on transportation of CWD from up-slope areas or streams. See the HPG for further guidance. Roads on active floodplain and across active fans, must be guided by geoscience assessments which ensure that natural alluvial</p>

Objective	Implementation indicator(s)	Target(s)	Management considerations
		<p>amount of riparian forest cover equally distributed throughout the riparian forest of floodplains and fans, respectively. If area is already modified, may proceed with development as long as (a) Level 2 assessment is undertaken, (b) strategies are implemented to avoid/mitigate risk, and (c) any incremental modifications are restored by the proponent (no net loss of fish or wildlife habitat).</p> <p>ii. Medium and high dry fluvial benches of floodplains and fans <i>Not yet resolved</i></p> <p>iii. Forested swamps <i>Original GMD proposes management as per floodplains and fans.</i></p>	<p>processes are maintained.⁹³</p> <p>Forested swamp – wooded mineral wetland or a wooded peatland with standing or gently flowing water in pools and channels. The water table is usually at or very near the surface. Waters are nutrient-rich.</p>
	<p>3e, f, g, h, i. Amount of development-related modification of the following hydroriparian ecosystems: e. Tailed frog habitat</p>	<p>Consistent with the general provisos noted above: Proposed GMD: Re tailed frog habitat: Re important wildlife habitat:</p>	<p>Hotsprings are poorly studied and poorly understood ecosystems. In the NC none have been studied as elements of biodiversity value. Note: Development of hotsprings for recreational objectives may not be compatible with protection of ecosystem function.</p>

⁹³ See MoF Extension Note #30, *Tributary Alluvial Fans* (Wilford, 1998) and Wilford, Dave. 1999. *A strategy for forest management and restoration on alluvial fans in the Prince Rupert Forest Region*. MoF BC.

⁹⁴ Coast Information Team - *Hydroriparian Planning Guide*, Draft Jan 30 2004, page 8. Watershed boundaries are defined on Map **Error! Main Document Only..**

⁹⁵ Watershed boundaries are defined on Map 4.

Objective	Implementation indicator(s)	Target(s)	Management considerations
	<p>f. Important wildlife habitat</p> <p>g. Fish-bearing streams</p> <p>h. Streams dependent on large organic debris</p> <p>i. All other hydroriparian areas</p>	<p>Risk Avoidance:</p> <p>100% unmodified for:</p> <p>Tailed frog habitat</p> <p>Fish bearing streams</p> <p>Streams dependent on coarse woody debris</p> <p>0 – 100% unmodified for all other streams as long as important wildlife habitats within the hydroriparian ecosystem are not degraded.</p> <p>Level 1:</p> <p>Level 1 target for all hydroriparian components:</p> <p>70 – 100% unmodified in a watershed⁹⁴</p> <p>For hydroriparian ecosystems if Level 1 targets cannot be met, developer must identify risk from development and identify and implement mitigation strategies. Monitoring of outcomes may be appropriate.</p> <p>Level 2:</p> <p>Low risk cannot be exceeded for:</p> <p>Watershed⁹⁵ Level Targets for all hydroriparian components: 70 – 100% unmodified</p> <p>For other hydroriparian ecosystems, if Level 1 targets cannot be met, the developer must identify risk from development and identify and implement mitigation strategies.</p> <p>Monitoring of outcomes might be appropriate</p>	

Objective	Implementation indicator(s)	Target(s)	Management considerations
	3j. Amount of development related modification of hotsprings and related ecosystems.	<p>Level 1: Level 1 target for all hydroriparian components: 70 – 100% unmodified in a watershed⁹⁶</p> <p>Level 2: Low risk cannot be exceeded for: Hotsprings</p>	<p>Note: Wording proposed by sub-group: "Geothermal energy development (geothermal resources used for electricity generation or heating) is not appropriate around recreational hotsprings due to their high recreational and ecological values. However, geothermal energy development may occur elsewhere consistent with objectives and targets in the GMD sections and with a minimum Level 2 assessment of ecological values."</p>
	3k. Impact of development activities on heronries, raptor nests, territories or reproductive success.	<p>Consistent with the general provisos for applying risk-managed targets noted above: Proposed GMD:</p> <p>Risk avoidance: No impact within 200m⁹⁷ of marine, large lake and large river⁹⁸ shorelines.</p> <p>Level 1 Management: The Risk Avoidance Target may be exceeded and development may occur as long as the following conditions are met: Important habitats, including high value wildlife trees, and areas adjacent to estuaries and tidal narrows, are not degraded. Protect and buffer all nest trees; and maintain a broad distribution of the largest suitable</p>	<p>Areas favoured by nesting and foraging eagles include forest adjacent to estuaries, tidal narrows, lagoon shorelines and other areas of restricted tidal flushing.</p>

⁹⁶ Coast Information Team - *Hydroriparian Planning Guide*, Draft April 30 2003. Watershed boundaries are defined on Map 4.

⁹⁷ Bunnell, F., B. Booth, and A. Farr. No date. *Bald Eagles and Forestry*. (Pamphlet) Faculty of Forestry, University of BC.

⁹⁸ Large lakes (>1000ha), large rivers (>=100m average channel width i.e. Skeena, Ecstall, and lower sections of major tributaries to the Skeena

Objective	Implementation indicator(s)	Target(s)	Management considerations
		<p>trees on site to provide nest tree recruitments and perches.</p> <p>Reproductive success is not impacted through development disturbance.</p> <p>Level 2 Management:</p> <p>If conditions cannot be met, developer must identify risk from development and identify and implement mitigation strategies.</p> <p>Monitoring of outcomes may be appropriate.</p>	

6.6 Coarse Filter Biodiversity

On-the-ground objective	Indicator(s)	Management Target	Management considerations
<p>1. To maintain representation of old forest ecosystems by site series and/or groupings by BEC variant⁹⁹, and in consideration of traditional ecological knowledge, throughout the plan area.</p>	<p>Ratio (%) of existing to expected spatial extent of each ecosystem grouping in old growth condition.</p>	<p>Manage according to the following transitional target for old growth retention and representation at the landscape scale for the period of one year commencing ???</p> <p>30% of RONV for very common/common site series groupings; 70% of RONV for modal, uncommon and rare site series groupings (see Appendix 7, Table 34).</p> <p>EBM Science Team to assess these targets during the one year period.</p> <p><i>Targets in EBM Handbook will then be reconsidered. Unresolved what will happen at end of the one year period.</i></p>	<p>It is incumbent on the developer to use existing site series and structural stage mapping (e.g., TEM or PEM) to quantify the spatial extent of each grouping of site series in various seral stages, or implement new mapping.</p> <p>The existing PEM groups some site series, as shown in Appendix 7, Table 36, because they are not readily distinguished using the source inventories. Each group may be considered a site series for the purpose of tracking representation).</p> <p>Threshold in “watersheds” may be lower to allow flexibility in harvest planning in some</p>

⁹⁹ Table 35 lists the Forest Cover inventory age classes eligible for old growth definition by BEC site series.

