# Land-use Plan Summary

# for the North and Central Coast Regions

# of British Columbia

**REVISED CLOSE-OUT DRAFT** 

Report to the Ecosystem-based Management Working Group

Karen Price and Dave Daust September 24, 2007

## Disclaimer

This report was commissioned by the Ecosystem-Based Management Working Group (EBM WG) to provide information to support full implementation of EBM. The conclusions and recommendations in this report are exclusively the authors', and may not reflect the values and opinions of EBM WG members.

## **Synopsis: User's Guide to the Land-use Plan Summary Tables**

This synopsis guides users through the vast quantity of information included in the Land-use Plan Summary as a route to starting to develop an adaptive management framework. The Land-use Plan Summary includes five sections. Two summary tables provide the essential pieces of an adaptive management framework—the relationships between objectives and activities/strategies/indicators—and the concept maps provide high level hypotheses about how objectives relate to each other. Details and references to source documents can be found within the compilation table and list of effectiveness indicators.

Table	Includes	Function					
Target summary table	<ul> <li>For each value,</li> <li>objectives from draft Ministerial Orders, Government-to-Government agreements and</li> </ul>	This table is complementary to the indicator/plan summary table following (ideally the tables would be combined, but the current variety of targets make a combination table impractical). Together, the summary tables provide the backbone of an adaptive management framework.					
	Ecosystem-based Management Handbook     associated implementation indicators from all source documents     targets for each implementation indicator, sorted by source document	This table includes the targets for each implementation indicator across source documents. It allows comparisons of the risk to each objective (taken from draft Ministerial Orders, Government-to-Government agreements and Ecosystem-based Management Handbook) posed by each target, and can be used to facilitate decision-making within the adaptive management framework.					
Indicator/plan	For each value,	This table provides the basis for hypotheses about how management activities (measured by implementation indicators) relate to					
summary table	<ul> <li>objectives from draft Ministerial Orders, Government-to-Government agreements and Ecosystem-based Management Handbook</li> <li>associated implementation indicators, effectiveness indicators, assessments/plans from all source documents</li> <li>related values</li> </ul>	objectives (measured by effectiveness indicators or by risk to the objective). The actual form of the relationship awaits expert involvement in some cases, although expert guidance already exists for many, particularly ecological, values (e.g. Scientific Basis of Ecosystem-based Management). Objectives are only from draft Ministerial Orders, Government-to-Government agreements and Ecosystem-based Management Handbook, but sub-objectives from other source documents are included when there is a gap in these sources.					
Concept maps	For each value,	The concept maps provide a high-level summary of the objectives included in all source documents. They present initial hypotheses					
Concept maps	<ul> <li>objectives from all source documents</li> <li>associated implementation indicators</li> </ul>	about the hierarchy of relationships among objectives and between objectives and indicators. The maps can be used to ensure that all related objectives have been considered in the adaptive management framework.					
Compilation table	For each value,  objectives from all source documents  associated strategies and implementation indicators  source type	The compilation table is a complete listing of the objectives and strategies included in all source documents. It was created as an intermediate step in producing the summary tables. Its primary function is to allow cross-checking to ensure that the summary tables capture the intent of the various documents. Hence, wording is virtually identical to the original wording (see Methods for lists of exceptions). Once the summary tables are accepted, we do not anticipate that the compilation table will be used in developing an adaptive management framework. It could serve a useful function, however, as a guide to implementation.					
List of effectiveness indicators	For each value,  • objectives from all source documents  • associated effectiveness indicators	This table is simply a list of effectiveness indicators mentioned in the plans. It is characterised chiefly by gaps, although some values, particularly economic values, are more completely developed. As the adaptive management framework is developed, effectiveness indicators will be refined and gaps filled based on best available information.					

## **Table of contents**

Synopsis: User's Guide to the Land-use Plan Summary Tables	••••••
Table of contents	•••••
Introduction	
Definitions	
Methods	
Compilation Table	10
List of Effectiveness Indicators	
Summary Tables	
Concept maps	
General Results and Discussion	
Comprehensiveness and Gaps	
Resulting summaries and compilations	
Section 1: Summary of objectives, implementation indicators and targets	1
First Nations cultural and traditional resources (S1)	
Hydroriparian ecological integrity (S1)	
Terrestrial ecological integrity (S1)	20
Specific rare and focal species (S1)	
Grizzly bears (S1)	
Human well-being (S1)	2
Harvesting fish and wildlife (S1)	
Non-timber forest products (S1)	
Forestry and timber (S1)	
Mineral and energy resources (S1)	32
Tourism and outdoor recreation (S1)	
Scenery (S1)	
Access (S1)	
Section 2: Summary of objectives, indicators and plans	3
First Nations cultural and traditional resources (S2)	3
Hydroriparian ecological integrity (S2)	
Terrestrial ecological integrity (S2)	
Specific rare and focal species (S2)	4
Grizzly bears (S2)	
Human well-being (S2)	
Harvesting fish and wildlife (S2)	4
Non-timber forest products (S2)	5
Forestry and timber (S2)	5
Mineral and energy resources (S2)	
Tourism and outdoor recreation (S2)	
Scenery (S2)	
Access (S2)	
Section 3: Concept maps.	
Map 1. First Nations' cultural and traditional resources	
Map 2. Hydroriparian ecological integrity	5

Map 3. Terrestrial ecological integrity	60
Map 4a. Specific rare and focal species.	61
Map 4b. Kermode bears	62
Map 5. Grizzly bears	63
Map 6a Human well-being	64
Map 6b Economic growth and diversity	
Map 6c. Local economic benefit (local share of economy) and education and training	66
Map 7. Harvesting fish and wildlife	67
Map 7. Harvesting fish and wildlife	
Map 8. Non-timber forest products (NTFP)	
Map 9. Forestry and timber	
Map 10. Mineral and energy resources	70
Map 11. Tourism and outdoor recreation	71
Map 12. Scenic quality	
Map 13. Access restrictions and access requirements	
Section 4: Compilation of objectives and strategies	74
Key to compilation table	74
Goals related to ecosystem-based management	
Ecological integrity	
Human well-being	
Objectives related to First Nations cultural and traditional resources	
Traditional forest resources	
Monumental cedar	
Stand-level retention of redcedar and yellow cedar	79
Traditional heritage resources.	
Culturally modified trees	
Objectives related to hydroriparian ecological integrity	
Water quantity	
Water quality and stream morphology	
Hydroriparian biodiversity and productivity: coarse filter	91
Fine filter hydroriparian biodiversity: Fish and high-value fish habitat	97
Hydroriparian biodiversity: connectivity	
Objectives related to terrestrial ecological integrity	
Ecosystem representation	100
Rare ecosystems	
Habitat for rare and focal species	
Stand structure	
Tree species composition	
Islands	
Exotic species	
Soils and terrain	
Degraded sites.	
Objectives related to specific rare and focal species	110
Tailed frog	110
Rhinoceros auklet	110

Marbled murrelet	110
Northern goshawk	
Black (Kermode) bear—forage	
Black (Kermode) bear—critical habitat.	112
Black (Kermode) bear—displacement.	113
Black (Kermode) bear—human-induced mortality	114
Mountain goat	114
Moose and blacktailed deer	
Objectives related to grizzly bears	
Grizzly bear—population conservation	
Grizzly bear—benchmark populations	
Grizzly-bear—critical habitat	117
Grizzly bear—landscape-level forage supply.	
Grizzly bear—stand-level forage supply.	119
Grizzly bear—displacement and mortality from roads	
Grizzly bear—displacement by and habituation to people	121
Grizzly bear—displacement by aircraft	123
Grizzly-bear—displacement by water-craft.	
Grizzly bear—negative human-bear interaction.	
Objectives related to general human well-being	
Human well-being	
Flood protection	
Domestic and industrial access to water	
Health services	
Cultural and social activity	
Social services	
Physical infrastructure	
Settlement	
Community influence	
Industry consultation	
Public decision-making	
Meeting Needs	
Annual income	130
Economic growth and diversity	131
Value added	
Waste wood	
Investment	
Bureaucracy	
Business infrastructure and services	
Local economic benefit	
Resource rent	
Joint ventures	
Resource/tenure allocation.	
Employment	
Education and training	136

18	Population growth	
Collaboration amongst users   38   Resource/renur allocation—trist Nations susteance   38   Resource/renur allocation—trist Nations susteance   38   Resource/renur allocation—trist Nations susteance   38   Inventory, research and monitoring   38   Inventory, research and monitoring   38   Non-trimber forest product sector growth and diversity   34   Non-timber forest product sector growth and diversity   34   Marketing   34   Harvestine opportunity   34   Harvest rate   35   Harv	Objectives related to harvesting fish and wildlife.	138
Resource/tenure allocation—trapping and guiding   Six Resource/tenure allocation—trapping and guiding   Six Statistical Propositions   Six Statistical Pr	Harvesting opportunity	138
Resource/tenure allocation—First Nations sustemance		
Sastaniable populations         134           Inventory, research and monitoring         144           Objectives related to non-timber forest products         141           Non-timber forest product sector growth and diversity         144           Mark-cling         144           Harvesting opportunity         144           Resource/tenure allocation         14           Harvest rate         147           Forest-product productivity         14           Forest-product contamination         14           Research and development         14           Folucation and training         14           Objectives related to forestry and timber         14           Forest sector growth and diversity         14           Investing opportunity         14           Resource/enume allocation         14           Harvesting opportunity         14           Investing opportunity         14           Havesting opportunity         14           Havesting opportunity         14           Havesting opportunity         14           Havesting opportunity         14           Horse productivity         15           Resource and monitoring         15           Horse productivity		
Sastaniable populations         134           Inventory, research and monitoring         144           Objectives related to non-timber forest products         141           Non-timber forest product sector growth and diversity         144           Mark-cling         144           Harvesting opportunity         144           Resource/tenure allocation         14           Harvest rate         147           Forest-product productivity         14           Forest-product contamination         14           Research and development         14           Folucation and training         14           Objectives related to forestry and timber         14           Forest sector growth and diversity         14           Investing opportunity         14           Resource/enume allocation         14           Harvesting opportunity         14           Investing opportunity         14           Havesting opportunity         14           Havesting opportunity         14           Havesting opportunity         14           Havesting opportunity         14           Horse productivity         15           Resource and monitoring         15           Horse productivity	Resource/tenure allocationFirst Nations sustenance	139
Objective related to non-timber forest products   144	Sustainable populations	139
Non-timber forest product sector growth and diversity	Inventory, research and monitoring	140
Marketing   14     Harvesting opportunity   14     Resource/tenure allocation   14     Resource/tenure allocation   14     Forest-product productivity   14     Forest-product productivity   14     Forest-product ponductivity   14     Research and development   14     Research and and diversity   15     Research and and diversity   15     Research and monitoring   14     Research and monitoring   15     Community influence   15     Community influen	Objectives related to non-timber forest products	141
Marketing   14     Harvesting opportunity   14     Resource/tenure allocation   14     Resource/tenure allocation   14     Forest-product productivity   14     Forest-product productivity   14     Forest-product ponductivity   14     Research and development   14     Research and and diversity   15     Research and and diversity   15     Research and monitoring   14     Research and monitoring   15     Community influence   15     Community influen	Non-timber forest product sector growth and diversity	141
Harvesting opportunity.		
Resource/enture allocation	Harvesting opportunity	141
Harvest rate	Resource/tenure allocation.	142
Forest-product contamination.	Harvest rate	142
Forest-product contamination.	Forest-product productivity	143
140   Dispectives related to forestry and timber.	Forest-product contamination	143
14    Forest sector growth and diversity   14    Investment	Research and development	143
Forest sector growth and diversity.	Education and training	144
Investment	Objectives related to forestry and timber	145
Marketing       144         Harvesting opportunity       146         Resource/enure allocation       144         Harvest rate       14         Forest productivity       148         Research and monitoring       148         Community influence       14         Objectives related to mineral and energy resources       14         Mineral and energy sector growth and diversity       150         Resource extraction opportunity       150         Collaboration amongst users       15         Community influence       15         First Nations influence       15         Local economic benefit       15         Education and training       15         Inventories, research and monitoring       15         Ecological integrity of mine sites       15         Visual impacts of mine sites       15         Volgeitves related to tourism and outdoor recreation       15         Tourism sector growth and diversity       15         Investment       15         Collaboration amongst users       15	Forest sector growth and diversity.	145
Harvesting opportunity	Investment	146
Resource/enure allocation       144         Harvest rate       14         Forest productivity       14         Research and monitoring       14         Community influence       14         Objectives related to mineral and energy resources       15         Mineral and energy sector growth and diversity       15         Resource extraction opportunity       15         Collaboration amongst users       15         Community influence       15         First Nations influence       15         Local economic benefit       15         Education and training       15         Inventories, research and monitoring       15         Ecological integrity of mine sites       15         Ecological integrity of mine sites       15         Visual impacts of mine sites       15         Objectives related to tourism and outdoor recreation       15         Tourism sector growth and diversity       15         Investment       15         Collaboration amongst users       15	Marketing	146
Harvest rate		
Forest productivity.	Resource/tenure allocation.	146
Research and monitoring       14         Community influence       14         Objectives related to mineral and energy resources       15         Mineral and energy sector growth and diversity       15         Resource extraction opportunity       15         Collaboration amongst users       15         Community influence       15         First Nations influence       15         Local economic benefit       15         Education and training       15         Inventories, research and monitoring       15         Ecological integrity of mine sites       15         Ecological integrity of mine sites       15         Visual impacts of mine sites       15         Visual impacts of mine sites       15         Objectives related to tourism and outdoor recreation       15         Tourism sector growth and diversity       15         Investment       15         Collaboration amongst users       15		
Community influence       14         Objectives related to mineral and energy resources       15         Mineral and energy sector growth and diversity       15         Resource extraction opportunity       15         Collaboration amongst users       15         Community influence       15         First Nations influence       15         Local economic benefit       15         Education and training       15         Inventories, research and monitoring       15         Ecological integrity of mine sites       15         Ecological integrity—reclamation of mine sites       15         Visual impacts of mine sites       15         Objectives related to tourism and outdoor recreation       15         Tourism sector growth and diversity       15         Investment       15         Collaboration amongst users       15	Forest productivity	148
Community influence       14         Objectives related to mineral and energy resources       15         Mineral and energy sector growth and diversity       15         Resource extraction opportunity       15         Collaboration amongst users       15         Community influence       15         First Nations influence       15         Local economic benefit       15         Education and training       15         Inventories, research and monitoring       15         Ecological integrity of mine sites       15         Ecological integrity—reclamation of mine sites       15         Visual impacts of mine sites       15         Objectives related to tourism and outdoor recreation       15         Tourism sector growth and diversity       15         Investment       15         Collaboration amongst users       15	Research and monitoring	149
Mineral and energy sector growth and diversity       156         Resource extraction opportunity       15         Collaboration amongst users       151         Community influence       151         First Nations influence       151         Local economic benefit       152         Education and training       152         Inventories, research and monitoring       152         Ecological integrity of mine sites       152         Ecological integrity of mine sites       152         Visual impacts of mine sites       154         Objectives related to tourism and outdoor recreation       156         Tourism sector growth and diversity       156         Investment       156         Collaboration amongst users       157	Community influence	149
Mineral and energy sector growth and diversity       156         Resource extraction opportunity       15         Collaboration amongst users       151         Community influence       151         First Nations influence       151         Local economic benefit       152         Education and training       152         Inventories, research and monitoring       152         Ecological integrity of mine sites       152         Ecological integrity of mine sites       152         Visual impacts of mine sites       154         Objectives related to tourism and outdoor recreation       156         Tourism sector growth and diversity       156         Investment       156         Collaboration amongst users       157	Objectives related to mineral and energy resources	150
Resource extraction opportunity       156         Collaboration amongst users       151         Community influence       151         First Nations influence       15         Local economic benefit       15         Education and training       15         Inventories, research and monitoring       15         Ecological integrity of mine sites       15         Ecological integrity—reclamation of mine sites       15         Visual impacts of mine sites       15         Objectives related to tourism and outdoor recreation       15         Tourism sector growth and diversity       15         Investment       15         Collaboration amongst users       15	Mineral and energy sector growth and diversity.	150
Community influence       151         First Nations influence       151         Local economic benefit       152         Education and training       152         Inventories, research and monitoring       152         Ecological integrity of mine sites       152         Ecological integrity—reclamation of mine sites       152         Visual impacts of mine sites       154         Objectives related to tourism and outdoor recreation       154         Tourism sector growth and diversity       156         Investment       156         Collaboration amongst users       157	Resource extraction opportunity	150
First Nations influence       151         Local economic benefit       152         Education and training       152         Inventories, research and monitoring       152         Ecological integrity of mine sites       153         Ecological integrity—reclamation of mine sites       153         Visual impacts of mine sites       154         Objectives related to tourism and outdoor recreation       156         Tourism sector growth and diversity       156         Investment       156         Collaboration amongst users       157		
Local economic benefit		
Education and training		
Inventories, research and monitoring	Local economic benefit.	152
Ecological integrity of mine sites		
Ecological integrity—reclamation of mine sites.  Visual impacts of mine sites.  Objectives related to tourism and outdoor recreation  Tourism sector growth and diversity  Investment  Collaboration amongst users.		
Visual impacts of mine sites	Ecological integrity of mine sites	153
Objectives related to tourism and outdoor recreation156Tourism sector growth and diversity156Investment156Collaboration amongst users157	Ecological integrity—reclamation of mine sites.	154
Tourism sector growth and diversity	Visual impacts of mine sites	154
Investment	Objectives related to tourism and outdoor recreation	156
Collaboration amongst users		
Tourism opportunity		
	Tourism opportunity	157

Recreation opportunity	15
Diversity of outdoor experience	15
Semi-primitive experience	15
Bear viewing	15
Scenery	16
Acoustics	16
Waterways	16
Integrity of natural and cultural features	16
Community influence	16
Local economic benefit.	16
Objectives related to scenery	16
Alteration of scenery	16
Collaboration amongst users	16
Restoration of scenery	16
Research and monitoring	16
Objectives related to access	16
Access restrictions	16
Access requirements	16
Section 5: List of effectiveness indicators	17

#### Introduction

For several decades, controversy surrounded land-use decisions in the coastal regions of British Columbia. In 1996, a group of people representing coastal First Nations, the Province of BC, timber interests, environmentalists and others began work on a Land and Resource Management Plan (LRMP) for the Central Coast, with the aim of recommending consensus-based, land-use strategies. In 2001, the Province of BC and alliances of First Nations from the North and Central Coast agreed to work together to resolve land use conflicts<sup>1</sup>. In the same year the Central Coast planning table completed the first phase of the LRMP<sup>2</sup> and committed to a second phase. Both the First Nation – Provincial agreements and the table recommendations contained commitments to ecosystem-based management (EBM) and to an independent advisory body, the Coast Information Team (CIT), to inform further land-use planning on the coast.

In 2004, the CIT completed the EBM Handbook (EBMH) and associated reports (including the Scientific Basis to EBM and the Hydroriparian Planning Guide), documents that included recommended objectives and strategies to guide development and implementation of EBM. The Central and North Coast LRMPs, completed in 2004 and 2005 respectively, committed to implementing EBM, guided by the EBMH, and recommended additional objectives and strategies. In 2006, following Government-to-Government discussions that considered the LRMP land-use recommendations, the provincial and First Nation governments announced land-use decisions for the Central and North Coasts of British Columbia. These decisions included an initial suite of management and socioeconomic objectives, and a commitment to fully implement EBM, guided by the EBMH, by March 31, 2009. Those schedules to the agreements containing ecological and cultural management objectives (e.g. KNT Schedule F, TP Schedule B; acronyms as in Table 1) have been recently translated into draft Ministerial Orders (MOs) and made available for public review.