On-the-ground objective	Indicator(s)	Management Target	Management considerations
			<p>individual watersheds. The LU threshold would have to be met by reduced harvesting in other watersheds.</p> <p>Targets for old seral retention outside of Protection Areas may be met through:</p> <ul style="list-style-type: none"> • spatial / temporal scheduling of forestry activities • zoning of Old Growth Management Areas • silviculture to encourage regeneration of redcedar, yellow-cedar and Sitka spruce in the appropriate site series • variable retention (such stands can contribute to the spatial extent of old-growth in direct proportion to the spatial extent of old-growth canopy retained)
<p>2. To promote the recovery of structural and functional characteristics of old forest in each site series/ and/or site series surrogate within managed landscapes.</p>	<p>2a. Number of site series and/or site series surrogate having less than 70% retention of old forest by Plan Area.</p>	<p>Progressive reduction in number of site series below targets for old seral retention by site series.</p>	<p>Some operational approaches for these site series/ and/or site series surrogate are:</p> <p>No harvesting</p> <p>Increased rotation length, especially for sites already harvested</p> <p>Silviculture to promote regeneration of redcedar, yellow cedar and spruce</p> <p>Thinning of second growth forest to promote gaps, coarse woody debris and other structure.</p> <p>Developing old-growth recovery curves.</p>

On-the-ground objective	Indicator(s)	Management Target	Management considerations
	2b. Management activities performed to retain old forest ecosystems, and promote characteristics of old forest.	Ongoing record, by watershed, of activities performed.	
3. To maintain a frequency distribution of seral stages over time that is generally consistent with the natural disturbance regime.	<p>Proportion (%) of mid-seral forest (i.e. 25 to 100 year old) by site series by BEC variant</p> <p>This to be calculated at various spatial scales (see Targets).</p>	<p>Low Risk Threshold</p> <p><u>Landscape Unit</u> Maximum: 17%¹⁰⁰</p> <p><u>“Watershed”</u> Maximum: 17%</p> <p>Risk Managed Target</p> <p><u>Landscape Unit</u> Maximum: 50%</p> <p><u>“Watershed”</u> Maximum: 50%</p> <p>Progressive decline over time in proportion of mid-seral stage forest by site series by BEC variant, within each Landscape Unit and/or “watershed”.</p>	<p>Where low risk thresholds are already exceeded or are projected to be exceeded, operational activities within the risk-managed strategy may include:</p> <p>Deferred future harvesting within the site series</p> <p>Silvicultural thinning to promote understorey growth, uneven-aged stand development and increased structure</p> <p>(See also Section 5.8: Grizzly Bears)</p>
4. Maintain mature and old forest linkages within and	Number of development activities that incorporate and address	All development activities.	Connectivity design requires a watershed level assessment by qualified professionals that:

¹⁰⁰ This Threshold represents 70% of the natural mid-seral distribution expected under a mean return interval of 700 years. Risk Managed Target is from the Ecosystem Management Handbook (Oct 2003) Table 5.1.

On-the-ground objective	Indicator(s)	Management Target	Management considerations
<p>between hydroriparian and upland areas at a watershed level.</p>	<p>ecosystem connectivity issues.</p>		<p>that:</p> <ul style="list-style-type: none"> builds on existing configuration of old forest reserves (e.g. riparian reserves, wildlife tree patches) and areas reserved for other values, such as red and blue-listed ecosystems, wildlife habitat maintains interior forest condition within major linkage corridors maintains natural levels of windthrow. Some level of modification could occur within connectivity linkages as long as their structure and function are not compromised. Features to retain include security cover for wildlife, old growth elements (i.e. wildlife trees and coarse woody debris) and rare, threatened or endangered plant communities Where possible, connectivity should be re-established where diminished through past development
<p>5. Identify and reserve key wildlife migration/movement corridors.</p>	<p>Number of identified and reserved key wildlife migration/movement corridors</p>	<p>Still under development at LRMP deadline - to be finalized through implementation as described in Section 3.2.8</p>	<p>Identify and protect functional levels of habitat, travel migration corridors and breeding grounds</p> <p>Ongoing inventory and monitoring of wildlife migration corridors.</p>

On-the-ground objective	Indicator(s)	Management Target	Management considerations
<p>6. To maintain the structural and functional integrity of rare ecosystems including those red and blue-listed by the BC Conservation Data Centre.</p>	<p>6a. Spatial extent (ha) of red-listed plant communities.</p>	<p>No reduction in area (ha) of red-listed (plant communities as per the CDC ecosystem definitions over time¹⁰¹.</p>	<p>Tactical and operational planning should include assessment of potential development for inclusion of rare ecosystem types, and subsequent exclusion of these ecosystems from the area affected. (definition of rare ecosystems will be finalized by the EBM Science Team as per 3.2.9)</p> <p>Management of riparian ecosystems (e.g., floodplains) will contribute to achievement of objectives for red- and blue-listed ecosystems.</p>
	<p>6b. Spatial extent (ha) of individual blue-listed plant communities other than CWHvm1/08 (BaSs-Devil’s Club)</p>	<p>Low Risk Target¹⁰²: 0-30% reduction in area of individual blue-listed ecosystems Risk Managed Target: None</p>	<p>Low risk target to be applied individually to blue-listed plant community other than the relatively common blue-listed plant community: CWHvm1/08 (BaSs-Devil’s Club)</p>
	<p>6c. Spatial extent (ha) of individual blue-listed plant communities classified as CWHvm1/08 (BaSs-Devil’s Club)</p>	<p>Low Risk Target: 0-30% reduction in area Risk Managed Target: <i>Agreement to have a risk-managed target that exceeds 30% reduction in area. Actual target still to be determined based on inter-sectoral negotiations</i></p>	
	<p>6d. Degree of alteration in red- or blue-listed</p>	<p>No alteration beyond that allowed under the Risk Managed Target for spatial extent of</p>	<p>Recommend a no development appropriate windfarm buffer adjacent to each red- or blue-</p>

¹⁰¹ Target from Ecosystem Based Management Planning Handbook (Oct 2003) Table 6.1

¹⁰² Low risk target from Ecosystem Based Management Planning Handbook (Oct 2003) Table 5.1

On-the-ground objective	Indicator(s)	Management Target	Management considerations
	in red- or blue-listed plant community structure and function.	Risk Managed Target for spatial extent of blue-listed plant communities.	windfirm buffer adjacent to each red- or blue-listed ecosystem polygon to avoid windthrow in the ecosystem. Consider other mitigative measures to avoid negative impacts such as partial harvesting, and location of old growth management areas.
7. Maintain the structural and functional integrity of Karst ecosystems	Spatial extent (ha) of karst ecosystems.	Low Risk Target: No reduction in spatial extent (ha) of karst ecosystems. Risk Managed Target: <i>No wording suggested by WG</i>	An inventory of karst landforms is available.
8. To retain sufficient structural attributes within harvested areas to maintain substantial habitat quality and species diversity through a rotation.			
	8b. Size (ha) of groupings of stand level retention, to provide windfirmness, habitat needs and interior conditions, within cutblocks > 40 ha.	Minimum 1 ha ¹⁰³	These larger wildlife tree patches and/or reserves to include special habitat elements (dens, hibernacula, cavities, etc.) where possible.
9. To allow the ecosystem processes of colonization, dispersal,	Area (ha) subject to forest harvesting for industrial purposes on small islands (<300 ha).	0 ha	

¹⁰³ This target from general inference by GTT biologists regarding ability to maintain interior conditions in respect to windthrow and bear denning needs.

On-the-ground objective	Indicator(s)	Management Target	Management considerations
reproduction and survival on islands to continue within their natural range of variability.	small islands (<300 ha).		
10. To minimize potential for erosion and sedimentation.	Total area (ha) of slope failure associated with development activities.	No new slope failures associated with development.	<p>Development should not proceed in areas with a class 4 or 5 terrain rating without a detailed terrain stability field assessment.</p> <p>Apply due diligence to minimize the occurrence of slope failures associated with development activities.</p> <p>(See also Section 5.4: Aquatic and Riparian).</p>
11. Maintain natural species assemblages and prevent the introduction of exotics.	Number and extent of exotic species.	<p>No introduction of exotic species, including plants, non-native fish species or wildlife.</p> <p>Minimize the spread of existing exotic species where possible.</p>	Silviculture techniques, including erosion control measures (grass seeding), should use only native species where available.
12. Designate and protect known critical wildlife habitat features vital to a variety of species			<ul style="list-style-type: none"> • Identify known critical wildlife habitat features at the landscape or stand level prior to resource development and incorporate their management and protection. • If a previously unidentified critical wildlife habitat feature is discovered during development, incorporate their management and protection. • Minimize road induced displacement and mortality risk within or adjacent to critical

On-the-ground objective	Indicator(s)	Management Target	Management considerations
			habitats. • Monitor herbicide application in areas containing critical wildlife habitat features. The Science Team and the Province will periodically determine the status of critical habitat for wildlife, complete an analysis of how EBM is meeting critical habitat objectives .

6.8 Grizzly Bears — Population Management Objective

Population objective	Indicator(s)	Target(s)	Management considerations
1. To maintain the diversity and abundance of Grizzly Bears in the North Coast LRMP area.	1a. Estimated density of bears in each GBPU sub-population within the North Coast, based on inventory or estimates of habitat effectiveness ¹⁰⁴ .	\geq the 2003 estimate of bear density by GBPU + a buffer of 5 bears/ 1000km ² (Table 15, Column 6 in Section 5.8 Grizzly Bears).	Ongoing inventory and monitoring is essential to ensure the achievement of population targets. Future population estimates may vary based on new research and information becoming available. If populations fall below current minimum estimates for the GBPU as a whole, managers should undertake coordinated management with planning areas outside of the North Coast LRMP.

¹⁰⁴ *Habitat effectiveness*, considers the usability of the habitat by looking at factors beyond the biophysical capability and suitability of the land e.g., level of human use, degree of roadedness.

Population objective	Indicator(s)	Target(s)	Management considerations
	1b. Legal mortality levels (i.e., Limited Entry Hunt and guide outfitter allocation).	Bear mortality from all human causes not to exceed 4% of the estimated population; Less than 30% of bear mortality is female; and Total kill is not area-concentrated (i.e., it needs to be distributed across landscape units within the area open to hunting). Outside of Grizzly Bear Management Areas, hunting is only to occur where bear populations are stable or increasing.	

6.8 Grizzly Bears — Land Based Management Objectives

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
Access			
1. To minimize mortality risk to bears related to motorized road access at the watershed scale.	1a. Density of roads accessible to two-wheel drive vehicles by “watershed”. ¹⁰⁵	<p>Low Risk Target: Deactivation of all shore-accessible roads once operations become fallow.</p> <p>Risk managed target: To exceed the Low Risk Target, the developer must implement strategies to minimize or mitigate risk to bear mortality</p>	<p>Promote one-side development ie., road construction on one side of a valley at a time. Consider closing access in sub-basins of important grizzly bear river valleys for 50 years after stands reach the free-to-grow stage (i.e., rotate forest activity among several sub-basins).</p> <p>Levels of public road access should be managed to be consistent with Objective 7 re carrying capacity for rec/tourism use in grizzly bear areas.</p> <p>Provide windfirm visual screening along roads to provide security consistent with</p>

¹⁰⁵ Watersheds are show on Map Error! Main Document Only..

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
			transportation safety requirements.. Strategies to minimize risk of bear mortality could include Graduated access i.e., increase difficulty of vehicle access as move further away from road origin. Road deactivation, including deliberate removal of bridges
	1b. Number of connected road networks having unrestricted public access.	No uncontrolled public access on roads into the Khyex watershed.	Strive to minimize the number of connected road networks through access planning Introduce controls to public access such as gating on any new roads constructed into the Khyex watershed. This could include windowed public access whereby the timing and amount of use is consistent with minimizing mortality risk to grizzly bears. Continue to apply the existing access controls restricting non-commercial and non-industrial motorized access into the Kitsault townsite.
2. To minimize road-induced displacement and mortality risk of bears within or adjacent to critical habitats.	Proximity of active roads to mapped critical habitat	<p>Low risk target: No active roads within 100 m of critical habitat, unless no practicable alternative exists.</p> <p>Risk managed strategy: Where roads must be built within 100m of critical habitat, the developer must implement strategies to minimize or mitigate risk of bear displacement and mortality.</p>	Strategies to minimize bear displacement could include: Visual screening of habitat from roads consistent with transportation safety requirements.
Habitat			

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
3. To maintain landscape level forage supply by BEC variant on a continual basis (spatially and temporally)	Amount of mid-seral forest by BEC variant	<p>Manage the Kitkiata and Paril watersheds to the low risk target from the coarse filter biodiversity GMD (maximum 17% mid-seral by site series by watershed).</p> <p>Manage other Grizzly Bear Identified Watersheds under an adaptive management approach that explores the implications of maximum 30%, 40% and 50% mid-seral by variant on both habitat supply and timber supply.</p>	In landscapes important for grizzly bear habitat maintain < 50% in mid seral stage.
4. To maintain adequate forage within managed forest stands by maintaining productive understories	Spatial distribution of trees within regenerating stands.	70% maximum average crown closure from “free to grow” to harvest age, measured over the treatment unit	<p>On rich and wetter sites¹⁰⁶, undertake cluster planting and manage to lower stocking standards.</p> <p>Consider uneven spacing of seedlings and saplings to maximize forage benefit.</p> <p>Other mitigation measures include pre-commercial thinning, group selection, selection harvesting, variable retention, pruning, and prescribed fire.</p> <p>Do not use aerial herbicide applications in highly effective grizzly habitat. Target only vegetation directly competing with crop trees.</p>
5. To maintain the integrity of and linkage amongst critical riparian habitats	Amount of alteration of ground-verified critical habitats.	<p>Low risk target:</p> <p>No alteration of critical habitats, unless no practicable alternative exists.</p>	The size and configuration of the forested component of critical habitat are location dependent.