The EBM Working Group, a technical group established pursuant to the land-use decisions, is developing an adaptive management framework to support implementation of EBM on the Central and North Coasts of British Columbia. This task is complicated by the multitude of agreements and documents—Government agreements (G2G), draft MO objectives, EBMH, two LRMPs—that resulted from the planning processes. As a prerequisite to developing the adaptive management framework, the objectives and strategies in the various documents must be compiled, organised, summarised and compared. This "Landuse Plan Summary" aims to support development of the adaptive management framework. In includes the following sections:

- a "compilation table" that compiles and summarises existing objectives and strategies contained in the source documents and includes original wording and references to pages in the source documents,
- two more succinct "summary tables" that attempt to synthesise the various objectives and strategies into a format more amenable to designing an adaptive management framework: the "indicator/plan summary table" lists the plans, assessments, implementation and effectiveness indicators associated with each objective; the "implementation indicator/target summary table" lists the targets from each source associated with each implementation indicator and objective,
- "concept maps" that describe hypothetical relationships among values, objectives and strategies, and
- a "list of effectiveness indicators" that includes those effectiveness indicators specifically mentioned in the source documents.

#### **Definitions**

As part of this project the EBM Working Group Project Steering Committee agreed on definitions of relevant terms<sup>3</sup>. The most relevant portions of some of these terms are listed below for easy reference.

Objective: Objectives are specific ends that must be achieved in support of a goal. They clearly define both an end and a preferred direction, but do NOT prescribe a target.

**Strategy**: The "means" that have been adopted or are being considered for achieving the ends. That is, the actions that can be implemented to achieve or influence the objectives. Strategies could be stated with reference to an indicator and a specified quantitative level for the indicator.

**Target**: A specific quantitative state of an indicator associated with a strategy that is either under consideration or has been adopted.

Implementation indicator: Indicators (metrics) that are linked to (and affected by) management strategies.

**Effectiveness indicator**: Indicators (metrics) that are linked directly to reporting change or expected change in the objectives.

8

<sup>&</sup>lt;sup>1</sup> Anon. 2001. 'Enabling process' for the Central Coast Land and Coastal Resource Management Plan ("CCLRMP"); Anon. 2001. General protocol on lands and resources. URL: http://www.davidsuzuki.org/files/finalprotocol.pdf.

<sup>&</sup>lt;sup>2</sup> BC Ministry of Sustainable Resource Management. 2001. CCLCRMP Phase I Framework Agreement. Accessed July 3, 2007. URL: http://ilmbwww.gov.bc.ca/lup/lrmp/coast/cencoast/docs/framework agreement.pdf.

<sup>&</sup>lt;sup>3</sup> Draft Summary Notes—Project Kick-Off Conference Call #07002 May 15<sup>th</sup>, 2007.

## **Methods**

We reviewed the relevant sections of all documents pertaining to strategic land and resource management on the coast (Table 1). Land-use planning documents typically contain a large section with management objectives, strategies and guidelines. This section is divided into sub-sections, each addressing a broad value (e.g., timber, terrestrial ecological integrity). Each value has one or more management objectives and each objective may have one or more strategies. Strategies are listed as implementation indicators and targets in some documents.

Table 1. Documents reviewed for land-use planning summary

Document	Geographic Scope	Reference Acronym	Type of Document
Anon. 2004. Central Coast LRMP Completion Table: Report of Consensus Recommendations to the Provincial Government and First Nations, Province of British Columbia, Victoria, BC.	Central Coast Plan Area	CC or CCAIP <sup>4</sup>	LRMP
Anon. 2005. North Coast Land and Resource Management Plan: Final Recommendations. Province of British Columbia, Victoria, BC.	North Coast Plan Area	NC or NCAIP	LRMP
Anon. 2006. Land use planning agreement-in-principle (AIP) between Mamalilikulla-Qwe'Qwa'Sot'Em First Nation, 'Namgis First Nation, Tlowitsis First Nation, Da'naxda'xw Awaetlatla First Nation, Gwa'sala-'Nakwaxda'xw First Nation, We Wai Kai First Nation, We Wai Kum First Nation and, Kwiakah First Nation (collectively, the "KNT First Nations" or a "Party") and the Province of British Columbia	South Central Coast Plan Area. Covers southern third of Central Coast Plan area.	KNT	G2G <sup>5</sup>
Anon. 2006. Land and resource protocol agreement between Gitga'at First Nation, Haisla Nation, Heiltsuk Nation, Kitasoo/Xaixais First Nation, Metlakatla First Nation, Wuikinuxv First Nation, (collectively the "Coastal First Nations" or a "Party") and Her Majesty the Queen in Right of the Province of British Columbia.	Applicable Territories Includes North Coast Plan Area and northern portion of Central Coast Plan Area.	ТР	G2G
Anon. 2006. Sustainable land use planning agreement between Gitga'at First Nation and the Province of British Columbia.	Gitga'at territory	GT	G2G
Anon. 2006. Strategic land use planning agreement between Haisla Nation and the Province of British Columbia.	Haisla territory	n/a <sup>6</sup>	G2G
non. 2006. Strategic land use planning agreement between Heiltsuk First Nation and the Province of British Columbia.	Heiltsuk territory	n/a	G2G
anon. 2006. Strategic land use planning agreement between Homalco First Nation and the Province of British Columbia.	Homalco territory	HFN	G2G
anon. 2006. Strategic land use planning agreement between Kitasoo/Xaixais First Nation and the Province of British Columbia.	Kitasoo/Xaixais territory	n/a	G2G
non. 2006. Strategic land use planning agreement between Metlakatla First Nation and the Province of British Columbia.	Metlakatla territory	MA	G2G
anon. 2006. Strategic land use planning agreement between Wuikinuxv First Nation and the Province of British Columbia.	Wuikinuxv territory	n/a	G2G
non. 2006. Land use planning agreement between Gitxaala Nation and the Province of British Columbia.	Gitxaala territory	GFN	G2G
anon. 2006. North Coast strategic land use planning agreement between Kitselas First Nation and the Province of British Columbia.	Kitselas territory	KS	G2G
non. 2006. North Coast strategic land use planning agreement between Kitsumkalum First Nation and the Province of British Columbia.	Kitsumkalum territory	KM	G2G
Coast Information Team. 2004. Ecosystem-based Management Handbook	North and Central Coast	ЕВМН	Other
oast Information Team. 2004. Hydroriparian Planning Guide	North and Central Coast	HPG	Other
linistry of Agriculture and Lands. Ministerial Order: Draft for Review and Comment	North Coast LRMP area and NW portion of Central Coast LRMP area.	MO1	Draft MO
Ministry of Agriculture and Lands. Ministerial Order: Draft for Review and Comment	South and east portions of the Central Coast Plan area.	MO2	Draft MO

<sup>4</sup> The North and Central Coast LRMPs include separate sections with interim targets. These sections of the document have a higher emphasis in the consensus recommendations as they formed the Agreement in Principle (AIP), and are thus listed separately in the tables.

<sup>&</sup>lt;sup>5</sup> G2G: Government-to-Government agreement.

<sup>&</sup>lt;sup>6</sup> "n/a": not applicable; objectives from these documents are included in the TP agreement; no new objectives.

#### **Compilation Table**

The compilation table includes original text from all source documents with references to page numbers within each document. It is the most complete reference table, facilitating checking original documents.

The compilation table includes columns listing type of source document, objectives, strategies and implementation indicators. Because the documents carry differing legal weight, the compilation table distinguishes among three types of sources: draft MOs, G2G agreements and other (LRMPs, EBMH and associated reports). For each value (e.g. focal species, tourism and recreation), we compiled objectives and strategies from the appropriate sections of each document listed in Table 1 within source type. We copied original text (indicated by *italics*) to the compilation table and referred to the source document and page using the acronyms listed in Table 1. If objectives or strategies were identical or nearly so, we referred to all sources following the original text. If objectives were similar, but not identical, we listed them separately. To simplify text, and to improve consistency among virtually identical objectives and strategies from different documents, we sometimes removed words (indicated by "..."), added or modified words (indicated by "[]"), replaced words with symbols (e.g. "less than" with "<") or changed voice (e.g. "...will be maintained" to "maintain..."). We shortened repeated clauses and listed the full text in footnotes.

We did not include information listed as "Management Considerations" in the North Coast LRMP, unless indicators and targets existed for a given objective (assuming that if no agreement had been reached on indicators and targets, these considerations were discussion points rather than agreements). We did not include acceptable uses for the various protected areas identified in Government-to-Government agreements and LRMPs; for most conservancies, acceptable uses were not identified. We included objectives and strategies listed in the Hydroriparian Planning Guide (HPG) if they were different from those in the EBMH, because both LRMPs stipulate that the HPG should be used as guidance and because the HPG contains the best scientific information about risk to hydroriparian ecosystems—information that will be important in developing an adaptive management framework.

The geographic scope of any objective or strategy can be determined by noting the geographic area of source documents (Table 1) unless a more specific area is specified in the objective or strategy itself.

The compilation table also includes a column listing implementation indicators. These indicators are sometimes specified explicitly in source documents and are sometimes implied by a strategy. Because terminology varies among source documents, indicators are based respectively on MO "objectives", G2G "indicators", CC "strategies", NC "implementation indicators" or "policy recommendations" (the latter for social and economic objectives) and EBMH "planning requirements and management targets" (with guidance from EBMH indicators). When indicators were not explicit in the source documents, we only listed indicators when the strategy represented a clear implementation task, and when an indicator was obviously implied (e.g. a strategy that "harvest profile over ten year planning period reflects available inventory profile" implies a ten year harvesting profile indicator). Hence, some strategies do not have associated indicators. In general, the indicator column is redundant with the strategy column because clear strategies can be written as an indicator plus a target. Likely, indicators will be revised at later phases in the development of the adaptive management framework. We have not italicised this text as it is often interpreted from source documents.

We organised the rows of text by grouping similar objectives and by grouping similar strategies within objectives. Occasionally, we reclassified strategies from the source documents as objectives in the compilation document or vice-versa (based on the definitions listed above). We divided strategies listed in the source documents into three types as indicated by different bullets:

<u>Strategy:</u> a direct means to achieve an objective; strategies can usually be specified as a prescribed quantity of an implementation indicator; draft MO "land-use objectives" have direct outcomes and specific targets and are thus treated as land-use strategies in this document (no bullet).

Guidance: a vague strategy, with no clearly-stated target; sometimes an elaboration on how to achieve a target (black bullet).

Assessments and plans: inventories, studies, analyses and plans that are needed to achieve the objective; assessments and plans are often needed to define strategies for less-well-understood values (white bullet).

Although shorter than the source documents, the compilation table is still large and rather unwieldy. Hence we produced summary tables for use as the basis for the adaptive management framework. The compilation table still serves two important functions: it includes a complete listing of objectives and strategies from the source documents; it links the summary tables to the source documents, allowing for cross-referencing and checking original wording. The compilation table includes the summarised objectives, indicators and targets listed in summary tables (see below for description) in grey bars; hence it is a complete reference.

#### List of Effectiveness Indicators

Effectiveness indicators are only sporadically developed throughout the source documents. Rather than include these in the compilation table, we created a separate list that shows the effectiveness indicators associated with each objective. Unlike implementation indicators, we only included effectiveness indicators that were explicitly mentioned in the source documents. The NC LRMP occasionally included effectiveness indicators under its implementation indicator column. We did not include these in the list.

### **Summary Tables**

We designed a summary table to present the vast amount of information included in the compilation table in a more accessible form. Unfortunately, we had to split the summary into two tables for practicality. One table lists objectives, implementation indicators and the various targets listed by source. The second shows the summarised assessments, plans, implementation indicators and effectiveness indicators associated with each objective, and provides cross-references to related objectives. Together, the summary tables provide the backbone of an adaptive management framework based on the source documents.

Prior to creating the summary tables, we summarised the objectives and strategies within the relevant sections of the compilation table to facilitate review. In the compilation table, summary rows are shaded grey; original text is left unshaded. Summarising a vast quantity of information from a variety of sources necessitates some interpretation. The goal was to ensure that anything summarised captured the original intent. The EBM Working Group Project Steering Committee reviewed some of our summaries. However, even this group cannot represent the intent of the various planning groups. Following review and revision, we transferred summary text to a summary table, organised to facilitate the development of the adaptive management framework.

Wording for objectives is directly quoted from source documents. When more than one document included a similar objective, we selected the wording that most closely matched listed indicators and strategies (e.g. we selected the wording "Maintain streamflow within range of natural variability" to also represent "Maintain water quantity with the range of natural variability" and "Adequate water flows are maintained within natural levels"). Because each objective can represent more than one source, it would be misleading to list the source of the selected text in the summary table. It is, however, possible to check sources and page numbers by referring to the compilation table.

LRMPs examined some objectives in greater detail and included some objectives not listed in the other documents. As per instructions from the EBM Working Group Project Steering Committee, however, the summary table only includes objectives quoted from the MOs, G2G agreements, and EBMH (i.e. not those only listed in LRMPs). On closer examination, these apparently different "objectives" were generally "sub-objectives" that fell within the objectives listed in the MOs, G2G agreements and EBMH. We retained headings for each LRMP sub-objective to provide structure (wording sometimes revised for clarity), within the relevant objective as taken from the MOs, G2G agreements and EBMH. For example the LRMP objective "Coastal communities have adequate physical infrastructure" was written as "Provide adequate physical infrastructure and services" (services was added because it was included in strategies) and considered as a sub-objective under the EBMH objective to "Provide opportunities for individuals and households to meet their needs".

In the summary tables, objectives are sometimes repeated under different sections for ease of reference. In some cases, different strategies apply to these similar objectives; elsewhere, cross-references are provided to sections with similar strategies.

We summarised the strategies under each objective as implementation indicators and targets for each source. We combined similar strategies by source type (MO, G2G, EBMH, LRMP). Although we included only objectives from the MOs, G2G agreements and EBMH, we included indicators and targets applying to these objectives from all sources. Often indicators were identical, but targets varied among sources (e.g. indicator: % reduction in natural riparian forest in buffer around forested swamps; targets: 30 - 40% MOs and G2G for precaution and risk-managed targets; 10 - 50% EBMH at territory and watershed scales). We also extracted and summarised assessments and plans. We did not summarise the extensive guidance provided by the sources. If targets are not listed for a particular source in the table, they do not exist.

It is important to note that these tables summarise a vast amount of information from a variety of sources with the purpose of allowing development of an adaptive management framework. This task required some interpretation of strategies in the source documents—and the original drafters of the various documents were not available for reviewing intent. Thus, for purposes of implementation, it may be necessary to refer back to the compilation table and source documents to ensure that the summary captures intent.

#### Concept maps

To help us to group similar objectives and strategies, we developed rough concept maps (or influence diagrams) to plot the hypothetical relationships between objectives, indicators and values. Generally, relationships between objectives and indicators are taken from the source documents, but relationships between objectives are inferred. Some subjectivity was unavoidable because the source documents do not explicitly relate objectives, and only rarely imply relationships. The concept maps for ecological integrity are more closely related to source documents than are those for human well-being.

As the summary table developed, we revised the concept maps and the summary tables for internal consistency. The concept maps thus provide a high-level overview (though somewhat subjective) of the summary table, noting how various objectives and indicators fit together to address the broad goals of maintaining ecological integrity and human well-being.

Perhaps more importantly, the models described in the concept maps can be used as *a priori* hypotheses in the adaptive management framework. In modeling language, the objectives and strategies included in the concept maps are analogous to "factors" or "variables" that influence the goals.

#### **General Results and Discussion**

### Comprehensiveness and Gaps

A complete gap analysis is beyond the scope of this report. Instead, we focus on comparing the values, objectives and strategies included in the reviewed documents. We also provide a few examples of gaps across all documents based on our experience with land-use planning in coastal and interior BC.

Historically, LRMPs have focussed on managing land and resources while considering the general social costs and benefits of management. On the British Columbia coast, this scope was broadened when the definition of EBM from the 2001 General Protocol on Lands and Resources and the Central Coast LRMP Framework Agreement included twin goals of maintaining ecological integrity and of supporting and

improving human well-being. Thus Government-to-Government agreements and the Central and North Coast LRMPs include sections with objectives and strategies that aim to improve human well-being as well as sections on land management. The current draft MOs, however, are limited to land and resource management.

Every document includes objectives and/or strategies to guide management of activities that influence ecological integrity and/or human well-being. Some documents are comprehensive; others are focussed on particular values (Tables 2 – 4). For example, several documents cover a core of general, often economic, human well-being values, but the LRMPs include additional specific human well-being values (Table 4). There are numerous areas of overlap amongst documents. Almost all documents include objectives and strategies for terrestrial and hydroriparian ecological integrity, rare ecosystems, grizzly bears and First Nations cultural and traditional resources (Tables 2 and 3). Within values, objectives and strategies included in several documents are sometimes identical (or nearly so), and sometimes inconsistent among documents.

Table 2. Ecological integrity values addressed by objectives in different documents.

Topic of objective	Plan (se	e Table	1 for a	cronyı	n defi	nitions)		·						
	EBMH	HPG	NC	CC	TP	KNT	GFN	HFN	GT	KM	KS	MA	MO1	MO2
Terrestrial ecological integrity / biodiversity	✓		<b>√</b>	<b>√</b>	<b>√</b>	✓	✓	✓					<b>✓</b>	<b>√</b>
Soils and terrain	✓	✓												
Rare ecosystems	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓
Rare and focal species (general)	✓			✓										
Grizzly bear			✓	✓	✓	✓	✓	✓				✓	✓	✓
Kermode bear			<b>✓</b>	✓					✓					
Marbled murrelet			<b>✓</b>	✓										
Northern goshawk			<b>✓</b>	✓										
Ungulates			✓	✓										
Tailed frog				✓										
Seabird												✓		
Hydro-riparian ecological integrity / aquatic resources /fish habitat	✓	<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>~</b>	<b>√</b>

Table 3. Resource use values addressed by objectives in different documents (resource use values mainly apply to human well-being).

Topic of objective	Plan (see	e Table	1 for a	cronyı	n defi	nitions)								
	EBMH	HPG	NC	CC	TP	KNT	GFN	HFN	GT	KM	KS	MA	MO1	MO2
Water resource use				✓										
First Nations cultural and traditional resources	<b>√</b>		<b>√</b>	<b>√</b>	<b>√</b>	<b>✓</b>	~	<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>✓</b>
Harvesting fish and wildlife / guiding, hunting and trapping	<b>√</b>			<b>√</b>										
Tourism and recreation	<b>√</b>		✓	✓								✓		
Scenery			✓	✓								✓		
Timber	✓		✓	✓										
Non-timber forest products	✓		✓											
Mining and energy	✓		✓	✓										
Access and facilities	✓		✓	✓										

Table 4. Human well-being values addressed by objectives in different documents.