¹⁰⁶ Rich and wetter sites are defined in the CWHws1 and CWHws2 as 06, 07, 08, 09, and 11 sites series; in the CWHvm1 as 05, 07, 08, 09, 10, and 14 sites series; in the CWHvm2 as the 05, 08, and 11 sites series; in the CWHwm as 03, 04, 05, 06, 07, 09 site series; and in the CWHvh2 as the 06, 07, 08, 09, 10, 13 site series.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
critical grizzly bear habitats ¹⁰⁷ , including functional visual (security) and resting (bedding) cover.		Risk managed strategy: Where alteration within critical habitats is unavoidable, the developer must assess risks to bears and implement strategies to minimize or mitigate impacts.	Where necessary, undertake measures to protect the ecological function of effective critical habitat e.g., <ul style="list-style-type: none"> • natural drainage patterns; • Prevent disruption of the natural distribution of snow avalanching; • Prevent windthrow within critical habitats • Maintain natural light levels Draft mapping of critical habitat exists, peer review and ground truthing required.
8. To minimize displacement and habituation of bears due to commercial recreation activities, including land-based bear viewing	8a. # of land-based user days per km ² per active season (April 1 – October 31)	Low risk threshold (displacement threshold): < 1500 user days per km ² per active season Risk managed target (target resulting in a moderate risk of habituation and moderate - high level of displacement): < 5000 user days per km ² per active season To exceed the Low Risk Target, commercial operators and/or land managers must assess risks to bears from increased levels of use and implement strategies to minimize or mitigate bear displacement, habituation and associated increases in mortality risk.	A buffer has been built into the target for user day density to accommodate First Nations activities in high use areas. When allocating # of user days consider use of these areas by First Nations as a priority. Ensure that user days are allocated in an equitable way between public and commercial recreation users (see Section 5.11: Non-Commercial Recreation). Consider instituting a “watchman” program to monitor bear viewing activity and associated impacts. Strategies to minimize bear displacement and habituation could include: seasonal windowing, group size control, spatial separation from preferred habitat, and careful

¹⁰⁷ Critical patch habitats include beaches and beach margins, estuaries, rich non-forested fens, the edges of forested and non-forested bogs, herb-dominated patches on avalanche chutes with adjacent forest (particularly south-facing ones), herb-dominated subalpine parkland meadows, skunk cabbage swamps, floodplain ecosystems, and areas where bears fish for spawning salmon. Den cavities and surrounding stands are also considered critical. Non-forested critical habitats include a core area and buffer of forested cover. Forested critical habitats are not buffered.

On-the-ground objective	Implementation indicator(s)	Target	Management considerations
			<p>food and waste management. Bear awareness education at high use areas is essential.</p> <p>Allocate user days per km² per active season (April 1 to October 31), with < 1500 user days per km² per active season as a precautionary benchmark, and an absolute maximum of</p> <p>< 5000 user days per km² per active season</p> <p>To exceed the <1500 user days per km², commercial operators and/or land managers must assess risks to bears from increased levels of use and implement strategies to minimize or mitigate bear displacement, habituation and associated increases in mortality risk.</p>

6.9 Marbled Murrelets

On-the-ground objective	Indicator(s)	Target	Management considerations
<p>1. Maintain the quantity and quality of marbled murrelet nesting habitat across the plan area.</p>	<p>% of 2002 functional nesting habitat (e.g., an area equivalent to 250,000 ha of age class 9, height class 4, below 600 m elevation) across the plan area (see Table 32 to determine area equivalency of sub-optimum nesting habitat)</p>	<p>X %</p> <p>Areas retained as murrelet nesting habitat must be verified, using appropriate methods such as radar inventory, to have the appropriate structural features (see Management Considerations).</p> <p>Down-listing Threshold:</p>	<p>The following are preferred attributes of murrelet nesting habitat in the plan area/North Coast:</p> <ul style="list-style-type: none"> • areas located on average within 30 km from the ocean, but no more than 50 km; • large limbs > 15 m above ground with platforms > 15 cm across; • moss-covered branches, deformities or dwarf mistletoe;

On-the-ground objective	Indicator(s)	Target	Management considerations
		Minimum of 69% of the 2002 functional nesting habitat retained across the plan area throughout all rotations.	<ul style="list-style-type: none"> • Sitka spruce > 40 m in height, or yellow cedar > 30 m in height; • Western redcedar >40 m and mountain hemlock >30m in height (if above tree species are unavailable). <p>Where feasible, locate suitable nesting habitat to also meet objectives to biodiversity e.g., red-listed plant communities, wildlife tree patches, old growth retention areas, and riparian reserves.</p> <p>Patch size distribution should consider the potential for optimizing the functional integrity of murrelet habitat.</p> <p>Edge effects should be minimized by avoiding elongated or amoeboid shapes with large edges bordered by roads or recent clearcuts. Windfirm buffers should surround suitable habitat.</p>
2. Maintain quantity and quality of optimal nesting habitat in core areas or zones.	% of optimal nesting habitat within each core area or zone. (See Table 32 to determine area equivalency of sub-optimum habitat. See Table 33 for listing of core areas. The zones in Table 33 are an alternative to the core areas).	10% Areas retained as murrelet nesting habitat must be verified, using appropriate methods such as radar inventory, to have the appropriate structural features (see Management Considerations).	<p>Habitat weightings in Table 32 can be used as interim guidance for retention within core areas. Until murrelet suitability and use is confirmed, apply lower risk habitat weightings.</p> <p>If harvesting is proposed in core areas, the onus is on the forest licensee to show how and where they are maintaining suitable murrelet habitat.</p> <p>To reduce impact to forestry, collaboration with coast-wide monitoring efforts should be devised to distinguish between nesting habitat declines and at-sea fluctuations.</p>

APPENDIX 6: MANAGEMENT DIRECTION TO BE FINALIZED – Marbled Murrelets



On-the-ground objective	Indicator(s)	Target	Management considerations
			Develop assessment/ monitoring program to confirm murrelet suitability and use of core areas as development proceeds.

Table 32 shows the area of forest types that are estimated as equivalent to one hectare of optimum marbled murrelet habitat (i.e. age class 9, height class 4, < 600 m elevation). In sub-optimum forest types, a larger area is required to provide equivalent habitat suitability.

These weightings were calculated based on a sample of watersheds where murrelet density was statistically related to watershed characteristics¹⁰⁸. The “Down-Listing Threshold estimate” is the most-likely weighting, while the “Lower Risk Estimate” was based on 1 standard deviation lower density than the most-likely estimate. Thus the “Low Risk” numbers provide an additional buffer for uncertainty of the weighting. All weightings are expressed in terms of how many hectares would be equivalent to 1 hectare of age-class 9, height-class 4, canopy-closure 3-7, and <600 m elevation.

Table 32: Weightings (area equivalence) of marbled murrelet nesting habitat quality in forest inventory polygons.

Age-Class	Height-Class	Elevation (m)	Equivalent hectares of functional nesting habitat ^a	
			Down-Listing Threshold Estimate	Lower Risk Estimate ^b
8	3	<600	27.3	43.7
8	4	<600	10.3	17.6
8	5	<600	8.8	14.7
9	2	<600	14.0	21.7
9	3	<600	3.2	4.4
9	4	<600	1.0	1.3
9	5+	<600	0.6	0.7
8	3	600-1000	27.3	43.7
8	4	600-1000	17.6	31.4
8	5+	600-1000	15.4	27.5
9	2	600-1000	70.3	112.6
9	3	600-1000	4.4	6.4
9	4	600-1000	1.8	2.3
9	5+	600-1000	0.6	0.8

^a Hectares equivalent to 1 hectare of Age-class 9, Height-class 4, <600m. Assumes canopy-closure class 3-7 as radar data indicates canopy closure was a weak predictor of abundance relative to other attributes. Should also be discounted based on landscape unit access certainty⁶.

^b Based on one standard deviation above “threshold” estimate. Applying these values gives an additional buffer for uncertainty of habitat identification.

¹⁰⁸ Steventon, J.D. July 2003. ERA: Base Case Scenario. Marbled Murrelet. Prepared for the North Coast LRMP.

Table 33: Landscape unit groupings for proposed core areas and marbled murrelet zones

	Landscape Units	Estimated % of Current Habitat Capacity (assuming linear relationship between habitat and population as per COSEWIC criteria)
Proposed Core Areas		
1. Kitlope – Fiordland and area	Kiltuish Triumph	1% + Kiltuish + Kitlope, Fiordland and Khutze outside of NC LRMP => 10%
2. Foch-Gilttoyes Area	Kitkiata Johnston	6% + Foch-Gilttoyes Park in Kalum LRMP =>10 %
3. Khutzeymateen Area	Khutzeymateen, Ksi X’anmas (Kwinamass), Chambers, Somerville	12%
4. Inside Passage and Pitt Island North	Kumealon, Pa_aat, Captain, Hartley	14%
5. Portland (K’alii Xk’alaan)/Observatory Inlets	Pearce, Belle Bay, Marmot, Kitsault	10% (There is no actual use data in this area, assumes similar use as to southern part of plan area)
6. Douglas Channel	Gribbell, South Hawkesbury, Bishop, Triumph	9%
7. Douglas/Grenville Channel Area	Gribbell, South Hawkesbury, Hartley, Kitkiata	15%
Proposed Zones		
1. North of Nass	Anyox, Belle Bay, Kitsault, Kshwan, Marmot, Observatory East, Observatory West, Olh, Stagoo	11%
2. Outer Marine Channels South of Nass, north of Skeena	Chambers, Kaien, Khutzeymateen, Ksi X’anmas (Kwinamass), Pearce, Quottoon, Somerville, Tuck, Union	25%
3. Grenville Channel – Pitt Island	Captain, Gil, Hartley, Hevenor, Kumealon, Monckton, Pa_aat, Red Bluff	21%
4. Inner Douglas Channel	Bishop, Gribbell, Hawkesbury South, Johnston, Kitkiata, Triumph	15%
5. Windward Islands	Aristazabal, Banks, Campania, Dundas, McCauley, Porcher, Stephens, Trutch	13%
6. Lower Skeena Drainage	Big Falls, Brown, Khtada, Khyex, Scotia, Sparkling	6%

6.11 Noncommercial Recreation

Objective	Implementation indicator(s)	Targets	Management considerations
1. Manage land-based conditions to support a wide range of outdoor recreational activities and experiences	Presence across the land-base of each Recreation Opportunity Spectrum class ¹⁰⁹ .	All ROS classes present where currently present. Representative samples of all present BEC zones to be maintained according to EBM as per remainder of the GMD.	Consider most appropriate way to measure this objective.

6.12 Northern Goshawk

On-the-ground objective	Indicator(s)	Target	Management considerations
1. To maintain all known goshawk nest areas and post-fledging areas with sufficient mature and old growth forest to allow continued occupancy and successful reproduction.	Spatial extent (ha) of forest harvesting within the identified nest and post-fledging areas.	<p>Low Risk Target: Interim management to be based on old growth retention targets in the Identified Wildlife Management Strategy. These are: For coastal <i>laingii</i>, nest area and post-fledging area combined: 200 ha¹¹⁰ Revise targets as more information on numbers of goshawk nests, population size, and post-fledging area needs, becomes available.</p> <p>Risk managed Target: Partial removal of old growth retention in nest</p>	<p>Tactical and operational planning should include assessment of potential development for existence of goshawk nests (at least during layout of boundaries for felling trees), and definition of nest areas, prior to tree felling.</p> <p>Planning to include nest areas in old growth management areas and retention areas.</p> <p>Lay out harvesting so that mature and old forest in nest areas is contiguous with other foraging habitat.</p>

¹⁰⁹ ROS mapping classifies the condition of the land base according to its ability to support different types of recreational activity. Criteria for determining ROS classes include distance from roads, evidence of human use, size of area and naturalness. Classes include primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, roaded modified, rural, and urban. Due to its inaccessibility, a large portion of the North Coast LRMP is classed as “primitive” (Van Raalte, 2003).

¹¹⁰ Source of target: Identified Wildlife Management Strategy: Standards for Managing Identified Wildlife. Version 2003. Interim draft from Ministry of Water, Land and Air Protection.

On-the-ground objective	Indicator(s)	Target	Management considerations
		and post-fledging areas can proceed, within certain timing windows, so as to allow road access for development, as long as no practicable alternative exists, and, as long as the habitat removed for the access is replaced with an equivalent amount of suitable habitat (which could include areas managed for certain habitat characteristics).	
2. To maintain sufficient foraging habitat adjacent to nest areas to allow continued occupation of the breeding territory.	Proportion of the foraging area, bordering the nest area, in mature and old growth structural stages.	<p>Low Risk Target: Interim management to be based on maximizing old growth retention within a 2200 ha foraging area¹¹¹. There is no quantitative target regarding the proportion of this foraging area that needs to be in old growth for continued occupation.</p> <p>Revise target as more information on what forest types goshawks use for hunting, and their prey base, becomes available.</p> <p>Risk managed Target: Partial removal of old growth retention in foraging areas can proceed, within certain timing windows, so as to allow road access for development, as long as no practicable alternative exists, and, as long as the habitat removed for the access is replaced with an equivalent amount of suitable habitat (which</p>	<p>A reasonable quantitative target is not available at present because the threshold of mature and old forest for territory occupancy has not been measured. IWMS foraging target is 2400 ha.</p> <p>Where marine and lake shoreline exists within 3 km of a nest area, avoid harvesting within 300 m of the shoreline.</p> <p>Seek advice of a qualified professional in planning for mature and old growth structural stand retention and development in the foraging area. (e.g., inclusion of riparian reserves and wildlife tree patches). This should include consideration of the best layout of mature structural retention within cutovers, and silvicultural treatments in regenerating stands, so as to promote prey abundance.</p> <p>Given fiscal constraints, seek funding from a number of alternative sources (e.g., birding organizations)</p>

¹¹¹ Source of target. Identified Wildlife Management Strategy: Standards for Managing Identified Wildlife. Version 2003. Interim draft from Ministry of Water, Land and Air Protection.