Topics addressed by objectives	Plan (see Table 1 for acronym definitions)													
	EBMH	HPG	NC	CC	TP	KNT	GFN	HFN	GT	KM	KS	MA	MO1	MO2
Community viability / population				✓	✓	✓	✓	✓						
Quality of life			✓											
Ability to meet needs (including vulnerable communities)	✓													
Sustenance	✓				✓	✓	✓	✓		<b>✓</b>	<b>✓</b>	✓		
Employment (incl. meaningful)	✓		<b>√</b>	✓	✓	✓	✓	✓						

Income / wages / standard of living		<b>✓</b>	✓	✓	✓	✓	<b>√</b>			
Local share of resources (including First Nations rights)	✓	✓	✓	✓	✓	✓	✓			
Economic growth & diversity		✓	✓	✓	✓	✓	✓		✓	
Investment		✓								
Red Tape		✓								
Community spirit			✓							
Traditional / cultural activities			✓							
Social Services			✓							
Education		✓	✓							
Health			✓							
Infrastructure & community development			✓							
Settlement			✓							
Ability to influence development / public process		✓	✓							
Non-commercial recreation		✓								

Certainty of achieving the broad goals of ecological integrity and human well-being requires a full accounting of influential factors and a complete set of objectives and strategies to manage these factors. In complex ecological and social systems, this certainty is unattainable: many factors that influence ecological integrity and human well-being are impossible to manage (e.g., U.S. demand for timber, global warming) or are beyond the scope of the existing documents (e.g., fish harvest). These factors are generally excluded from any of the land-use documents. While there is little point in setting objectives for unmanageable factors, they should be included in concept maps because they influence estimations of uncertainty and expectations and evaluations of management success. An adaptive management framework requires a complete model as its base. Hence, a future task will be to consider the concept maps for completeness and fill in any factors that are not included in the existing land-use documents.

Across all reviewed documents, objectives for factors that can be managed are relatively comprehensive. Examples of potentially missed human well-being factors, that are well-known and widely discussed, include clean air and substitution of capital for labour. Under ecological integrity, no objectives specifically address inter-tidal waters beyond estuaries.

Strategies are generally less complete than objectives (i.e., several objectives have no strategies or weak strategies). In general, strategies for maintaining ecological integrity are clear and concrete, relative to those for maintaining or improving human well-being. Under human well-being, for example, the methods to promote investment are not developed, neither are amounts of funding for an investment program specified. As another example, the documents indicate that the local share of the economy can be increased by increasing the distribution of resource rents to coastal governments, by increasing joint ventures and by increasing locally-held tenures, but they do not provide any targets or even guidance about how to achieve these increases (except for some ideas about community forests). Many assessments and or plans are proposed to address human well-being (e.g., economic development plan, product marketing plan), indicating the higher level of uncertainty about the strategies that influence human well-being.

Although the land-use documents are relatively comprehensive taken together, no individual document is comprehensive (Table 5). Most notably, draft MOs have no objectives or strategies for human well-being, with the exception of First Nations' traditional resources (perhaps because human well-being/socioeconomic issues were considered to be reflected by the "land-use objectives"; although there is no explicit mention of trade-offs in the MOs). Neither do the draft MOs contain objectives for ecological integrity; the "land-use objectives" listed have direct outcomes and specific targets and thus fit the EBM Working Group Project Steering Committee definition of strategies (see definitions above). This focus on narrow strategy-like "objectives" is intentional. The EBMH has no human well-being strategies, with the exception of sustainable harvest rates. Similarly, G2G agreements (Schedules C and G) have no strategies for human well-being with the exception of First Nations traditional resources. Although Schedules C and G of the G2G agreements include indicators and targets related to human well-being, these indicators are effectiveness, rather than implementation, indicators. Effectiveness indicators list measures of success at achieving an objective, but do not provide any guidance about **how** to achieve the objective. For example, "economic diversity index" is listed as an "indicator" under the objective to diversify the economies of communities (TP Schedule C p4). The "target" is listed as an increase in diversity index score. However, there is no strategy for achieving the target, nor any indicator showing that a strategy has been implemented. Also, G2G agreements have no objectives for resource uses that affect human well-being. The LRMPs cover both general human well-being and specific resource sectors more comprehensively than other documents, providing both objectives and strategies.

Table 5. Subjective assessment of comprehensiveness of different documents (✓✓✓ is most comprehensive, no tick marks means marginal or no coverage).

Document Type	Ecological Objectives	Ecological strategies	Human well-being objectives	Human well-being strategies
EBMH	<b>√√√</b>	<b>√√√</b>	<b>√</b> √	
NC LRMP <sup>7</sup>	<b>√√√</b>	✓	<b>√√√</b>	<b>√</b> √

<sup>&</sup>lt;sup>7</sup> The North Coast LRMP proposed implementation indicators, but did not finish developing all the related targets.

CC LRMP	<b>√√√</b>	<b>√</b> √	<b>√√√</b>	<b>√</b> √
G2G	√√	√√	✓	
Draft MO <sup>8</sup>		<b>√</b> √		

The EBMH covers ecological integrity well. It does not however include some elements in the HPG (e.g., small steep streams with potential for debris transport, connectivity along streams) and it does not provide strategies for particular focal species. The current draft MOs and G2Gs cover ecological integrity less well that the EBMH. They similarly miss addressing small steep streams with potential for debris transport and stream connectivity, and additionally do not address karst ecosystems, ocean spray forest or some types of wetland. They do not comprehensively address protection of critical habitat for rare and focal species, with the exception of grizzly bears. Neither do they address harvesting on unstable terrain. The LRMPs provide objectives for specific rare and focal wildlife species, but no strategies. The North Coast LRMP has many uncompleted strategies for ecological integrity.

Finally, a general gap applies to most of the documents. Frequently, neither the parties responsible for implementation, nor the intended beneficiaries, are clearly identified. The finalised MOs will be implemented under FRPA, which provides guidance on responsibilities for the objectives included under that legislation. However, particularly in relation to human well-being, it is not clear who is responsible for promoting investment, for example. Identification of roles and responsibilities will likely be necessary for effective implementation.

## **Resulting summaries and compilations**

The following sections present the main results produced by this project:

Section 1. Summary of objectives, implementation indicators and targets.

Section 2. Summary of objectives, indicators and plans.

Section 3. Concept maps.

Section 4. Compilation of objectives and strategies.

Section 5. List of effectiveness indicators.

\_

<sup>&</sup>lt;sup>8</sup> Draft MOs usually do not include broad objectives (such as maintain the quality of fish habitat), but rather include narrow "land-use objectives" (such as "adjacent to high value fish habitat, protect reserve zones..."). Such narrow objectives are referred to as strategies in this document (see definitions).

## Section 1: Summary of objectives, implementation indicators and targets.

## First Nations cultural and traditional resources (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Traditional forest resources <sup>9</sup> Identify and maintain traditional forest	completed traditional use studies and stewardship strategies	no target	• 100% (implied) completed	inventory cultural resources	identify sustenance opportunities (CC)
resources.	implemented stewardship strategies	• no target	• 100% (implied) implemented	no target	• no target
	level of involvement/consultation	• no target	100% consultation (implied) regarding traditional use studies	agreements regarding consultation	• 100% involvement in site alteration and reconnaissance survey processes (NC)
Monumental cedar Identify and conserve monumental cedar for First Nations' cultural use.	% of monumental cedars reserved or made available for First Nations' use	• protect suitable monumental cedars where possible	protect suitable monumental cedars including a management zone where possible	general target of protect and conserve cultural resources	• no target
	reserved stands of monumental cedar	reserve stands of monumental cedar where practicable	reserve stands with confirmed presence of monumental cedar with management zone	general target of protect and conserve cultural resources	• no target
	level of consultation	no alteration or harvest of monumental cedars without consultation	• same as MO	no target	• no target
Stand-level retention of redcedar and yellow cedar	% retention of cedar	• no target	• 50% of cedar-leading stands in mature and/or old age classes (GT only)	no target	• no target
Maintain a supply of cedar for cultural/social purposes.	% of retained patches/trees that are cedar	• in clearcuts: % representing pre-harvest proportion; in partial cuts: % representing pre-harvest proportion in first 15% of total retention	• same as MO	• no target	• no target
Traditional heritage resources 10 Identify and protect traditional heritage	% of identified heritage features protected	100% of traditional heritage features including a management zone of	• same as MO	• same as MO	• same as MO

\_

<sup>&</sup>lt;sup>9</sup> "traditional forest resources" means monumental cedar and the other wild plant food, botanical medicines and forest resources that are utilized by a First Nation for food, social or ceremonial purposes, and includes wildlife (MO1 p4, MO2 p3). Monumental cedar are considered separately in this table.

<sup>&</sup>lt;sup>10</sup> "traditional heritage features" means culturally modified trees and the other archaeological and historical artefacts, sites and locations that are important to the cultural practices, knowledge and heritage of a First nation, but does not include traditional forest resources (MO1 p4, MO2 p3). Culturally modified trees are considered separately in this table.

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
features.		sufficient size			
features.	impact at specific cultural heritage sites	• no target	<ul> <li>0 impact to site or values on Island Point, Arthur Island, Baker Inlet (KM, KS, MA)</li> <li>0 impact to features or values on Kinahan, Lawyer and Rachael Islands (MA)</li> <li>0 change to seaweed productivity on Stephens Island (MA)</li> <li>0 impact to features at Kennedy Island Protection Area (MA)</li> </ul>	• no target	• no target
	First Nations involvement in assessment and decision-making process	consultation required for alteration or removal of cultural heritage features	• same as MO	complete agreements regarding consultation	• same as EBMH
Culturally modified trees  Identify and protect culturally modified	protected CMTs	protect selected CMTs including a management zone	• same as MO	general target to protect culturally important areas and heritage feature	no target
trees.	protected CMT areas <sup>11</sup>	• no target	low-risk/default target:     100% protection of CMT     areas; risk-managed target:     no alteration or harvest     without consultation	general target to protect culturally important areas and heritage feature	• no target
	consultation requirements	No alteration or harvest of CMTs without consultation	• same as MO	no target	• no target

-

<sup>&</sup>lt;sup>11</sup> A CMT area is where more than 10 CMTs are all found in close proximity to one another (MO1 p2) / within one tree length of each other (MO2 p2)

## Hydroriparian ecological integrity (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Water quantity  Maintain streamflow within range of natural variability.	equivalent clearcut area (ECA <sup>12</sup> ) in each watershed	<ul> <li>&lt; 20% ECA of forested area for sensitive watersheds; or &gt; 20% based on watershed assessment (MO1)</li> <li>&lt; 20% ECA of watershed area for sensitive watersheds; or &gt; 20% based on watershed assessment (MO2)</li> </ul>	< 20% ECA of forested area for identified anadromous fish-bearing and/or sensitive watersheds	• < 20% (roaded) to 30% (unroaded) ECA of forested area per watershed	• no target
	# and size of dams and diversions	• no target	• no target	no target	• avoid (CC)
	# and size of channels and dykes	• no target	• no target	• no target	• avoid (CC)
Water quality and stream morphology  Maintain channel characteristics (including stream morphology, bank stability and downed wood) and water quality within range of natural variability.	% of active fluvial terrain units reserved including adjacent natural riparian forest buffer <sup>13</sup>	<ul> <li>100% of active fluvial units; 90% of adjacent natural riparian forest; risk-managed target: 80% (MO1)</li> <li>90% of natural riparian forest on active fluvial units; risk-managed target: 80%; 0% of adjacent natural riparian forest (MO2)</li> </ul>	<ul> <li>low-risk/default: 90% of natural amount of mature + old riparian forest within buffer; risk-managed target: 80% (TP, GFN)</li> <li>low-risk/default: 90% of natural amount of mature + old riparian forest on units; risk-managed target: 80% of FRPA riparian 14 (KNT, HFN)</li> </ul>	reserve all active fluvial units and active floodplains including buffer	reserve all active fluvial units and floodplains of unknown activity including buffer (HPG)
	% of wetlands reserved including buffer <sup>15</sup>	<ul> <li>90% of natural riparian forest around wetlands &gt; 1ha; 90% around wetlands 0.25 - 1 ha (MO1)</li> <li>90% of natural riparian forest around wetlands &gt; 0.25 ha; risk-managed</li> </ul>	low-risk/default: 90%     natural riparian forest     around all wetlands; risk-     managed: 80% (TP, GFN)     low-risk/default: 90%     natural riparian forest     around all wetlands; risk-	reserve all wetlands including buffer	reserve all wetlands including buffer <sup>17</sup> (CCAIP)

\_

<sup>&</sup>lt;sup>12</sup> In most documents, ECA quantifies the % of the forested portion of a watershed where the hydrologic response resulting from alteration of the forest by harvesting, fires, insects and disease is equivalent to the hydrologic response of a clearcut; in MO2, it quantifies the % of a watershed ...

<sup>&</sup>lt;sup>13</sup> Unless otherwise noted, "buffer" refers to "a management zone with a width, on average, of 1.5 times the height of the dominant trees" which can be "increased or decreased by 0.5 tree heights in any one location to address site specific values"

<sup>&</sup>lt;sup>14</sup> Revised KNT Schedule F lists risk-managed target as "FRPA riparian", not 80% of FRPA riparian

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
		target FRPA (MO2)	managed: 20% of FRPA riparian <sup>16</sup> (KNT, HFN)		
	% of natural riparian forest buffer <sup>18</sup> around streams in transportation and deposition zones <sup>19</sup>	• 90% (MO1) • 90%; risk-managed target FRPA (MO2)	<ul> <li>low-risk/default: 90%; risk-managed target: 80% (TP, GFN)</li> <li>low-risk/default: 90%; risk-managed: 80% or FRPA (KNT, HFN)</li> </ul>	reserve windfirm riparian buffer around streams in the transportation and deposition zones	• no target
	% of potentially unstable terrain harvested (Class IV and V)	• no target	• no target	• reserve Class V terrain (watershed scale); reserve areas with moderate to high risk of slope failure (stand scale)	• reserve Class IV and V terrains that may deliver sediment to any stream channel (watershed scale); revise based on field assessment (stand scale) (HPG)
	% of natural riparian forest around small steep streams with high potential for debris transport	• no target	• no target	• no target	• 97% (HPG)
	% of source zone with functional riparian forest <sup>20</sup>	• 70%	• 70%	• 70%	no target
	level of water pollutants	• no target	• no target	• no target	• < levels that affect people or the ecosystem except where naturally induced contaminants are above (CC)

<sup>&</sup>lt;sup>15</sup> 1.5 tree height except 1 tree height for wetlands 0.25 – 1 ha in landscape units in Schedule 7 (MO1)

<sup>&</sup>lt;sup>16</sup> Revised Schedule F lists risk-managed target as "FRPA riparian", not 20% of FRPA riparian

<sup>&</sup>lt;sup>17</sup> Unclear strategy in CCAIP: listed under "high value fish habitat", but states "all" wetlands (i.e. not just high-value fish habitat)

<sup>&</sup>lt;sup>18</sup> 1.5 tree heights except 1 tree height for S3 streams in MO1

<sup>&</sup>lt;sup>19</sup> **Deposition zones** include alluvial fans and deltas. Deposition zone channels are unconfined valley bottom rivers characterized by horizontal migration across floodplains and valley bottoms or channels on active alluvial fans. **Transportation zone** channels are typically situated in major valleys, with a valley flat and channels of intermediate size. Transport zone channels may be confined by hillslopes, migrate across valley floors, or alternate between confined and unconfined. They are associated with a discontinuous or continuous floodplain. **Source zone:** The upland area of the watershed, constituting the majority of channel length. Source zone channels will generally be small upland/headwater streams. Strategies for G2G and MO are listed under objectives for "active fluvial units" and "S1-S3 streams"—which generally correspond to transportation and deposition zone channels.

 $<sup>^{20} &</sup>gt; 30$  years old (MO2); > 30 years old and with some large trees adjacent to streams (MO1, G2G)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Hydroriparian biodiversity and productivity: coarse filter  Maintain the natural ecological function	% reduction in natural riparian forest in buffer around each hydroriparian ecosystem below:	• see below	• see below	• see below	• see below
of hydroriparian (i.e. aquatic and terrestrial riparian) ecosystems.	• estuaries	• 0% (5%) <sup>21</sup> (MO1) • 0% (5%) or 10% (20%) <sup>22</sup> (MO2)	• 10% (20%)	• 3% (10%)	• 3% (10%) (HPG)
	• karst	• no target	• no target	• 3% (10%)	• 3% (10%) (HPG)
	• floodplains	• 10% (20%) (MO1)	• 10% (20%)	• 10% (50%)	• 10% (50%) (HPG)
	• fans	• 10% (20%)	• 10% (20%)	• 10% (50%)	• 10% (50%) (HPG)
	• streams >1.5 m with fish	• 10% (20%)	• 10% (20%)	• 10 – 30% <sup>23</sup> (50 – 70%)	• 10 – 30% <sup>24</sup> (50 – 70%) (HPG)
	• small (1 – 3 m) steep (>20%) streams/gullies with high susceptibility to debris flow	• no target	• no target	• no target	• 3% (10%) (HPG)
	• small (1 – 3 m) steep streams/gullies (>20%) with distinct microclimate <sup>25</sup>	no target	no target	• 10% (50%)	• 10% (50%) (HPG)
	• all other streams <sup>26</sup>	• no target	• no target	• 30% (70%)	• 30% (70%) (HPG)
	ocean spray forest	• no target	• no target	• 30% (70%)	• 30% (70%) (HPG)
	• lakes <sup>27</sup>	• 10% (20%)	• 10% (20%)	• 30% (70%)	• 30% (70%) (HPG)
	• wetlands <sup>28</sup>	• 10% (20%)	• 10% (20%)	• 30% (70%)	• 30% (70%) (HPG)
	• forested swamps <sup>29</sup>	• 30% (40%)	• 30% (40%)	• 10% (50%)	• 10% (50%) (HPG)
	• bogs	• no target	• no target	• 30% (70%)	• 30% (70%) (HPG)
	• fens	no target	• no target	• 30% (70%)	• 30% (70%) (HPG)

\_

<sup>&</sup>lt;sup>21</sup> For MO1, MO2 and G2G targets, first number is low-risk/default target and number in parentheses is risk-managed target; for EBMH and HPG targets, numbers apply to different scales: first number is subregional target; the number in parentheses is a high-risk threshold allowed at the watershed scale provided that the average across watersheds meets subregional targets

<sup>&</sup>lt;sup>22</sup> For MO1, targets for all estuaries are included under "High value fish habitat"; for MO2, targets for some estuaries are included under "High value fish habitat" and others are included under "fish streams, lakes and estuaries", although all fish-bearing estuaries appear to be defined as "High value fish habitat" (MO2 p2).

<sup>&</sup>lt;sup>23</sup> Depending upon the presence of a floodplain

<sup>&</sup>lt;sup>24</sup> Depending upon the presence of a floodplain

<sup>&</sup>lt;sup>25</sup> no target for natural riparian forest in MO1, MO2, G2G; target for forest in source zone 70% > 30 years

<sup>&</sup>lt;sup>26</sup> Targets exist for source zone forest but not for natural riparian forest; in addition, there are no objectives or strategies for small low-gradient streams in MO1, MO2, G2G

Lakes > 1 ha (MO1; 0.25 – 1 ha have 1 tree height buffer); > 0.25 ha (MO2); no minimum size in other documents

<sup>&</sup>lt;sup>28</sup> Wetlands > 1 ha (MO1; 0.25 – 1 ha have 1 tree height buffer); > 0.25 ha (MO2); no minimum size in other documents

Forest swamps > 1 ha (MO1; 0.25 – 1 ha have 1 tree height buffer); > 0.25 ha (MO2); no minimum size in other documents

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Fine filter hydroriparian biodiversity: Fish and high-	% natural riparian forest within 1.5 tree heights around high-value fish habitat	• 100%	• 100%	• 100%	• no target
value fish habitat	% of watershed harvested in 3 years in	• no target	• no target	• 10%	• no target
Protect and sustain high-value fish habitat.	small watersheds				
Hydroriparian biodiversity: connectivity	% streams with natural cover along length with process zones	no target	no target	no target	• > 60% (HPG)
This is a sub-objective of Design harvest to approximate natural disturbance pattern and distribution.					