On-the-ground objective	Indicator(s)	Target	Management considerations
		could include areas managed for certain habitat characteristics).	organizations). Risk managed target could reflect predictive modelling, but sites need to be confirmed.
3. Undertake research and inventory to (a) identify the distribution, and habitat needs, of goshawks including identification of nest areas and post-fledging areas, and (b) characterize the taxonomy of the subspecies found in the plan area.	See Management Considerations	See Management Considerations	Implement an inventory program led by a qualified biologist to locate new nests, assess diet, and monitor post-fledging area use. Research to assess breeding territory size, hunting habitat requirements and prey availability in different forest types. Consider using field crews from local educational institutions for monitoring and inventory.

6.13 Timber

Objective	Implementation indicator	Targets	Management considerations
6. Ensure that forestry activities at all scales are done in a cost effective manner			
7. Ensure full cost of implementing EBM is adequately covered by the stumpage system or through other funding mechanisms.			

6.15 Ungulates – Mountain Goats

Objective	Implementation indicator(s)	Target(s)	Management considerations
<p>1. Maintain functional and structural attributes of goat winter ranges, wherever they occur in the landscape.</p>	<p>Amount of confirmed winter range unmodified by development activity</p>	<p>a). Within the mature and old forests of each winter range unit i) Low Risk Target, 100% unmodified, ii) Risk Managed Target, 90-100% unmodified. b). No impact on function and distribution of escape terrain within each winter range. c). No roads should be constructed within goat winter range unless no practicable option exists.</p>	<p>Developers will show due diligence in the identification and assessment of goat winter range in and adjacent to proposed developments before potential disturbances occur. See Appendix 8.</p>
<p>2. Maintain habitat suitability of winter range by minimizing disturbance and mortality risk to mountain goats.</p>	<p>2a. Incidence and duration of flight paths of tenured activities intersecting an area 1500 m horizontal to, and 500 m vertical to, confirmed goat winter range between October 31 and June 30.</p>	<p>No intersections of 1500 m buffer between October 31 and June 30.</p>	<p>Land and Water BC and WALP to establish need for on-board GPS data loggers as a requirement for tenure.</p>

Objective	Implementation indicator(s)	Target(s)	Management considerations
	2b. Incidence of casual flight lines within 1500 m of confirmed winter range between October 31 and June 30. ¹¹²	No casual flight lines within 1500 m from October 31 to June 30.	Developers will inform contracted pilots of goat winter range to ensure compliance with the LRMP objectives and targets.
	2c. Incidence of heli-logging within 1500 m of confirmed winter range between October 31 and June 30.	No heli-logging within 1500 m from October 31 to June 30.	Heli-logging should not occur within 1500 m of winter range between October 1 and June 15.
	2d. Incidence of construction-associated disturbances within 1500 m of confirmed winter range between October 31 and June 30.	No construction associated disturbances within 1500 m from October 31 to June 30.	Blasting activities should not occur within 1500 m between October 31 and June 30. Other construction activities, including right-of-way falling, removal of the overburden, and aggregate trucking, can occur within 1500 m but should be assessed on an individual basis considering screening topography, and the duration and intensity of activity. No activities should occur within 500 m of UWR between October 31 and June 30.
	2e. Incidence of permanent infrastructure within 1500 m of winter range. ¹¹³	No permanent infrastructures within 1500 m unless no practicable options exist.	Locate roads and linear corridors on north-facing slopes where practical and feasible. Permanent infrastructure currently within 1500 m should be moved where practical or

¹¹² The term “casual” refers to short term access for prospecting, block engineering, or other site investigations. Communication infrastructure maintenance, public safety, and research related flights and landing areas are exempt from these targets.

¹¹³ The term “permanent infrastructure” refers to mainlines, spur roads, hydro and gas right-of-ways, lodges, cabins, camps, log sorts, wildlife viewing platforms, loading facilities, and mining operations where access and/or use will occur for several years consecutively. Permanent infrastructure with no machine access or use within 1500 m of winter range between October and June are exempt.

Objective	Implementation indicator(s)	Target(s)	Management considerations
			managed to limit impacts on UWR. Such management should include access control.
	2f. Incidence of existing and future temporary infrastructures within 1500 m of confirmed winter range. ¹¹⁴	All existing and future temporary infrastructures within 1500 m will be deactivated immediately on completion of development.	Deactivation of temporary infrastructures should follow immediately on completion of operations and should restrict motorized access. Access limiting measures should be employed until full deactivation is completed. Re-sloping is the preferred method of deactivating constructed roads.
3. Minimize road-induced displacement and mortality risk within or adjacent to UWR			

¹¹⁴ The term “temporary infrastructure” refers to stub roads, skid roads, seismic and survey right-of-ways, survey clearings and fuel and equipment storage areas.

6.15 Ungulates – Moose and Blacktailed Deer

Objective	Implementation indicator(s)	Targets	Management considerations
<p>1. To minimize the potential for moose and deer mortality in roaded areas in identified winter range¹¹⁵.</p>	<p>1a. Incidence in winter range from publicly accessible roads.</p>	<p>Length of publicly accessible roads within moose winter range between November 20 and April 15.</p> <ul style="list-style-type: none"> i) Low Risk Target - No km of publicly accessible road, ii) Risk Managed Target - see Management Considerations. 	<p>Restrict access to roaded areas within in winter range within winter months to minimize the potential for moose and deer mortality. Maintain visual cover or roadside screening between roads and winter range and travel corridors along riparian areas consistent with transportation safety requirements.¹¹⁶ Minimize the right-of-way and physically gate or deactivate all access in or adjacent to moose and deer winter range immediately on completion of function. Deactivation should restrict all motorized ground access.</p>
	<p>1b. Incidence of vehicular collisions on all roads in winter range.</p>	<p>Length of all active roads within moose winter range between November 20 and April 15.</p> <ul style="list-style-type: none"> i) Low Risk Target - No km of active road, ii) Risk Managed Target - see Management Considerations. 	<p>Restrict access to roaded areas within in winter range within winter months to minimize the potential for moose and deer mortality. On all roads, minimize risk factors associated with increased collision rates including speed, road density, and snow bank barriers. Plough “run-away lanes” or large turn outs on winter roads through winter range. Increase signage and reduced speed zones in areas with high wintering densities.</p>

¹¹⁵ Identified winter range refers to existing winter range inventory or other area as updated when new information becomes available.

¹¹⁶ Riparian Management Areas adjacent to streams and wetlands can contribute to visual screening strategies.

Appendix 7: Coarse Filter Biodiversity Tables

Table 34: Ecosystem groupings for application in meeting targets for old growth retention and representation in Section 5.6: Coarse Filter Biodiversity.

Site series surrogates based on PEM are listed in Table 36

Ecosystem grouping by BEC variant	Component sites series (or surrogates)
Very common	
Common	
Modal	
Uncommon	
Rare	

Table 35: Forest Cover inventory age classes eligible for old growth classification by site series.

Note that this Table is based on the 1997 Forest Cover inventory for the North Coast, and will have to be updated with subsequent inventories.

BEC variant	Site series	Age classes
CWHvh2	05, 06, 07, 08, 09, 13, 10, 14, 15, 16, 17, 18, 19	9
	04	8 & 9
	01, 02, 03, 11, 12	7, 8 & 9
CWHvm1	05, 08, 09, 10, 11, 14	9
	01, 04, 06	8 & 9
	02, 03, 12, 13	7, 8 & 9
CWHvm2	05, 08, 09, 10, 11	9
	01, 04, 06	8 & 9
	02, 03	7, 8 & 9
CWHwm	04, 05, 06, 07, 09,	9
	01, 02, 03, 08	8 & 9
	10	7, 8 & 9
CWHws	04, 06, 07, 08, 09, 11	9
	01, 03, 05,	8 & 9
	02, 10	7, 8 & 9
MHwh1	07,	9
	01, 02, 04, 05, 06, 08, 09	8 & 9
	n/a	7, 8 & 9
MHmm1	n/a	9

BEC variant	Site series	Age classes
	01, 02, 03, 04, 05, 06, 07, 08, 09	8 & 9
	n/a	7, 8 & 9

Table 36: Site series surrogates: Groupings of site series employed by the current Predictive Ecosystem Mapping (PEM) modified, making each group mutually exclusive

From Banner, A., C. Jones, R. Trowbridge, A. Trowbridge, G. Cushon, D. Yole, B. Bance and L. McCulloch March 2003. "EcoGen Site Unit Label Interpretation Tables for the Prince Rupert Forest Region. Unpublished Report of the Ministry of Forests, Smithers). Each group may be considered a site series for the purpose of tracking representation.

BEC Unit	PEM Label (Group Name)	Site Series in Group
CWH vh2	01	01
	03	02, 03
	04	04
	07	05, 06, 07
	08	08, 09, 10
	11	11
	12	12,
	13	13
	14	14, 15, 16, 17,
	WL	31, 32, 33,
	CWH vm1	01
02		02
05		04, 05, 08
09		09, 10, 11
12		12
13		13
14		14
WL		31, 32
CWH vm2	01	01, 06
	03	02, 03
	05	05, 08
	09	09
	10	10
	11	11
	WL	31, 32
	SA	51

APPENDIX 7: COARSE FILTER BIODIVERSITY TABLES

BEC Unit	PEM Label (Group Name)	Site Series in Group
CWH wm	01	01a
	02	01b, 02
	03	03, 04
	05	05, 06, 07
	09	09
	10	08, 10
	WL	31, 32
	SA	51
	CWH ws1 & ws2	01
02		02
03		03
04		04, 06
07		07, 08, 09
10		10
11		11
WL		31, 32
SA		51
MH mm1 & mm2	01	01, 04
	02	02
	03	03, 05
	06	06, 07, 08, 09
	WL	31
	SA	51
MH wh1	01	01, 04
	02	02
	05	05
	06	06, 07, 08, 09
	WL	31

Appendix 8: Mountain Goat Winter Range Identification, Assessment, and Planning Protocol

This protocol and associated flow chart (Figure 1) provide direction on appropriate methods to: (i) identify mountain goat winter range (MGWR), (ii) confirm whether goats use the range and delineate range boundaries, and (iii) develop complete and inclusive plans when Risk Managed Targets are utilized.

Identification: To demonstrate due diligence, developers must use a professional biologist to identify potential MGWR both (i) as available habitat mapping¹¹⁷ and (ii) as identified by stratification of the landscape. Habitat mapping is available for most of the plan area except seaward portions of the Hecate Lowland. In these areas previously unmapped, the landscape should be stratified using the following habitat features:

- Hill slopes greater than 90% (30°),
- Southern aspects (approximately 90° to 270°), and,
- Partial or complete coniferous forest cover greater than 80 years old.

Where proposed development or activity does not overlap potential MGWR or the spatial targets of the GMD, then no further work is required. Where there is overlap with either inventoried or previously unidentified MGWR, the developer can apply the limitations in the GMD directly (i.e. act as though the potential MGWR is confirmed MGWR) and prepare a Winter Range Management Plan, or the developer can undertake a Confirmation Assessment to find out whether the potential MGWR actually has or has had mountain goat use.

Confirmation Assessment and Boundary Delineation: A professional biologist will undertake a use assessment to confirm use by goats in a potential MGWR, and to map the boundaries of the occupied winter range. Use can be established by existing information, summer ground surveys or winter aerial surveys. However, winter aerial surveys are not necessarily conclusive, and must be backed up by summer ground surveys when goats are not observed in winter.

Winter surveys are best flown by helicopter from early February to early April depending on local weather conditions. The flight should be scheduled for mid morning, 2-4 days after a fresh snow fall where subsequent rain has not destroyed tracks. The selected areas should then be flown from bottom to top with emphasis on exposed rock areas. If there is no escape terrain and no mountain goats or their tracks are seen, the area in question can be removed from the list of potential MGWR. However, if suitable habitat occurs but no tracks or mountain goats are seen, further ground surveys should be scheduled in summer to confirm the absence of evidence of mountain goat winter use. Summer ground surveys are also required to provide data for delineating winter range boundaries, and for the development of a Winter Range Management Plan as specified in the GMD.

Summer field surveys should be completed between May and September to avoid snow and freezing conditions which represent a significant hazard when investigating steep slopes. The area in question should be thoroughly examined in the field by a qualified professional to (i) find evidence of historic use (pellets, tracks, trails, hair) and (ii) locate areas of potential winter use near escape terrain (trails, movement corridors, foraging areas, suitable areas of snow interception). There are no absolute rules for identifying the boundaries of winter range so professional judgement will be an essential part of any delineation.