## **Terrestrial ecological integrity (S1)**

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Ecosystem representation  Maintain the natural diversity of species ecosystems and seral stages.	% of natural abundance of old forest <sup>30</sup> per ecosystem type <sup>31</sup> .	30% for common and very common ecosystems; 70% for modal, rare and very rare (LU scale).	• same as MO	30% per watershed; 50% per landscape; 70% per territory/subregion	30% for common and very common ecosystems; 70% for modal; 90 % for rare and very rare (landscape scale; NCAIP)
	% of mid-seral forest <sup>32</sup> in each ecosystem type.	• < 50% per LU, if practicable	• < 50% per LU	• <50% per watershed	• < 50% (CCAIP, NCAIP)
	% of early-seral forest <sup>33</sup> in each ecosystem type	• < 50% per LU (MO1)	• same as MO1 (TP, GFN)	no target	no target
Rare ecosystems <sup>34</sup> Protect known red- and blue-listed and	% of known red-listed plant communities protected	• 95-100% of each occurrence	• same as MO	100% unless prescription demonstrates conservation	• 100% (CCAIP, NCAIP)
regionally rare ecosystems.	% of known blue-listed plant communities protected	• >70% of each type per LU (MO1); 70% of each occurrence (MO2)	• same as MO1	• same as MO1	• >70%, up to 102 ha (NCAIP)
	% of known non-listed, naturally rare	no target	• no target	• 100%	• 100% (NCAIP)

\_

<sup>&</sup>lt;sup>30</sup> Old forest is >180 yr (MO2, June KNT, HFN) or >250 yr (MO1, EBMH).

<sup>&</sup>lt;sup>31</sup> Ecosystem type may be defined by BEC site series (field verified or predicted) or by some equivalent ecosystem surrogate representing the full range of site conditions.

<sup>&</sup>lt;sup>32</sup> Mid-seral forest is < 80 yr old in the CWH, < 100 yr old in the ICH and < 120 yr old in the ESSF and MH (MO).

<sup>&</sup>lt;sup>33</sup> Early-seral forest is <40 yr old (MO).

<sup>&</sup>lt;sup>34</sup> Rare ecosystems are those ecosystems that are restricted in number and area. The Conservation Data Centre compiles lists of rare ecosystems for British Columbia: red-listed ecosystems typically have 20 or fewer good examples in British Columbia; blue-listed have fewer than 100. Not all rare ecosystems are listed by CDC (based on NC and EBMH).

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
	ecosystems protected				
Habitat for rare and focal species 35  Maintain adequate and sufficiently distributed habitat to maintain healthy	% of critical habitat <sup>36</sup> of red- and blue- listed and focal wildlife species protected	no target	• no target	• 100%	• no target
populations and individuals of red- and blue-listed and focal species.	% of key wildlife migration/movement corridors protected	no target	no target	• 100% of key corridors	no target
Stand structure Retain forest structure and diversity at the stand level	% of cutblock retained as standing trees, within and adjacent to clearcuts or within partial cuts.	• ≥ 15% (area or basal area not specified)	• ≥ 15% of basal area	• 15-70%	no target
	% of retained standing trees that fall within cutblock boundaries in cutblocks larger than 15ha.	• at least 50%	• same as MO	• no target	• no target
Tree species composition  Maintain site productivity and a natural species mix.	% of natural occurrence of each tree species in managed early seral forest.	no target	• no target	existing silvicultural requirements	within range of natural variability for deciduous trees
Islands	no indicator	•37	•	•	•
Exotic species	no indicator	•	•	•	•
Soils and terrain Conserve soil productivity and protect	% Class IV and V terrain with moderate to high risk of slope failure reserved	no target	• no target	• 100%	no target
unstable slopes.	% of cutblock area with detrimental site disturbance	not target but see FRPA regulations	• no target	• ≤ 5%	• no target
	% of cutblock area covered with permanent access structures	not target but see FRPA regulations	• no target	• < 7%	• no target
Degraded sites	no indicator	•	•	•	•

\_

<sup>&</sup>lt;sup>35</sup> See also individual species: grizzly bear, tailed frog, rhinoceros auklet, marbled murrelet, northern goshawk, Kermode bear, mountain goats, moose and black-tailed deer.

<sup>&</sup>lt;sup>36</sup> An ecosystem or particular ecosystem element occupied or used by a species, or local population, that is essential for its health and/or long-term persistence (EBMH p70). 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.} (NC p201).

<sup>&</sup>lt;sup>37</sup> Dashes indicate that no indicators and consequently no targets exist for an objective. In these cases, the full text of the objective is also omitted. See the compilation section for details about objectives.

# Specific rare and focal species (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Tailed frog	no indicator	•	•	•	•
Rhinoceros auklet This is a sub-objective of Maintain adequate and sufficiently distributed	% impact to rhinoceros auklet habitat	• no target	0% additional impact (MA)	• no target	no target
habitat to maintain healthy populations and individuals of red- and blue-listed and focal species					
Marbled murrelet	no indicator	•	•	•	•
Northern goshawk	no indicator	•	•	•	•
Black (Kermode) bear—forage This is a sub-objective of Maintain	% early and mid seral in management area	no target	• 30% early seral by site series; 40% mid seral by site series (GT)	• no target	no target
adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species	average % crown closure in each managed stand treatment unit	• no target	• ≤70% (GT)	• no target	• no target
Black (Kermode) bear—critical habitat  This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species.	% critical habitat altered	• no target	default target: 0%     alteration; risk-managed     target: site specific     planning (GT)	• no target	• no target
Black (Kermode) bear— displacement	% resource development late August – October in Gribble/Princess Royal Kermode Management Area	• no target	• 0% (GT)	• no target	• no target
This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal species.	% bear viewing outside identified areas in Gribble/Princess Royal Kermode Management Area	• no target	• 0% (GT)	• no target	• no target
Black (Kermode) bear—human- induced mortality	bear hunting mortality on Gribbell Island or within 1,000 m of Whalen Creek estuary	• no target	• 0 killed (GT)	• no target	• no target
This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal	, ,				

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
species.					
Mountain goat	no indicator	•	•	•	•
Moose and blacktailed deer	no indicator	•	•	•	•

# **Grizzly bears (S1)**

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Grizzly bear—population conservation  This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	% of at-risk GBPUs (i.e., population estimates below targets) with active recovery strategies.	• no target	• no target	• no target	• 100% (implied; CC)
Grizzly bear—benchmark populations This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	# of (or area occupied by) "benchmark" populations protected from hunting.	no target	one—the Ahnuhati GBMA (KNT)	no target	<ul> <li>one—the Skeena-Nass GBMA (NC)</li> <li>two—the Khutze and Ahnuhati GBMAs (CC).</li> </ul>
Grizzly-bear—critical habitat This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	% of Class 1 habitat protected	90% of habitat identified in Schedule 2 (MO1)     100% of habitat identified on Schedule 2, with exceptions for roads, infrastructure and safety (MO2)	<ul> <li>90% in the portion of the North Coast occupied by grizzly bears and follow Identified Wildlife Measures and use landscape and stand level reserves in the Central Coast (TP, GFN)</li> <li>default: 80%, of LU; riskmanaged: site specific basis (KNT)</li> <li>default 100%; riskmanaged: site specific basis if necessary for access or safety (HFN)</li> </ul>	• no target	• no target
	% of Class 2 habitat protected	<ul> <li>45% of habitat identified on Schedule 2 (MO1)</li> <li>no target in MO2</li> </ul>	45% in the portion of the North Coast occupied by grizzly bears and follow Identified Wildlife Measures and use	no target	• no target

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
			landscape and stand level reserves in the Central Coast (TP, GFN)  • default: 40%, of LU; risk-managed: site specific basis (KNT)  • default 50% for specified landscapes; risk-managed: site specific basis if necessary for access or safety (HFN)		
Grizzly bear—landscape-level forage supply  This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	% of landscape made up of mid-seral forest	no target	• <50% of Variant in Sommerville (MA)	• no target	<ul> <li>&lt; 50% of Variant (NC)</li> <li>&lt; 50% of important landscapes (CC)</li> </ul>
Grizzly bear—stand-level forage	stocking density on rich, wet sites <sup>38</sup>	• no target	• no target	• no target	lower than standard (NC, CC)
supply This is a sub-objective of Protect known	% of rich, wet sites with cluster planting	• no target	• no target	no target	• 100% (implied; NC, CC)
red- and blue-listed/regionally rare species and their habitats.	% of highly effective grizzly bear habitat treated with aerial herbicide	• no target	• no target	• no target	• 0% (NC, CC)
Grizzly bear—displacement and mortality from roads  This is a sub-objective of Protect known	timber harvesting and transportation activity between May 15 and Oct 15	no target	• none within 2 km of Khutzeymateen Inlet, extending to Crow Inlet; none in mouse creek (MA)	• no target	• no target
red- and blue-listed/regionally rare species and their habitats.	% of watershed with restricted public access	no target	• no target	no target	introduce controls in identified watersheds and landscape units (NC/CC)
	% of road length with visual screening	no target	• no target	no target	provide visual screening (NC/CC) in identified areas (CC)
Grizzly bear—displacement by and habituation to people This is a sub-objective of Protect known	commercial recreation user days per square kilometre during the active season.	no target	• < 1500 (May 15 - Oct 15) at Tsamspanaknok Bay (MA)	no target	• default of < 1500 (April 1 - Oct 31); risk-managed < 5000 (April 1 - Oct 31) (NC, CC)

-

Rich and wetter sites are defined in the CWHms1 and CWHms2 as 06, 07, 08, 09 and 11 site series; CWHds1 and CWHds2 as 07, 08, 09, 10 and 12 site series; 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 (CC p43, NC p112).

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
red- and blue-listed/regionally rare species and their habitats.	# of land-based bear viewing sites.	• no target	• one in the Khutzeymateen Inlet Protection Area (MA)	• no target	• to be determined by First Nations (NC)
	permanent, land-based overnight commercial recreation facilities	• no target	• zero in the Khutzeymateen Inlet Protection Area (MA)	• no target	• no target
	# of tenures for random, land-based bear viewing	no target	• no target	no target	No tenures (NC)
Grizzly bear—displacement by aircraft	air-based bear viewing hours	• no target	no target	• no target	• zero hours (NC, CC)
This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.					
Grizzly-bear—displacement by water-craft	no indicator	•	•	•	•
Grizzly bear—negative human- bear interaction	funding for education programs to reduce negative human-bear interactions	no target	• no target	no target	sufficient to initiate education program (NC/CC)
This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.					

# Human well-being (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Human well-being	no indicator	•	•	•	•
Flood protection	no indicator	•	•	•	•
Domestic and industrial access to water	no indicator	•	•	•	•
Health services	# and type of health education programs	• no target	• no target	• no target	• develop new (CC)
This is a sub-objective of the core EBM objective of Achieve the health, wealth	# and type of recreation programs	• no target	no target	• no target	• maintain and improve (CC)
and educational status required for a high quality and secure life for both aboriginal and non-aboriginal people.	# and type of recreation facilities	• no target	• no target	• no target	maintain and improve (CC)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Cultural and social activity  This is a sub-objective of the core EBM objective of Create a strong and diverse mix of non-profit and voluntary organizations and a vibrant set of traditional, cultural, and non-market activities within communities and across the region.	funding to not-for-profit organisations, by organization type	• no target	• no target	• no target	• some support (CC)
Social services	no indicator	•	•	•	•
Physical infrastructure  This is a sub-objective of the core EBM objective of Build stable, resilient, well-serviced, and peaceful communities in coastal British Columbia.	type (e.g., road, ferry) and season (e.g., all year, summer) of access to each coastal community	• no target	• no target	• no target	year round ferry service to Bella Bella and Klemtu; summer ferry service to Bella Coola, Ocean Falls and other coastal communities; highway links to Bella Coola and Port Hardy; daily air service to coastal communities; marine freight service to coastal communities and activity centres (CC)
	# and condition of community sports and gathering facilities.	no target	• no target	• no target	current number and condition (implied) (CC)
Settlement	no indicator	•	•	•	•
Community influence	no indicator	•	•	•	•
Industry consultation This is a sub-objective of the core EBM	central place for consolidated, geo- referenced land-rights and interests	• no target	no target	• no target	one central place (implied; NC)
objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks	# of consultations with First Nations per 100 new developments	no target	no target	• no target	no specific target (NC)
Public decision-making This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution	% of development applications reviewed by First Nations	no target	no target	• no target	• greater than zero (NC)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
of benefits, costs and risks					
Meeting needs	no indicator	•	•	•	•
Annual income	no indicator	•	•	•	•
Economic growth and diversity Diversify the economies of First Nations' and other communities in the Plan Area.	funding for marketing program	• no target	• no target	• no target	sufficient to develop program (CC)
Value added	no indicator	•	•	•	•
Waste wood	no indicator	•	•	•	•
Investment This is a sub-objective of Diversify the	funding for program to attract investment	no target	• no target	• no target	sufficient to develop program (NC/CC)
economies of First Nations' and other communities in the Plan Area.	value of tax incentives (etc.) promoting research and development	no target	no target	• no target	sufficient to promote innovation (NC)
Bureaucracy This is a sub-objective of Diversify the economies of First Nations' and other communities in the Plan Area.	funding for reviewing development proposals, per proposal and by proposal type	• no target	• no target	• no target	adequate funding (NC)
Business infrastructure and services This is a sub-objective of Diversify the economies of First Nations' and other communities in the Plan Area.	% of businesses with access to basic telecommunications services	• no target	• no target	• no target	• 100% (implied; CC)
Local economic benefit	no indicator	•	•	•	•
Resource rent  This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to contribute to local and provincial economies.	% of resource rent collected from the coast that is distributed to coastal communities, by sector and by community	• no target	• no target	a fair share of benefits from local resource extraction	maximum amount of stumpage revenue (NC)
	# of protocols with First Nations that address resource rent	• no target	• no target	• no target	more than current number (implied; NC)
Joint ventures This is a sub-objective of Promote Plan	# of business partnerships by sector and community	no target	• no target	• no target	more than current number (implied; CC)
Area resource development by local	# of protocols addressing business	no target	• no target	• no target	more than current number

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
individuals and communities, to contribute to local and provincial economies.	partnerships by sector and First Nation				(implied; NC)
Resource/tenure allocation  This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to contribute to local and provincial economies.	% of tenures (e.g., % of AAC or % of lodge sites) held by coastal residents and communities, by community and by sector.	• no target	• no target	• no target	more than current proportion (implied; CC/NC)
Employment	# of conservation officer positions	• no target	• no target	• no target	• more than current number (implied; NC)
Improve prospects for employment in the Plan Area.	# of monitoring support positions	• no target	no target	• no target	more than current number (implied; NC)
	# of protocols with First Nations addressing employment	• no target	• no target	• no target	more than current number (implied; NC)
Education and training. This is part of the core EBM objective to	amount of funding for new education programs	• no target	• no target	• no target	sufficient to address identified education needs (NC/CC)
Achieve the health, wealth and educational status required for a high quality and secure life for both aboriginal and non-aboriginal people.	# of protocols between mineral and energy companies and First Nations addressing education, by sector and First Nation	• no target	no target	• no target	more than current number (implied; NC)
	funding for internet skill development courses	no target	• no target	no target	sufficient for course (implied; CC)
Population growth	no indicator	•	•	•	•

# Harvesting fish and wildlife (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Harvesting opportunity  Maintain sustenance, commercial and recreational, hunting, fishing and trapping opportunities.	% of fishing, hunting and trapping areas negatively impacted by development	no target	minimize impacts to trapping (KM, KS, MA)	no target	minimize impacts (CC)
Collaboration amongst users This sub-objective is part of the core	% of developers and non-exclusive tenure applicants receiving guiding tenure maps	• no target	• no target	• no target	• 100% (implied; CC)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
EBM objective to Ensure a fair distribution of benefits, costs and risks.	% of affected trappers and guides contacted prior to development	no target	no target	no target	• 100% (implied; CC)
	strategies to protect guiding infrastructure in forest stewardship plans	no target	no target	no target	• completed (CC)
Resource/tenure allocation— trapping and guiding This is a sub-objective of Promote Plan Area resource development by local individuals and communities.	% of trapping and guiding tenures held by coastal people (by community or First Nation and by tenure type)	• no target	• no target	• no target	priority for First Nations and local communities (CC)
Resource/tenure allocation— First Nations sustenance	no indicator	•	•	•	•
Sustainable populations.  Maintain healthy populations/sub-populations of harvested fish and	% of wildlife populations threatened by hunting that are protected by access restrictions.	• no target	• no target	• no target	to be determined by consultation with First Nations and local communities (CC)
wildlife.	% of significant fishing, hunting and trapping areas protected with no-development buffers or special management provisions.	no target	no target	to be determined by local users	• same as EBMH (CC)
	funding for monitoring and enforcement of hunting, trapping and guiding.	no target	no target	no target	adequate funding (CC)
Inventory, research and monitoring	no indicator	•	•	•	•

# Non-timber forest products (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Non-timber forest product sector growth and diversity	no indicator	•	•	•	•
Marketing	no indicator	•	•	•	•
Harvesting opportunity  Maintain a diversity of harvesting opportunities for non-timber forest products.	restrictions on harvesting pine mushrooms in Tweedsmuir Park	• no target	• no target	• no target	• 0 restrictions (CC)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Resource/tenure allocation This sub-objective is part of Recognize	% of area available for plant harvesting by First Nations and local communities	• no target	no target	• no target	• 100% of plan area (CC)
and accommodate aboriginal rights and title.	protocols with First Nations addressing management of non-commercial, non-timber forest products	• no target	• no target	• no target	• promote the development of protocols (CC)
Harvest rate	amount (volume or area) harvested per decade, by product type and quality	no target	no target	estimated sustainable amount	• no target
Do not exceed sustainable harvest levels.	decade, by product type and quanty			amount	
Forest-product productivity	% of degraded ecosystems treated	• no target	• no target	• no target	• initiate rehabilitation program (CC)
Maintain forest productivity.					program (c c)
Forest-product contamination	% of sites with NTFPs and pests or	• no target	• no target	• no target	• decreased use of pesticides
This is a sub-objective of Maintain viable, diversified and profitable businesses in the non-timber harvest sector.	weeds that are treated with pesticides				
Research and development This is a sub-objective of Maintain viable, diversified and profitable	funds allocated to lobbying federal government for assistance in developing NTFP industry	no target	no target	• no target	sufficient funds to allow lobbying (implied; CC)
businesses in the non-timber harvest sector.	funds for new NTFP research and development centre	• no target	no target	• no target	• sufficient to establish centre (implied; CC).
	funds for research program studying cultivation of NTFPs	no target	no target	• no target	• sufficient to establish research program (implied; CC)
Education and training	funding for NTFP awareness program	no target	• no target	• no target	• sufficient (implied; CC)
This is a sub-objective of Maintain viable, diversified and profitable businesses in the non-timber harvest sector.					