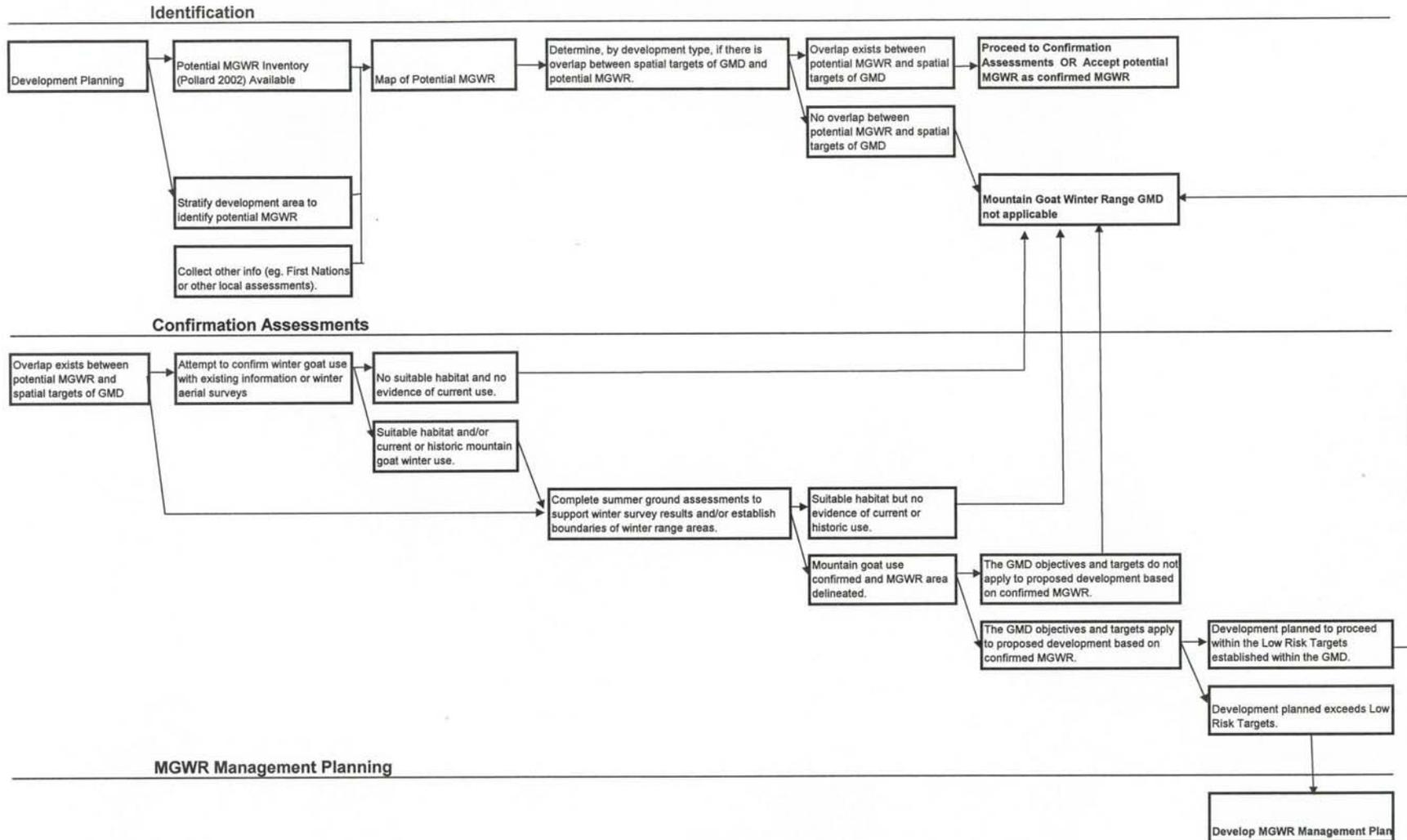
¹¹⁷ Pollard, B.T. 2002. Mountain goat winter range mapping for the North Coast Forest District. Produced for the Government Technical Team of the North Coast Land and Resource Management Plan, Smithers, BC.

APPENDIX 8: MOUNTAIN GOAT WINTER RANGE PROTOCOL

If summer ground investigations conclude that suitable winter range occurs but there is no evidence of historic use, the area is not considered confirmed MGWR for the purposes of the GMD. If MGWR is confirmed but does not fall within the proposed development, or spatial targets around an activity as identified in the GMD, then no specific mountain goat management is required even though the area is still confirmed MGWR. When confirmed MGWR overlaps either the proposed development, or the spatial targets around that development or activity as identified in the GMD, the developer must prepare a Mountain Goat Winter Range Management Plan as specified in the GMD.

MGWR Management Planning: This management plan will assess the potential impacts of development considering the quality, quantity and landscape distribution of goat winter range in the context of the planned development. It will also document risk prevention strategies (mitigation, restoration, or enhancement) to minimize the risk of the development on the viability and distribution of mountain goat populations. Risk prevention strategies must be developed using an adaptive management approach, whereby any modifications to winter range will occur as part of a structured adaptive management experiment. Assessment and development of the winter range management plans will be completed by a qualified professional.

Figure 1: Mountain Goat Winter Range (MGWR) Identification, Confirmation and Planning



Appendix 9: Provincial Government Commitment to Implementation and Monitoring



Reference: 36141

MAR 15 2004

Don Scott, Co-Chair
North Coast LRMP Table
1871 Sloan Ave
Prince Rupert BC V8J 4B4

Clifford White, Co-Chair
North Coast LRMP Table
48 Beach St
Kitkatla BC V0V 1C0

Dear Mr. Scott and Mr. White:

Fred Oliemans, Provincial Government Representative, has asked me to provide the table with a summary of government's commitment to implementation and monitoring of the North Coast Land and Resource Management Plan (LRMP). I understand that clear commitment to monitoring the LRMP is an important element of an agreement for many sectors.

When I attended the North Coast LRMP table meeting in December, 2004, I made a commitment that the Ministry of Sustainable Resource Management (MSRM) would pursue funding for the activities required to implement and monitor six LRMP's that are currently being completed, including the North Coast.

MSRM has made presentations on this matter to Treasury Board. In order to make a specific budget commitment, a number of additional steps will be required:

1. The LRMP tables will have to complete their recommended plans and describe the anticipated process for implementation and monitoring.
2. A socio-economic and environmental assessment will be completed that allows government to assess the full fiscal implications of each LRMP, so that government can make an informed decision;
3. Government-to-government discussions will be completed, so that the costs of implementing the recommendations from government-to-government can also be factored into a decision.

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Ministry of
Sustainable Resource
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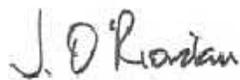
- 2 -

I understand the table's support for the plan is based upon government's commitment to implementation and monitoring. Prior to Cabinet approval of LRMPs, the ministry is required to send a submission to Treasury Board on the costs of the plan implementation and monitoring

MSRM will be actively seeking partnerships for the many activities that will flow from these plans. The province cannot afford to implement EBM on its own, and we encourage any organizations that have an interest in sustainable management on the coast to work with the province to implement these innovative plans.

I hope this response addresses the table's request, and I wish good luck in your final weeks.

Yours truly,



Jon O'Riordan
Deputy Minister

pc: Ken Baker, Assistant Deputy Minister
Resource Management Division

Kevin Kriese, Regional Director
Skeena Region

MAPS

Map 1: Plan Area

Map 2: Nisga'a Land Interests

Map 3: Recommended Land Use Designations

Map 4: Watershed Boundaries

Map 5: Landscape Units

Map 6: Grizzly Bear Occupied Area

Map 7: Grizzly Bear Management Area

Map 8: Tourism Areas

Map 9: Mountain Goat Winter Range

Map 10: Visual Management Areas