# Forestry and timber (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Forest sector growth and diversity	no indicator	•	•	•	•
Investment	no indicator	•	•	•	•
Marketing	no indicator	•	•	•	•
Harvesting opportunity	no indicator	•	•	•	•
Resource/tenure allocation  This is a sub-objective of Promote Plan Area resource development by local individuals and communities.	% of tenures held by coastal communities and First Nations, by community and First Nation.	• no target	• no target	• no target	timely establishment of new tenures (NC)
Harvest rate	amount harvested per decade	• no target	stable or increasing (as bounded by AAC)	estimated sustainable harvest level	• no target
Do not exceed sustainable harvest levels.	harvest profile	• no target	• no target	reflects inventory profile	• no target
Forest productivity  Maintain forest productivity.	% of harvested area classified as regenerating (including pre-1987 backlog as separate category)	no target	• no target	existing silvicultural requirements	<ul> <li>all recently harvested sites; backlog where practicable (CC)</li> <li>all watersheds harvested pre-1987 (backlog) (NC)</li> </ul>
	% of harvested area classified as free growing (including backlog as separate category)	• no target	• no target	existing silvicultural requirements.	<ul> <li>all recently harvested sites; backlog where practicable (CC)</li> <li>all watersheds harvested pre-1987 (backlog) (NC)</li> </ul>
	area treated by type of intensive silviculture	• no target	• no target	• no target	• sufficient to enhance timber production (CC)
	% of degraded sites rehabilitated	• no target	no target	• no target	• 100% (implied; CC)
Research and monitoring	funding for research related to EBM	• no target	• no target	• no target	amount needed to address EBM implementation (CC)
This is a sub-objective of Maintain viable, diversified and profitable businesses in the timber sector.	funding for incentive program to encourage industrial innovation	no target	• no target	• no target	sufficient to establish program (implied; CC)
Community influence	no indicator	•	•	•	•

# Mineral and energy resources (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Mineral and energy sector growth and diversity	no indicator	•	•	•	•
Resource extraction opportunity	no indicator	•	•	•	•
Collaboration amongst users	no indicator	•	•	•	•
Community influence	no indicator	•	•	•	•
First Nations influence This is a sub-objective of the core EBM	% of development permits reviewed by affected First Nation	no target	• no target	• no target	• 100% (implied; NC)
objectives to Recognize and accommodate aboriginal rights, title and interests.	% of development projects with appropriate consultation	• no target	• no target	• no target	• 100% (implied; NC)
Local economic benefit	no indicator	•	•	•	•
Education and training.  This sub-objective is part of the core EBM objective to Achieve the health, wealth and educational status required for a high quality and secure life.	# of trainee positions offered per year	• no target	• no target	• no target	increase above current level (implied; CC)
Inventories, research and monitoring	no indicator	•	•	•	•
Ecological integrity of mine sites  Mining, from exploration to post-	% of developments having CEEA screenings and full CEEAs	• no target	• no target	• 100% screened (implied)	• no target
closure, maintains ecological integrity.	# of regulation infractions	• no target	no target	• no target	• no regulation infractions (NC)
Ecological integrity— reclamation of mine sites This is a sub-objective of Mining, from exploration to post-closure, maintains ecological integrity.	# of finished mine and aggregate sites needing reclamation (including related infrastructure).	• no target	• no target	• no target	<ul> <li>no sites requiring reclamation (NC)</li> <li>follow approved closure plans for existing sites; remediate abandoned sites if feasible (CC)</li> </ul>
Visual impacts of mine sites	no indicator	•	•	•	•

# Tourism and outdoor recreation (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Tourism sector growth and diversity	no indicator	•	•	•	•
Investment	no indicator	•	•	•	•
Collaboration amongst users	no indicator	•	•	•	•
Tourism opportunity	no indicator	•	•	•	•
Recreation opportunity  No objectives in EBMH, G2G or MO.	#, type and condition of recreation facilities	• no target	• no target	• no target	• maintain and increase (NC)
	accessibility of recreation sites, by access type (e.g., summer, winter, road, water) and site type (e.g., backcountry skiing trails, snow machining areas)	no target	• no target	• no target	<ul> <li>maintain and increase accessibility (NC)</li> <li>do not block access; provide access to special features (CC)</li> </ul>
Diversity of outdoor experience This sub-objective is part of Develop and support viable tourism business opportunities.	level of use and type of experience	no target	• no target	• no target	see Table 24 (NC p148)     for target levels and     examples of appropriate     types of use
Semi-primitive experience  Maintain the recreation experience in identified areas.	road density	no target	<ul> <li>zero on Kinahan, Lawyer and Rachael islands and in the Kennedy Island Protection Area (MA)</li> </ul>	• no target	• no target
	area harvested or salvaged	• no target	• zero on Kinahan, Lawyer and Rachael islands (MA)	• no target	• no target
	# of permanent, overnight, commercial, recreation facilities	• no target	• zero in Kennedy Island and Lucy Islands Protection Areas; zero land-based in the Khutzeymateen Protection Area; one in Kinahan, Lawyer and Rachael Islands (MA)	• no target	• no target
	maximum size of commercial recreation groups	• no target	• ten on Kinahan, Lawyer and Rachael Islands (MA)	• no target	• no target
	areas with sanitation facilities	no target	• establish facilities in Lucy Islands Protection Area (MA)	• no target	• no target

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Bear viewing  Maintain high quality bear viewing opportunities.	# of land-based bear viewing sites in Khutzeymateen	• no target	• one (MA)	• no target	• no target
	harvesting and log transportation activity between May 15 and October 15	no target	• none within 2 km of Khutzeymateen Inlet, extending to Crow Inlet; none in Mouse Creek (MA)	no target	• no target
Scenery	no indicator	•	•	•	•
Acoustics  This sub-objective is part of Conserve and/or enhance recreation resources.	% of developments, affecting fixed- location tourism operators, having adequate consultation	no target	• no target	no target	• 100% (implied; CC)
Waterways This sub-objective is part of Conserve and/or enhance recreation resources.	forest buffers around identified anchorages	• no target	• no target	• no target	maintain (CC)
	% of potential industrial developments in identified anchorages that undertake consultation	no target	• no target	no target	• 100% (implied;CC)
Integrity of natural and cultural features	application for National Historic Site Designation for Port Essington	no target	• complete by June 2006 (MA)	• no target	no target
Ensure that tourism development minimizes impacts to cultural and ecological values.					
Community influence This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks	# and scope of cooperative management agreements/partnerships with First Nations, relating to recreation management	no target	• no target	no target	more than zero (implied; CC)
	amount of funding of government agencies and First Nations for assessment, management and enforcement of recreation	no target	• no target	• no target	• sufficient (CC)
Local economic benefit  This is a sub-objective of the core EBM objectives to Ensure a fair distribution of benefits, costs and risks and to Recognize and accommodate aboriginal rights and title and interests.	# and scope of protocols with First Nations, relating to tourism	no target	• no target	no target	more than current number (CC/NC)

# Scenery (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Alteration of scenery  Maintain natural scenic quality.	maximum % of each perspective view visibly altered in each visual quality zone	• no target	• same targets as NC LRMP in Sommerville; 5% in travel route to Khutzeymateen inlet; 8% in Work Channel (MA)	• no target	2% in Class I; 5% in Class II; 8% in Class III; agreed target in Class IV (NC/CC)
	maximum % of shoreline buffer visibly altered in each visual quality zone	no target	• < 50% deviation from natural occurrence of shoreline forest (in all zones; MA)	no target	no visual evidence of alteration (except for infrastructure) in Wild Zone; minor gaps visible in remaining three visual zones (CC)
Collaboration amongst users This sub-objective is part of Diversify the economies of First Nations' and other communities in the Plan Area.	% of forest development plans reviewed by tourism stakeholders	• no target	• no target	• no target	• 100% (NC)
	joint forestry-tourism committee	no target	• no target	no target	• established (CC)
Restoration of scenery	no indicator	•	•	•	•
Research and monitoring This sub-objective is part of Maintain natural scenic quality.	funding (and in-kind commitments) for adaptive management study examining perceptions of altered scenery	• no target	• no target	• no target	sufficient for three operational trials (NC)

# Access (S1)

Element and objective	Implementation indicator	MO target	G2G target	EBMH target	Other target
Access restrictions  Commercial and public access and facilities minimize impacts to cultural and ecological values.	% of significant cultural and ecological features protected by no-access/no-facility zones	• no target	• no target	• 100% (implied)	• no target
Access requirements	no indicator	•	•	•	•

### Section 2: Summary of objectives, indicators and plans

#### First Nations cultural and traditional resources (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
<b>Traditional forest resources</b> <sup>39</sup> Identify and maintain traditional forest resources.	• None	<ul> <li>Completed traditional use studies and stewardship strategies</li> <li>Implemented stewardship strategies</li> <li>Level of involvement/consultation</li> </ul>	% protection of known cultural sites     Harvest levels of traditional cultural resources	• None
Monumental cedar Identify and conserve monumental cedar for First Nations' cultural use.	• None	<ul> <li>% of monumental cedars reserved or made available for First Nations' use</li> <li>Reserved stands of monumental cedar</li> <li>Level of consultation</li> </ul>	• None	Traditional forest resources
Stand-level retention of redcedar and yellow cedar  Maintain a supply of cedar for cultural/social purposes.	• None	<ul> <li>% retention of cedar</li> <li>% of retained patches/trees that are cedar</li> </ul>	• None	Traditional forest resources
Traditional heritage resources 40 Identify and protect traditional heritage features.	<ul> <li>inventories of traditional heritage features (MOs)</li> <li>cultural heritage studies (TP/HFN/GFN)</li> </ul>	<ul> <li>% of heritage features protected</li> <li>Impact at specific cultural heritage sites</li> <li>First Nations involvement in assessment and decision-making process</li> </ul>	Degree of implementation of First Nations cultural heritage policies     % protection of known heritage features	• None
Culturally modified trees  Identify and protect culturally modified trees.	• None	<ul> <li>Protected CMTs</li> <li>Protected CMT areas<sup>41</sup></li> <li>Consultation requirements</li> </ul>	• None	Traditional heritage resources

<sup>&</sup>lt;sup>39</sup> "traditional forest resources" means monumental cedar and the other wild plant food, botanical medicines and forest resources that are utilized by a First Nation for food, social or ceremonial purposes, and includes wildlife (MO1 p4, MO2 p3). Monumental cedar are considered separately in this table.

<sup>&</sup>lt;sup>40</sup> "traditional heritage features" means culturally modified trees and the other archaeological and historical artefacts, sites and locations that are important to the cultural practices, knowledge and heritage of a First nation, but does not include traditional forest resources (MO1 p4, MO2 p3). Culturally modified trees are considered separately in this table.

<sup>&</sup>lt;sup>41</sup> A CMT area is where more than 10 CMTs are all found in close proximity to one another (MO1 p2) / within one tree length of each other (MO2 p2)

#### **Hydroriparian ecological integrity (S2)**

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Water quantity  Maintain streamflow within range of natural variability.	• None	<ul> <li>Equivalent clearcut area (ECA<sup>42</sup>) in each watershed</li> <li># and size of dams and diversions</li> <li># and size of channels and dykes</li> </ul>	<ul> <li>ECA in watershed and initiation zone.</li> <li>Index of road density/ECA in initiation zone.</li> </ul>	• None
Water quality and stream morphology Maintain channel characteristics (including stream morphology, bank stability and downed wood) and water quality within range of natural variability.	• None	<ul> <li>% of active fluvial terrain units reserved including adjacent natural riparian forest buffer<sup>43</sup></li> <li>% of wetlands reserved including buffer<sup>44</sup></li> <li>% of natural riparian forest buffer<sup>45</sup> around streams in transportation and deposition zones<sup>46</sup></li> <li>% of potentially unstable terrain harvested (Class IV and V)</li> <li>% of natural riparian forest around small steep streams with high potential for debris transport</li> <li>% of source zone with functional riparian forest<sup>47</sup></li> <li>Level of water pollutants</li> </ul>	<ul> <li>% riparian forest harvested in process zones.</li> <li>Streamflow, channel morphology, and water quality.</li> </ul>	• None

<sup>42</sup> In most documents, ECA quantifies the % of the forested portion of a watershed where the hydrologic response resulting from alteration of the forest by harvesting, fires, insects and disease is equivalent to the hydrologic response of a clearcut; in MO2, it quantifies the % of a watershed ...

<sup>&</sup>lt;sup>43</sup> Unless otherwise noted, "buffer" refers to "a management zone with a width, on average, of 1.5 times the height of the dominant trees" which can be "increased or decreased by 0.5 tree heights in any one location to address site specific values"

<sup>&</sup>lt;sup>44</sup> 1.5 tree height except 1 tree height for wetlands 0.25 – 1 ha in landscape units in Schedule 7 (MO1)

 $<sup>^{45}</sup>$  1.5 tree heights except 1 tree height for S3 streams in MO1

<sup>&</sup>lt;sup>46</sup> **Deposition zones** include alluvial fans and deltas. Deposition zone channels are unconfined valley bottom rivers characterized by horizontal migration across floodplains and valley bottoms or channels on active alluvial fans. **Transportation zone** channels are typically situated in major valleys, with a valley flat and channels of intermediate size. Transport zone channels may be confined by hillslopes, migrate across valley floors, or alternate between confined and unconfined. They are associated with a discontinuous or continuous floodplain. **Source zone:** The upland area of the watershed, constituting the majority of channel length. Source zone channels will generally be small upland/headwater streams. Strategies for G2G and MO are listed under objectives for "active fluvial units" and "S1-S3 streams"—which generally correspond to transportation and deposition zone channels.

<sup>&</sup>lt;sup>47</sup> > 30 years old (MO2); > 30 years old and with some large trees adjacent to streams (MO1, G2G)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Hydroriparian biodiversity and productivity: coarse filter  Maintain the natural ecological function of hydroriparian (i.e. aquatic and terrestrial riparian) ecosystems.	• None	• % reduction in natural riparian forest in buffer around hydroriparian ecosystems: estuaries, karst, floodplains <sup>48</sup> , fans, streams >1.5 m with fish, small (1 – 3 m) steep (>20%) streams/gullies with high susceptibility to debris flow, small (1 – 3 m) steep streams/gullies (>20%) with distinct microclimate <sup>49</sup> , All other streams <sup>50</sup> , ocean spray forest, lakes <sup>51</sup> , wetlands <sup>52</sup> , forested swamps <sup>53</sup> , bogs and fens.	Aquatic invertebrate diversity and abundance	• None
Fine filter hydroriparian biodiversity: Fish and high-value fish habitat Protect and sustain high-value fish habitat.	Fish presence inventory (CC)	<ul> <li>% natural riparian forest within 1.5 tree heights around high-value fish habitat</li> <li>% of watershed harvested in 3 years in small watersheds</li> </ul>	Salmon escapement	• None
Hydroriparian biodiversity: connectivity This is a sub-objective of Design harvest to approximate natural disturbance pattern and distribution.	• None	% streams with natural cover along length with process zones	• None	• None

<sup>&</sup>lt;sup>48</sup> Floodplains defined as "active fluvial units" (i.e. low and medium benches and the hydrogeomorphic zone of an active fan) in MO1, MO2, G2G; defined as active fluvial units and floodplain terrain of unknown activity, and including high benches in HPG and EBMH

<sup>&</sup>lt;sup>49</sup> No target for natural riparian forest in MO1, MO2, G2G; target for forest in source zone 70% > 30 years

<sup>&</sup>lt;sup>50</sup> Targets exist for source zone forest but not for natural riparian forest; in addition, there are no objectives or strategies for small low-gradient streams in MO1, MO2, G2G

<sup>&</sup>lt;sup>51</sup> Lakes > 1 ha (MO1; 0.25 – 1 ha have 1 tree height buffer); > 0.25 ha (MO2); no minimum size in other documents

<sup>&</sup>lt;sup>52</sup> Wetlands > 1 ha (MO1; 0.25 – 1 ha have 1 tree height buffer); > 0.25 ha (MO2); no minimum size in other documents

<sup>&</sup>lt;sup>53</sup> Forest swamps > 1 ha (MO1; 0.25 – 1 ha have 1 tree height buffer); > 0.25 ha (MO2); no minimum size in other documents

#### **Terrestrial ecological integrity (S2)**

Element and objective <sup>54</sup>	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Ecosystem representation  Maintain the natural diversity of species ecosystems and seral stages.	<ul> <li>Natural disturbance study (EBMH)</li> <li>Analysis of harvestable area per site series (EBMH)</li> <li>Site series inventory (EBMH)</li> </ul>	<ul> <li>% of natural abundance of old forest<sup>55</sup> per ecosystem type<sup>56</sup>.</li> <li>% of mid-seral forest<sup>57</sup> in each ecosystem type.</li> <li>% of early-seral forest<sup>58</sup> in each ecosystem type</li> </ul>	<ul> <li>Species, ecosystem and seral stage representation within reserves and outside reserves</li> <li>Site series/old forest retention (site scale).</li> </ul>	<ul> <li>Hydroriparian biodiversity and productivity: coarse filter</li> <li>Fine filter hydroriparian biodiversity: Fish and high-value fish habitat</li> </ul>
Rare ecosystems <sup>59</sup> Protect known red- and blue-listed and regionally rare ecosystems.	Summary of known occurrences of rare ecosystems (EBMH)     Improved inventories of rare ecosystems (EBMH).	<ul> <li>% of known red-listed plant communities protected.</li> <li>% of known blue-listed plant communities protected</li> <li>% of known non-listed, naturally rare ecosystems protected</li> </ul>	Distribution of red- and blue-listed ecosystems	•
Habitat for rare and focal species  Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species.	<ul> <li>Habitat supply objectives for each red- and blue-listed and focal species (EBMH)</li> <li>Critical habitat status report (CC)</li> <li>Refined inventories of red- and blue-listed and focal species and their habitat (EBMH)</li> <li>Inventory of migration and movement corridors (EBMH)</li> </ul>	<ul> <li>% of critical habitat<sup>60</sup> of red- and blue-listed and focal wildlife species protected</li> <li>% of key wildlife migration/movement corridors protected</li> </ul>	<ul> <li>Amount and distribution of critical habitat protected for red- and bluelisted species.</li> <li>Amount of highly suitable habitat by subpopulation area.</li> <li>Species representation within reserves and outside reserves.</li> <li>Abundance and distribution of focal and red and blue-listed species.</li> <li># and abundance of habitat elements and features.</li> <li>Site use by species</li> </ul>	<ul> <li>Specific rare and focal species</li> <li>Grizzly bears</li> </ul>
Stand structure	Inventory of special ecological elements (EBMH)	% of cutblock retained as standing trees, within and adjacent to clearcuts	CWD species, size and abundance (site scale).	<ul><li>Hydroriparian ecological integrity</li><li>First Nations cultural and traditional</li></ul>

\_

<sup>&</sup>lt;sup>54</sup> See also objectives under related elements.

<sup>&</sup>lt;sup>55</sup> Old forest is >180 yr (MO2, June KNT, HFN) or >250 yr (MO1, EBMH).

<sup>&</sup>lt;sup>56</sup> Ecosystem type may be defined by BEC site series (field verified or predicted) or by some equivalent ecosystem surrogate representing the full range of site conditions.

<sup>&</sup>lt;sup>57</sup> Mid-seral forest is < 80 yr old in the CWH, < 100 yr old in the ICH and < 120 yr old in the ESSF and MH (MO).

<sup>&</sup>lt;sup>58</sup> Early-seral forest is <40 yr old (MO).

<sup>&</sup>lt;sup>59</sup> Rare ecosystems are those ecosystems that are restricted in number and area. The Conservation Data Centre compiles lists of rare ecosystems for British Columbia: red-listed ecosystems typically have 20 or fewer good examples in British Columbia; blue-listed have fewer than 100. Not all rare ecosystems are listed by CDC (based on NC and EBMH).

An ecosystem or particular ecosystem element occupied or used by a species, or local population, that is essential for its health and/or long-term persistence (EBMH). 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.} (NC).

Element and objective <sup>54</sup>	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Retain forest structure and diversity at the stand level.	Site series classification (EBMH)	or within partial cuts.  • % of retained standing trees that fall within cutblock boundaries in cutblocks larger than 15ha.		resources
Tree species composition  Maintain site productivity and a natural species mix.	• None	% of natural occurrence of each tree species in managed early seral forest	• None	Forest productivity
Islands This is a sub-objective of Maintain the natural diversity of species ecosystems and seral stages.	• None	• None	• None	• None
Exotic species This is a sub-objective of Maintain the natural diversity of species ecosystems and seral stages.	Management standards for exotic species (CC)	• None	• None	• None
Soils and terrain Conserve soil productivity and protect unstable slopes.	Summaries of geological data and terrain maps (EBMH)     New terrain maps and inventories of class IV and V terrain (EBMH)	<ul> <li>% Class IV and V terrain with moderate to high risk of slope failure reserved</li> <li>% of cutblock area with detrimental site disturbance</li> <li>% of cutblock area covered with permanent access structures</li> </ul>	<ul> <li>Area of forest cleared in class IV and V terrain</li> <li>#, size, origin and consequence of natural and development induced landslides.</li> <li>Area of detrimental soil disturbance</li> </ul>	<ul> <li>Water quality and stream morphology</li> <li>Forest productivity</li> </ul>
<b>Degraded sites</b> This is a sub-objective of Conserve soil productivity and protect unstable slopes.	• None	• None	• None	<ul> <li>Forest productivity</li> <li>Ecological integrity-reclamation of mine sites</li> <li>Integrity of natural and cultural features</li> </ul>

# Specific rare and focal species (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Tailed frog	• None	• None	• None	Habitat for rare and focal     spacios
This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species.				species

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Rhinoceros auklet  This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species.	• None	% impact to rhinoceros auklet habitat	• None	Habitat for rare and focal species
Marbled murrelet	• None	• None	• None	Habitat for rare and focal species
This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species.				species
Northern goshawk	• None	• None	• None	Habitat for rare and focal species
This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species.				species
Black (Kermode) bear—forage	• None	% early and mid seral in management	• None	Habitat for rare and focal
This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species.		<ul> <li>Average % crown closure in each managed stand treatment unit</li> </ul>		species
Black (Kermode) bear—critical	• None	% critical habitat altered	• None	Habitat for rare and focal species
habitat This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species.				species
Black (Kermode) bear—	• None	% resource development late August – October in Kermode Management Area	• None	Habitat for rare and focal species
displacement  This is a sub-abjective of Maintain		• % bear viewing outside identified areas		species
This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal		in Kermode Management Area		

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
species.				
Black (Kermode) bear—human- induced mortality  This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal species.	• None	Bear hunting mortality on Gribbell Island or within 1,000 m of Whalen Creek estuary	• None	Habitat for rare and focal species
Mountain goat  This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal species.	• None	• None	• None	Habitat for rare and focal species
Moose and blacktailed deer  This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal species.	• None	• None	• None	Habitat for rare and focal species

# Grizzly bears (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Grizzly bear—population conservation  This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	Population table listing target sub- population sizes for each Grizzly Bear Population Unit (CC)	% of at-risk GBPUs (i.e., population estimates below targets) with active recovery strategies.	Estimated density of grizzly bears in each GBPU sub-population	Habitat for rare and focal species
Grizzly bear—benchmark populations This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	Management plans for the Khutze and Ahnuhati Grizzly Bear Management Areas	# of (or area occupied by)     "benchmark" populations protected     from hunting	• None	Habitat for rare and focal species

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Grizzly-bear—critical habitat This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	Ground-verified critical habitat maps (NC)	<ul> <li>% of Class 1 habitat protected</li> <li>% of Class 2 habitat protected</li> </ul>	• None	Habitat for rare and focal species
Grizzly bear—landscape-level forage supply This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	• None	% of landscape made up of mid-seral forest	• None	Habitat for rare and focal species
Grizzly bear—stand-level forage supply This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	• None	<ul> <li>Stocking density on rich, wet sites<sup>61</sup></li> <li>% of rich, wet sites with cluster planting</li> <li>% of highly effective grizzly bear habitat treated with aerial herbicide</li> </ul>	• None	Habitat for rare and focal species
Grizzly bear—displacement and mortality from roads This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	Access management plan (CC/NC)	<ul> <li>Timber harvesting and transportation activity between May 15 and Oct 15</li> <li>% of watershed with restricted public access</li> <li>% of road length with visual screening</li> </ul>	• None	Habitat for rare and focal species
Grizzly bear—displacement by and habituation to people This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	Wildlife viewing standards and code of ethics (NC)	<ul> <li>Commercial recreation user days per km² during the active season</li> <li># of land-based bear viewing sites</li> <li>Permanent, land-based overnight commercial recreation facilities</li> <li># of tenures for random, land-based bear viewing</li> </ul>	• None	Habitat for rare and focal species
Grizzly bear—displacement by aircraft This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	• None	Air-based bear viewing hours	• None	Habitat for rare and focal species

<sup>&</sup>lt;sup>61</sup> Rich and wetter sites are defined in the CWHms1 and CWHms2 as 06, 07, 08, 09 and 11 site series; CWHds1 and CWHds2 as 07, 08, 09, 10 and 12 site series; 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 (CC p43, NC p112).

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Grizzly-bear—displacement by water-craft	Studies to determine acceptable numbers of boats and viewers (CC).	• None	• None	Habitat for rare and focal species
This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.				
Grizzly bear—negative human- bear interaction  This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	• None	Funding for education programs to reduce negative human-bear interactions	• None	Habitat for rare and focal species

# Human well-being (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Human well-being Achieve high levels of human well-being.	Well-being assessment (EBMH)     Socio-economic assessment (EBMH)     Rural well-being strategy (NC)	• None	<ul> <li>Population demographics.</li> <li>Violent crime rate [by community].</li> <li>Clean water and air [by community].</li> </ul>	All elements in Human well-being section.
Flood protection This is a sub-objective of the core EBM objective to Build stable, resilient, well-serviced, and peaceful communities in coastal British Columbia.	• None	• None	• None	• None
Domestic and industrial access to water  This is a sub-objective of Provide adequate opportunities for individuals and households to meet their needs.	• None	• None	• None	• None
Health services  This is a sub-objective of the core EBM objective of Achieve the health, wealth and educational status required for a high quality and secure life for both aboriginal and non-aboriginal people.	<ul> <li>Health services needs assessment (CC)</li> <li>Rural health plan (CC)</li> </ul>	<ul> <li># and type of health education programs</li> <li># and type of recreation programs</li> <li># and type of recreation facilities</li> </ul>	<ul> <li>Life expectancy at birth.</li> <li>Access to medical services [by community].</li> </ul>	• None
Cultural and social activity	Study of social, cultural and volunteer	Funding to not-for-profit	Diverse recreation opportunities [by	First Nations cultural and traditional

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
This is a sub-objective of the core EBM objective to Create a strong and diverse mix of non-profit and voluntary organizations and a vibrant set of traditional, cultural, and non-market activities within communities and across the region.	programs with recommendations (CC)  • Information packages promoting volunteerism (CC)	organisations, by organization type	community]	resources
Social services	Emergency preparedness plan (CC)	• None	• None	• None
This is a sub-objective of Provide adequate opportunities for individuals and households to meet their needs.				
Physical infrastructure This is a sub-objective of the core EBM objective of Build stable, resilient, well-serviced, and peaceful communities in coastal British Columbia.	Coastal transportation plan (CC)	<ul> <li>Type (e.g., road, ferry) and season (e.g., all year, summer) of access to each coastal community</li> <li># and condition of community sports and gathering facilities</li> </ul>	\$ for infrastructure and community development [by community].     Recreational infrastructure and publicly-owned services, e.g., boat launches, recreational campsites, public roads to recreational sites, garbage removal, public toilets.	• None
Settlement	Settlement plan (CC)	• None	• None	• None
This is a sub-objective of the core EBM objective of Build stable, resilient, well-serviced, and peaceful communities in coastal British Columbia.				
Community influence	• None	• None	Local involvement in resource	Industry consultation
This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks			<ul> <li>decisions.</li> <li># of successful projects that used effective collaboration or partnerships</li> <li>Increase in the level of decision-making required by First Nations for the management of forestry, fishery and other natural resources.</li> <li>Existence of co-management agreements.</li> </ul>	<ul> <li>Public decision-making.</li> <li>Community influence in forestry and timber</li> <li>Community influence in mineral and energy resources</li> <li>Community influence in tourism and outdoor recreation</li> </ul>
Industry consultation	• None	Central place for consolidated, geo- referenced land-rights and interests	First Nations approval of resource development and management plans	• None
This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution		# of consultations with First Nations per 100 new developments	<ul> <li>development and management plans and site plans.</li> <li>Consultation on 100% of development plans referred to tourism associations and tourism operators and other sectors having a specific</li> </ul>	

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
of benefits, costs and risks			interest in impact on tourism, and individuals not belonging to a specific association	
Public decision-making This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks	• None	% of development applications reviewed by First Nations	• None	• None
Meeting Needs  Provide adequate opportunities for individuals and households to meet their needs.	Vulnerability assessment (EBMH)	• None	<ul> <li>Low income population as a % of total population.</li> <li>Individual/family dependence on social assistance</li> </ul>	<ul> <li>Annual income</li> <li>Traditional forest resources in First Nations cultural and traditional resources</li> <li>Harvesting opportunity in Harvesting fish and wildlife</li> </ul>
Annual income  Community members meet their financial needs and maintain a basic lifestyle as defined by community members themselves.	• None	• None	<ul> <li>Individual/family income by sector</li> <li>Employment by sector</li> </ul>	<ul> <li>Economic growth and diversity below</li> <li>Resource/tenure allocation</li> <li>Employment</li> <li>Education and training</li> </ul>
Economic growth and diversity Diversify the economies of First Nations' and other communities in the Plan Area.	Economic development and diversification plan (CC/NC)	Funding for marketing program	<ul> <li># and diversity of economic activities across sectors</li> <li>Economic diversity index</li> <li>Annual gross and net revenues</li> <li>Assessed property values</li> <li>Shell fish aquaculture expenditures and/or number of tenures</li> <li>Annual resource (stumpage, etc.) revenues to BC</li> </ul>	<ul> <li>Value added</li> <li>Waste wood</li> <li>Investment</li> <li>Bureaucracy</li> <li>Business infrastructure and services</li> <li>Non-timber forest product sector growth and diversity</li> <li>Forest sector growth and diversity</li> <li>Mineral and energy sector growth and diversity</li> <li>Tourism sector growth and diversity</li> </ul>
Value added This is a sub-objective of Diversify the economies of First Nations' and other communities in the Plan Area.	• None	• None	# of value-added, niche market and specialty products produced out of the North Coast [by community].	• None
Waste wood This is a sub-objective of Diversify the economies of First Nations' and other	• None	• None	# of conventional and alternative energy types explored and projects initiated	• None

ne	Funding for program to attract		
ne	• Funding for program to attract		
	<ul> <li>investment</li> <li>Value of tax incentives (etc.) promoting research and development</li> </ul>	• None	Investment section in Forestry and timber     Investment section in Tourism and outdoor recreation
ne	Funding for reviewing development proposals, per proposal and by proposal type	Processing time	• None
ne	% of businesses with access to basic telecommunications services	• None	• None
source revenue capture plan (CC) stribution analysis (EBMH)	• None	<ul> <li>Local income diversity.</li> <li>Local share of access to resources.</li> <li># of programs that assist starting businesses [by community]</li> <li>First Nation and local revenues and employment by community and by sector</li> <li># of locally-owned businesses by community and by sector</li> <li>Local manufacturing.</li> <li>Flow of revenue in and out of the community</li> <li>First Nations participation in the mineral, aggregate and energy industry</li> <li>Protocols between industry and First Nations and the provincial government and First Nations, addressing employment, training, capacity building, tenure and revenue sharing.</li> </ul>	<ul> <li>Resource rent in Human well-being</li> <li>Resource/tenure allocation in Human well-being</li> <li>Joint ventures in Human well-being</li> <li>Employment in Human well-being</li> <li>Resource/tenure allocation in Harvesting fish and wildlife</li> <li>Resource/tenure allocation in Nontimber forest products</li> <li>Resource/tenure allocation in Forestry and timber</li> <li>Local economic benefit in Mineral and energy resources</li> <li>Local economic benefit in Tourism and outdoor recreation</li> </ul>
ne	% of resource rent collected from the coast that is distributed to coastal communities, by sector and by	Existence of co-management agreements [with First Nations].      Protocols that provide revenue.	• None
n	ource revenue capture plan (CC) ribution analysis (EBMH)	Promoting research and development  Funding for reviewing development proposals, per proposal and by proposal type   • % of businesses with access to basic telecommunications services  • None  • None  • None	Processing time  Funding for reviewing development proposals, per proposal and by proposal type  None  None  Local income diversity. Local share of access to resources. # of programs that assist starting businesses [by community] First Nation and local revenues and employment by community] First Nation and local revenues and employment by community and by sector Local manufacturing. Flow of revenue in and out of the community First Nations participation in the mineral, aggregate and energy industry: Protocols between industry and First Nations and the provincial government and First Nations, addressing employment, training, capacity building, tenure and revenue sharing.  * % of resource rent collected from the coast that is distributed to coastal  * Existence of co-management agreements [with First Nations].

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Area resource development by local individuals and communities, to contribute to local and provincial economies.		<ul> <li>community</li> <li># of negotiation protocols with First Nations that address resource rent</li> </ul>	sharing with First Nations  • Annual resource revenues to First Nations	
Joint ventures  This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to contribute to local and provincial economies.	• None	<ul> <li># of business partnerships by sector and community</li> <li># of protocols addressing business partnerships by sector and First Nation</li> </ul>	<ul> <li># of businesses, partnerships, and joint ventures involving First Nations.</li> <li># of joint management agreements between the provincial government and First Nations and between third parties and First Nations.</li> <li># of tourism businesses owned by or involving First Nations [by community]</li> <li># of protocol agreements</li> </ul>	• None
Resource/tenure allocation  This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to contribute to local and provincial economies.	• None	% of tenures (e.g., % of AAC or % of lodge sites) held by coastal residents and communities, by community and by sector	# and % of tenures held by: Plan Area(s) communities, First Nations and individuals	Resource/tenure allocation in Harvesting fish and wildlife     Resource/tenure allocation in Nontimber forest products     Resource/tenure allocation in Forestry and timber
Employment Improve prospects for employment in the Plan Area.	Report outlining potential for local employment from monitoring (NC)	<ul> <li># of conservation officer positions</li> <li># of monitoring support positions</li> <li># of protocols with First Nations addressing employment</li> </ul>	<ul> <li>Employment by sector</li> <li>Local employment by sector</li> <li>First Nations employment</li> <li>Individual/family income by sector</li> <li>EI and long-term EI claimants</li> <li>Jobs per 1000 m³</li> </ul>	• None
Education and training. This is part of the core EBM objective to Achieve the health, wealth and educational status required for a high quality and secure life for both aboriginal and non-aboriginal people.	Education needs assessment (CC)     Study defining benchmark for access to education (CC)	<ul> <li>Amount of funding for new education programs</li> <li># of protocols with First Nations addressing education, by sector and First Nation</li> <li>Funding for internet skill development courses</li> </ul>	<ul> <li>Educational services per community</li> <li>Educational services per First Nation</li> </ul>	<ul> <li>Education and training in Non-timber forest</li> <li>Education and training in mineral and energy resources</li> </ul>
Population growth  Promote a stable or growing population	• None	• None	Population change per community and per plan area	• None

## Harvesting fish and wildlife (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Harvesting opportunity  Maintain sustenance, commercial and recreational, hunting, fishing and trapping opportunities.	Study of negative impacts on hunting fishing and trapping opportunities (CC)	% of fishing, hunting and trapping areas negatively impacted by development	<ul> <li>Fish and wildlife harvest/trapping levels</li> <li>Sport-fish catch levels in lakes and streams</li> </ul>	• None
Collaboration amongst users This sub-objective is part of the core EBM objective to Ensure a fair distribution of benefits, costs and risks.	• None	<ul> <li>% of developers and non-exclusive tenure applicants receiving guiding tenure maps</li> <li>% of affected trappers and guides contacted prior to development</li> <li>Strategies to protect guiding infrastructure in forest stewardship plans</li> </ul>	• None	<ul> <li>Collaboration amongst users in Mineral and energy resources</li> <li>Collaboration amongst users in Tourism and outdoor recreation</li> <li>Collaboration amongst users in Scenery</li> </ul>
Resource/tenure allocation— trapping and guiding This is a sub-objective of Promote Plan Area resource development by local individuals and communities.	• None	% of trapping and guiding tenures held by coastal people (by community or First Nation and by tenure type)	• None	Resource/tenure allocation in Human well-being
Resource/tenure allocation First Nations sustenance First Nations have access to sustenance harvesting.	Review of wildlife allocation policies (CC)	• None	• None	Resource/tenure allocation in Human well-being
Sustainable populations.  Maintain healthy populations/sub-populations of harvested fish and wildlife.	Sustainable harvest plan based on precautionary limits, by species (EBMH)	<ul> <li>% of wildlife populations threatened by hunting that are protected by access restrictions</li> <li>% of significant fishing, hunting and trapping areas protected with no- development buffers or special management provisions</li> <li>Funding for monitoring and enforcement of hunting, trapping and guiding</li> </ul>	Fish and wildlife population censuses     Amount and distribution of highly suitable habitat or winter range for wildlife	<ul> <li>Habitat for rare and focal species</li> <li>Mountain goat</li> <li>Moose</li> <li>Blacktailed deer</li> </ul>
Inventory, research and monitoring This sub-objective is part of Maintain healthy populations/sub-populations of	<ul> <li>Information-sharing agreement for hunting, guide outfitting and trapline information (CC)</li> <li>Trapline inventory (CC)</li> </ul>	• None	• None	• None

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
harvested fish and wildlife.	<ul> <li>Hunting, fishing and trapping activity study (CC)</li> <li>Synthesis of wildlife and fresh-water fish harvests</li> <li>Improved wildlife habitat inventories and population estimates (CC)</li> </ul>			

## Non-timber forest products (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Non-timber forest product sector growth and diversity  Maintain viable, diversified and profitable businesses in the non-timber harvest sector.	Inventory of timber and non-timber harvesting interests (EBMH)	• None	Sector and business profitability	Economic growth and diversity
Marketing Develop new markets for non-timber forest products.	• None	• None	• None	• None
Harvesting opportunity  Maintain a diversity of harvesting opportunities for non-timber forest products.	Non-timber forest product inventories (including, pine mushrooms, plants appropriate for cultural use and cedar suitable for cultural use) (CC).	Restrictions on harvesting pine mushrooms in Tweedsmuir Park	• None	• None
Resource/tenure allocation This sub-objective is part of Recognize and accommodate aboriginal rights and title.	• None	<ul> <li>% of area available for plant harvesting by First Nations and local communities</li> <li>Protocols with First Nations addressing management of non- commercial, non-timber forest products</li> </ul>	• None	<ul> <li>Resource/tenure allocation</li> <li>Health services</li> <li>Meeting needs</li> </ul>
Harvest rate  Do not exceed sustainable harvest levels.	• None	Amount (volume or area) harvested per decade, by product type and quality	Volume, species, grade and area of non-timber forest products harvested	• None
Forest-product productivity Maintain forest productivity.	• None	% of degraded ecosystems treated	• None	• None
Forest-product contamination	• None	% of sites with NTFPs and pests or weeds that are treated with pesticides	• None	• None

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
This is a sub-objective of Maintain viable, diversified and profitable businesses in the non-timber harvest sector.				
Research and development  This is a sub-objective of Maintain viable, diversified and profitable businesses in the non-timber harvest sector.	<ul> <li>Catalogue of commercially available non-timber forest products (CC)</li> <li>Literature review of existing NTFP research, by product (CC)</li> <li>Study describing potential markets for NTFPs, by product (CC)</li> </ul>	<ul> <li>Funds allocated to lobbying federal government for assistance in developing NTFP industry</li> <li>Funds for new NTFP research and development centre</li> <li>Funds for research program studying cultivation of NTFPs</li> </ul>	• None	• None
Education and training This is a sub-objective of Maintain viable, diversified and profitable businesses in the non-timber harvest sector.	•	Funding for NTFP awareness program	• None	Education and training in Human well-being

## Forestry and timber (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Forest sector growth and diversity.  Maintain viable, diversified and profitable businesses in the timber sector.	Inventory of timber and non-timber harvesting businesses and interested parties (EBMH)	• None	<ul> <li>Sector and business profitability</li> <li>Timber Harvest by species and grade.</li> <li>Continuity and stability of local wood supply for small and large manufacturing</li> </ul>	Economic growth and diversity
Investment This is a sub-objective of Maintain viable, diversified and profitable businesses in the timber sector.	• None	• None	• None	Investment section in Human well- being
Marketing This is a sub-objective of Maintain viable, diversified and profitable businesses in the timber sector.	• None	• None	• None	• None
Harvesting opportunity  Maintain a diversity of harvesting	<ul> <li>Report describing harvesting opportunities for timber and non-timber forest products (EBMH)</li> <li>Access management plan (CC)</li> </ul>	• None	• None	• None

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
opportunities for timber.				
Resource/tenure allocation This is a sub-objective of Promote Plan Area resource development by local individuals and communities.	Report describing potential for new community and First Nation tenures (CC).	% of tenures held by coastal communities and First Nations, by community and First Nation	<ul> <li># of renewable forest tenures awarded to First Nations</li> <li>Community forests</li> </ul>	Resource/tenure allocation in Human well-being
Harvest rate  Do not exceed sustainable harvest levels.	<ul> <li>Updated timber (including species and volume) inventories (EBMH)</li> <li>Updated operability estimates (EBMH)</li> <li>Timber supply analysis (EBMH)</li> </ul>	Amount harvested per decade by species     Harvest profile	Volume, species, grade and area of timber harvested	• None
Forest productivity  Maintain forest productivity.	• None	<ul> <li>% of harvested area classified as regenerating (including pre-1987 backlog as separate category)</li> <li>% of harvested area classified as free growing (including backlog as separate category)</li> <li>Area treated by type of intensive silviculture</li> <li>% of degraded sites rehabilitated</li> </ul>	Species, stocking and growth rate of regenerating stands	Tree species composition
Research and monitoring This is a sub-objective of Maintain viable, diversified and profitable businesses in the timber sector.	• None	<ul> <li>Funding for research related to EBM</li> <li>Funding for incentive program to encourage industrial innovation</li> </ul>	• None	• None
Community influence This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks	Pine mushroom inventory (CC)	• None	• None	Community influence in Human well- being

# Mineral and energy resources (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Mineral and energy sector growth and diversity  Develop viable, diversified and	• None	• None	<ul> <li>Sector and business profitability</li> <li>Mineral exploration expenditures</li> <li>Dollars and benefits accruing to local, provincial and national economies</li> </ul>	Economic growth and diversity
profitable businesses in the mining and			from mineral aggregate and energy	

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
energy sector.			<ul><li>industry and associated services.</li><li>Volume, type and grade of extraction</li></ul>	
Resource extraction opportunity Exploration and development is consistent with land use plans	Access management plan (CC)	• None	<ul><li>Resource estimates</li><li>Number of claims</li><li>Active prospects</li></ul>	• None
Collaboration amongst users This sub-objective is part of Diversify the economies of First Nations' and other communities in the Plan Area.	• None	• None	• None	<ul> <li>Collaboration amongst users in Harvesting fish and wildlife</li> <li>Collaboration amongst users in Tourism and outdoor recreation</li> <li>Collaboration amongst users in Scenery</li> </ul>
Community influence This is a sub-objective of the core EBM objective to Ensure a fair distribution of benefits, costs and risks	• None	• None	% of projects jointly reviewed	Community influence section in Human well-being
First Nations influence This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests.	• None	<ul> <li>% of development permits reviewed by affected First Nation</li> <li>% of development projects with appropriate consultation</li> </ul>	• None	• None
Local economic benefit  This is a sub-objective of the core EBM objectives to Ensure a fair distribution of benefits, costs and risks and to Recognize and accommodate aboriginal rights and title and interests.	A plan proposing legacy projects to be funded by mining (implied; CC)	• None	• None	Local economic benefit in Human well-being
Education and training.  This sub-objective is part of the core EBM objective to Achieve the health, wealth and educational status required for a high quality and secure life.	• None	# of trainee positions offered per year	• None	Education and training in Human well-being
Inventories, research and monitoring This is a sub-objective of Develop viable, diversified and profitable businesses in the mining and energy	<ul> <li>Inventories of subsurface and aggregate resources (EBMH/CC)</li> <li>Subsurface- and aggregate-resource marketing study (CC)</li> <li>Inventory of claims and ownership</li> </ul>	• None	• None	• None

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
sector.	(EBMH) • Inventory of capital assets related to mineral/energy development(EBMH).			
Ecological integrity of mine sites  Mining, from exploration to post- closure, maintains ecological integrity.	• None	% of developments having CEEA screenings and full CEEAs     # of regulation infractions	None	• None
Ecological integrity— reclamation of mine sites This is a sub-objective of Mining, from exploration to post-closure, maintains ecological integrity.	• None	# of finished mine and aggregate sites needing reclamation (including related infrastructure)	# of industrial sites prioritized for reclamation	• None
Visual impacts of mine sites This sub-objective is part of Conserve and/or enhance recreation resources.	• None	• None	• None	• None

### **Tourism and outdoor recreation (S2)**

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Tourism sector growth and diversity  Develop and support viable tourism business opportunities.	<ul> <li>Study examining potential for businesses to serve recreating public (CC)</li> <li>Mechanism for resolving conflicts between tourism &amp; other sectors (CC).</li> </ul>	• None	<ul> <li>Sector and business profitability</li> <li>Tourism room revenue</li> <li>Visitor # and recreation use days</li> </ul>	Economic growth and diversity
Investment  This is a sub-objective of Develop and support viable tourism business opportunities.	• None	• None	• None	Investment section of Human well- being
Collaboration amongst users  This is a sub-objective of Develop and support viable tourism business opportunities.	Directory of businesses and their geographic interests	• None	• None	<ul> <li>Collaboration amongst users in Harvesting fish and wildlife</li> <li>Collaboration amongst users in Mineral and energy resources</li> <li>Collaboration amongst users in Scenery</li> <li>Industry consultation section in Human well-being</li> </ul>

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Tourism opportunity  This is a sub-objective of Develop and support viable tourism business opp.	<ul> <li>Site plans for tourist sites (NC)</li> <li>Wildlife viewing site inventory (CC)</li> <li>Resort site inventory (CC).</li> </ul>	• None	• None	• Access
Recreation opportunity No objectives in EBMH, G2G or MO.	Site plans for recreation sites (NC)	<ul> <li>#, type and condition of recreation facilities</li> <li>Accessibility of recreation sites, by access type (e.g., summer, winter, road, water) and site type (e.g., backcountry skiing trails, snow machining areas)</li> </ul>	• None	• Access
Diversity of outdoor experience This sub-objective is part of Develop and support viable tourism business opportunities.	• None	Level of use and type of experience	% of tourism/recreation areas with established carrying capacities.	• None
Semi-primitive experience  Maintain the recreation experience in identified areas.	• None	<ul> <li>Road density</li> <li>Area harvested or salvaged</li> <li># of permanent, overnight, commercial, recreation facilities</li> <li>Max size of commercial rec. groups</li> <li>Areas with sanitation facilities</li> </ul>	• None	• None
Bear viewing  Maintain high quality bear viewing opportunities.	• None	<ul> <li># of land-based bear viewing sites in Khutzeymateen</li> <li>Harvesting and log transportion activity</li> </ul>	• None	• None
Scenery  Maintain natural scenic quality.	<ul> <li>Scenery plan with visual quality zones (EBMH)</li> <li>Report on scenery management for air-based tourism (CC)</li> </ul>	• None	• None	Objectives related to scenery
Acoustics This sub-objective is part of Conserve and/or enhance recreation resources.	• None	% of developments, affecting fixed- location tourism operators, having adequate consultation	• None	• None
Waterways This sub-objective is part of Conserve and/or enhance recreation resources.	Inventory of anchorages, campsites and destination areas (CC)	<ul> <li>Forest buffers around identified anchorages</li> <li>% of industrial structures developed in identified anchorages with adequate consultation</li> </ul>	• None	• None
Integrity of natural and cultural	• Inventories of physical and cultural features (CC)	Application for National Historic Site Designation for Port Essington	Integrity of areas used for recreation	• Access

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
features Ensure that tourism development minimizes impacts to cultural and ecological values.	<ul> <li>Studies to identify carrying capacity levels(NC)</li> <li>Strategic tourism plan that addresses access to, use of and conservation of recreation and cultural resources/features (EBMH/NC/CC)</li> <li>Regulations and protocols for conserving the integrity of sensitive cultural and heritage and traditional harvesting sites and resources (NC)</li> </ul>			
Community influence This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks	• None	<ul> <li># and scope of cooperative management agreements/partnerships with First Nations, relating to recreation management</li> <li>Amount of funding of government agencies and First Nations for assessment, management and enforcement of recreation</li> </ul>	Community support for tourism	Community Influence in Human well-being
Local economic benefit  This is a sub-objective of the core EBM objectives to Ensure a fair distribution of benefits, costs and risks and to Recognize and accommodate aboriginal rights and title and interests.	• None	# and scope of protocols with First Nations, relating to tourism	Growth in the number of local tourism operations [by community].	Local economic benefit in Human well-being

# Scenery (S2)

Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Alteration of scenery  Maintain natural scenic quality.	Visual management plan for significant non-commercial facilities and sites (CC)	<ul> <li>% of each perspective view visibly altered in each zone</li> <li>% of shoreline buffer visibly altered in each zone</li> </ul>	• None	• None
Collaboration amongst users This sub-objective is part of Diversify the economies of First Nations' and other communities in the Plan Area.	Access management plan (CC)	% of forest development plans reviewed by tourism stakeholders     Joint forestry-tourism committee	• None	<ul> <li>Collaboration amongst users in Harvesting fish and wildlife</li> <li>Collaboration amongst users in Mineral and energy resources</li> <li>Collaboration amongst users in Tourism and outdoor recreation</li> </ul>
Restoration of scenery This sub-objective is part of Maintain	• Inventory of degraded sites (ranked by priority for restoration; CC)	• None	• None	• None

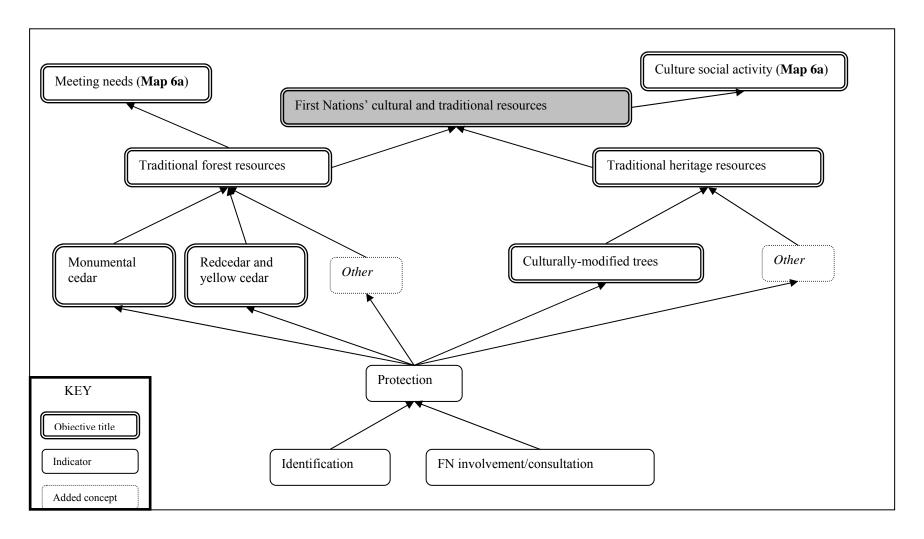
natural scenic quality.				
Research and monitoring This sub-objective is part of Maintain natural scenic quality.	• None	Funding (and in-kind commitments) for adaptive management study examining perceptions of altered scenery	• None	• None

## Access (S2)

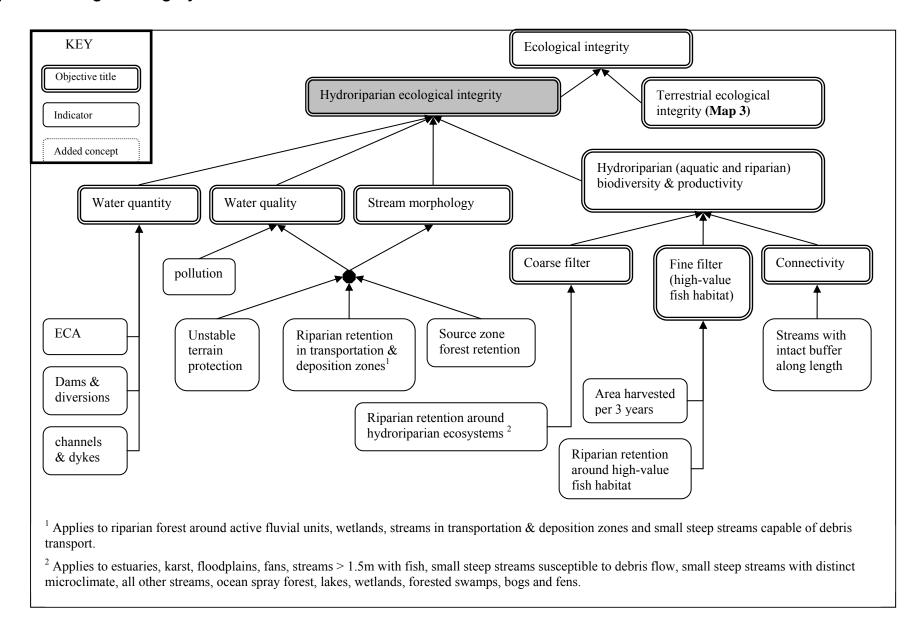
Element and objective	Assessment or plan	Implementation indicator	Effectiveness indicator	Related elements
Access restrictions  Commercial and public access and facilities minimize impacts to cultural and ecological values.	<ul> <li>Inventory of values placed at risk by access and facilities (NC/CC)</li> <li>Access management plan (NC/CC).</li> </ul>	% of significant cultural and ecological features protected by no- access/no-facility zones	<ul> <li>% of landbase occupied by access structures.</li> <li>Area of site disturbance</li> </ul>	• None
Access requirements This sub-objective is part of Diversify the economies of First Nations' and other communities in the Plan Area.	<ul> <li>Inventory of access and infrastructure (EBMH)</li> <li>Access management plan (CC/NC).</li> </ul>	• None	• None	• None

### **Section 3: Concept maps.**

#### Map 1. First Nations' cultural and traditional resources

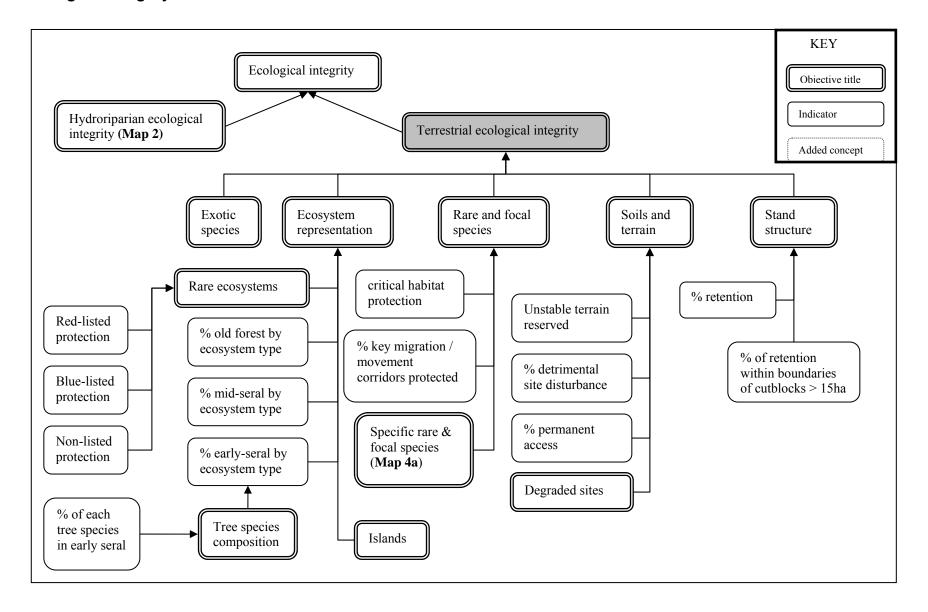


#### Map 2. Hydroriparian ecological integrity<sup>62</sup>

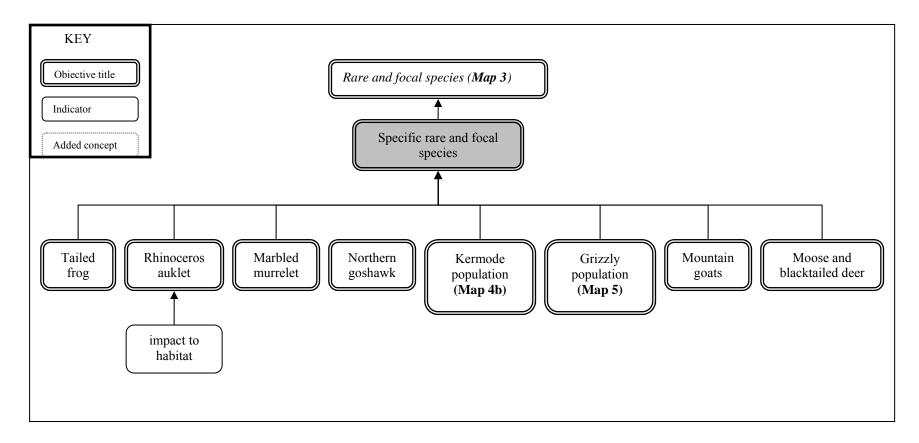


<sup>&</sup>lt;sup>62</sup> Some objectives in the compilation table are divided into separate parts in this concept map (e.g., water quality is separated from stream morphology here).

Map 3. Terrestrial ecological integrity



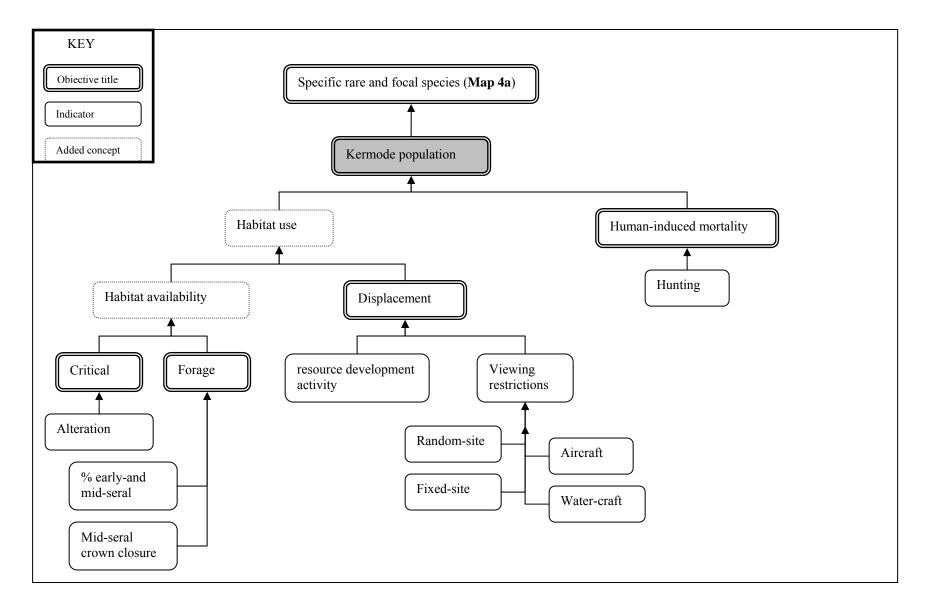
Map 4a<sup>63</sup>. Specific rare and focal species



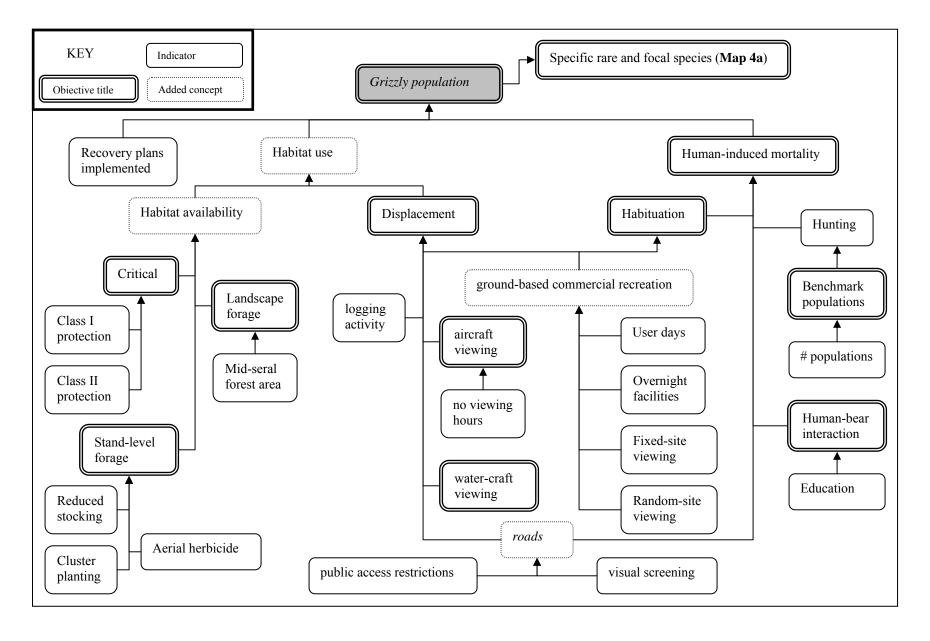
\_

<sup>&</sup>lt;sup>63</sup> Concept maps match main sections in compilation and summary tables; some concept maps have been split over several pages (e.g., 4a, 4b).

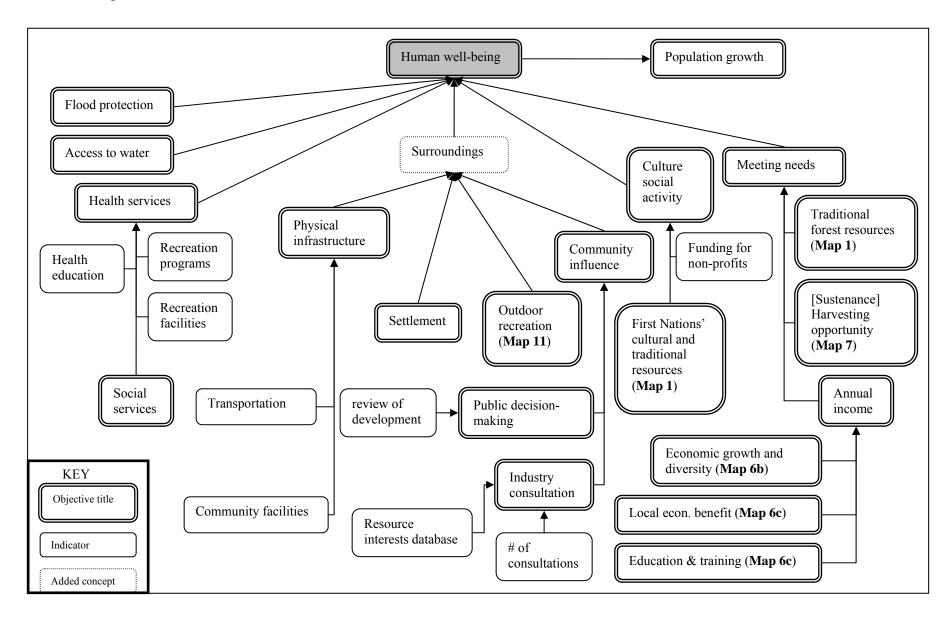
Map 4b. Kermode bears



Map 5. Grizzly bears

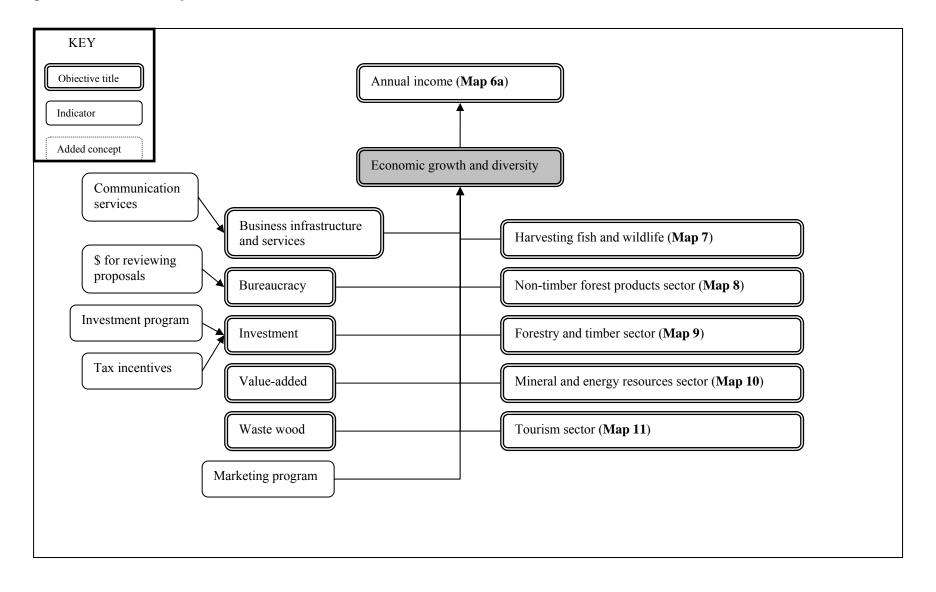


Map 6a<sup>64</sup>.. Human well-being

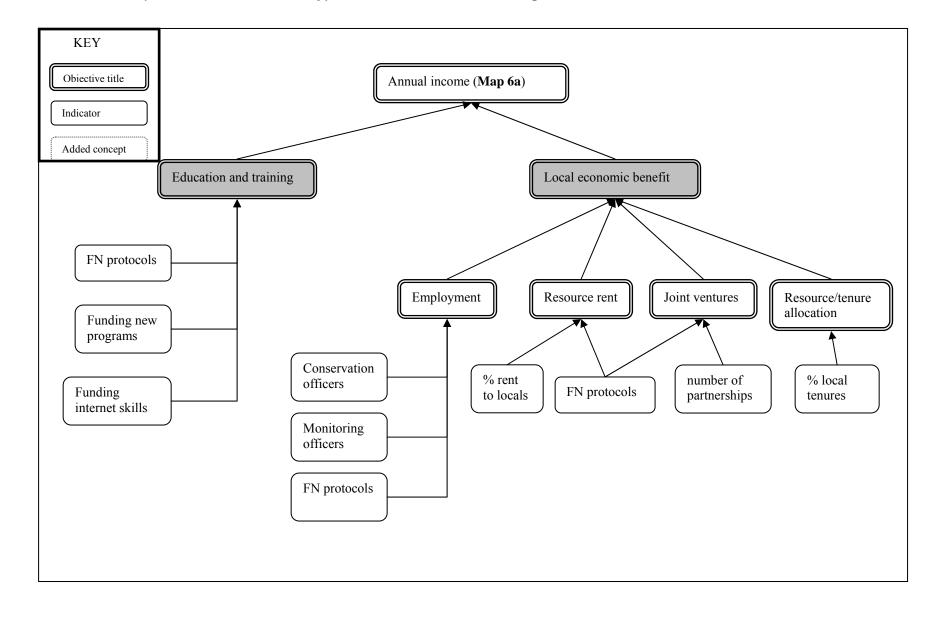


<sup>&</sup>lt;sup>64</sup> Concept maps match main sections in compilation and summary tables; some concept maps have been split over several pages (e.g., 6a, 6b, 6c).

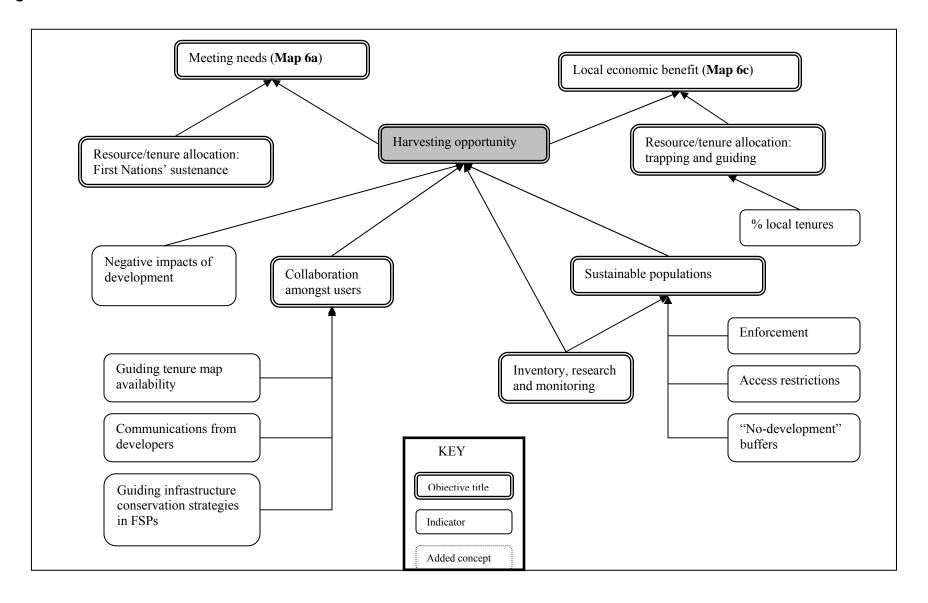
#### Map 6b Economic growth and diversity



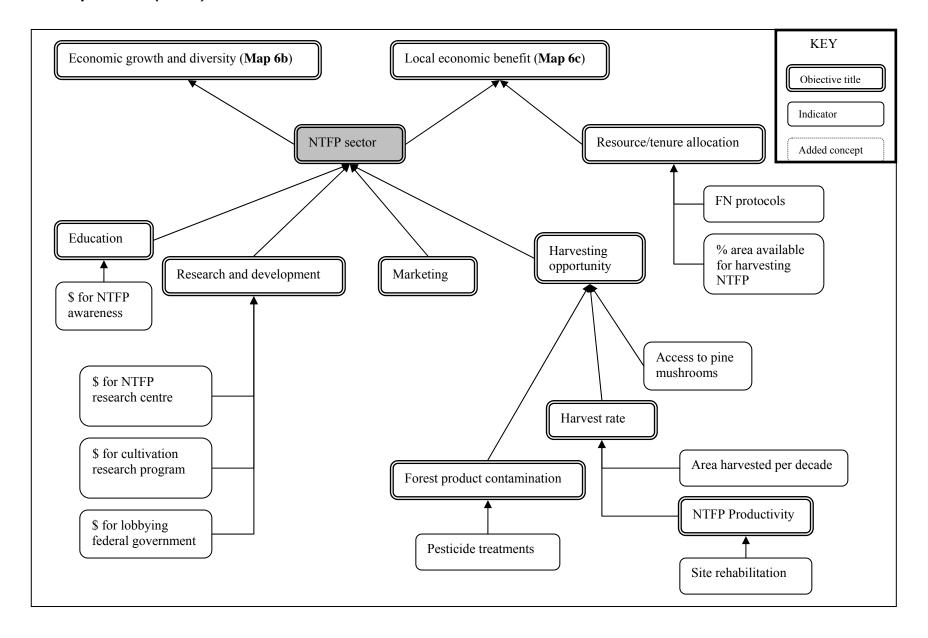
Map 6c. Local economic benefit (local share of economy) and education and training



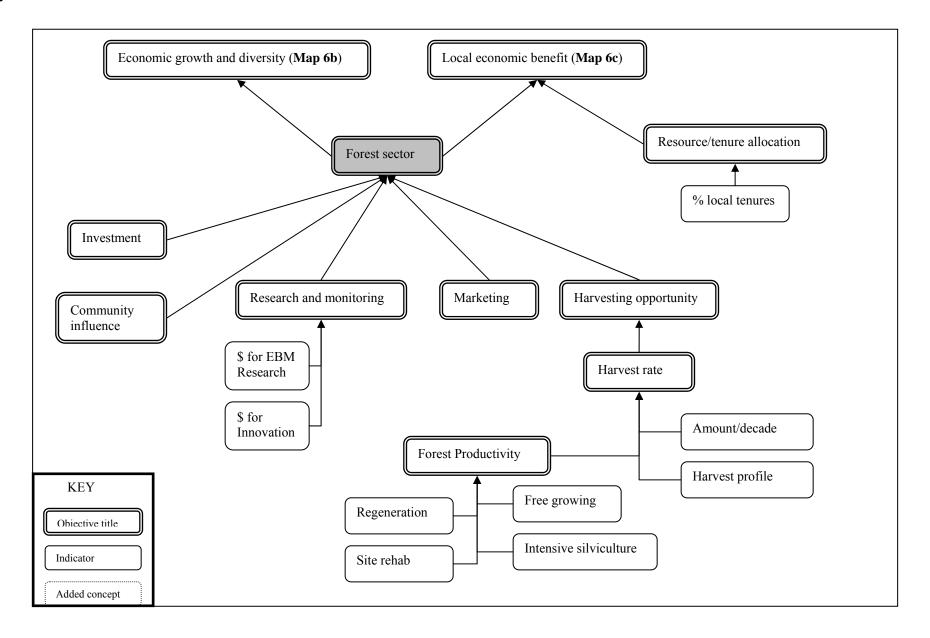
Map 7. Harvesting fish and wildlife



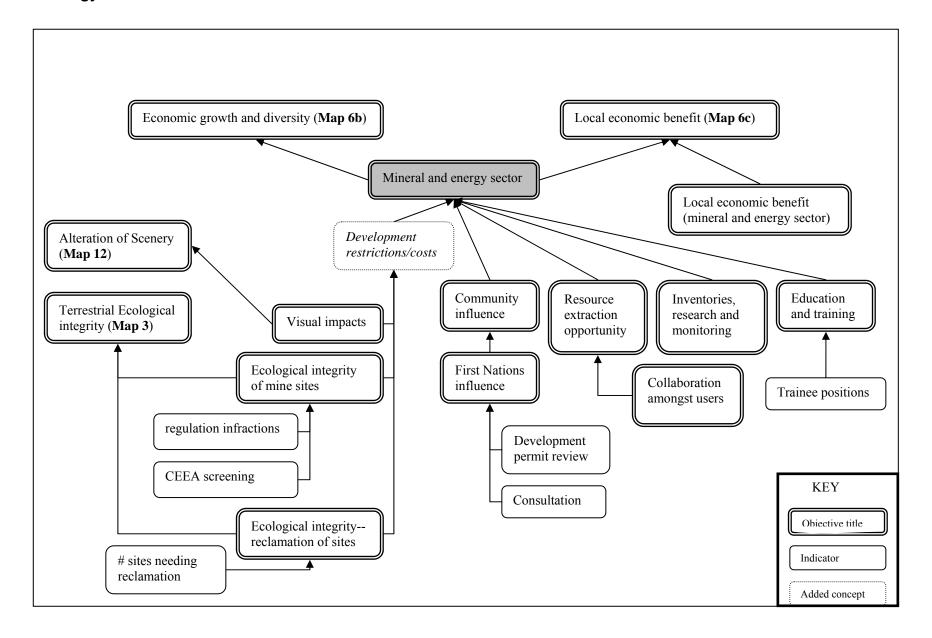
Map 8. Non-timber forest products (NTFP)



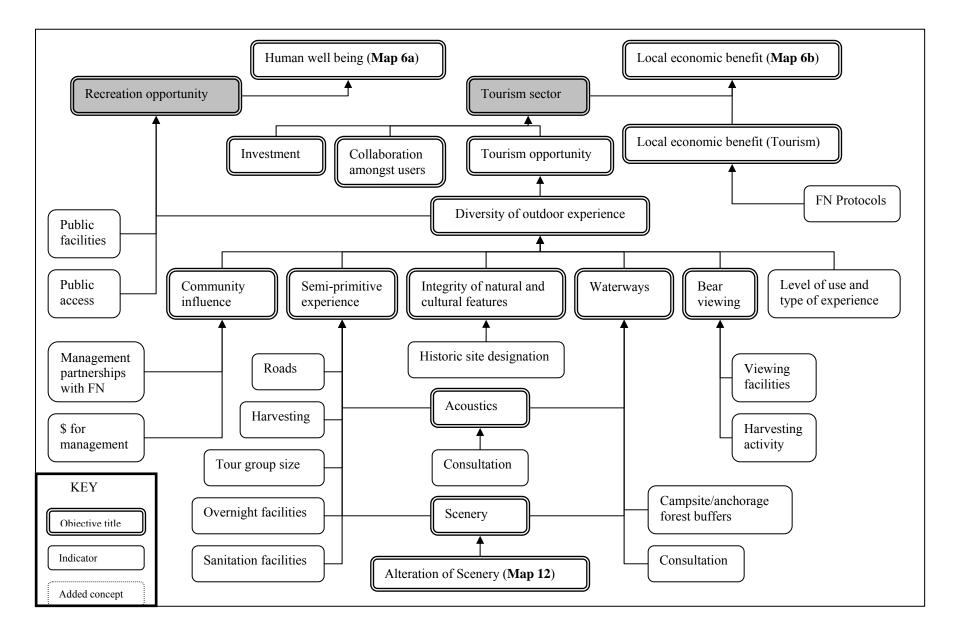
Map 9. Forestry and timber



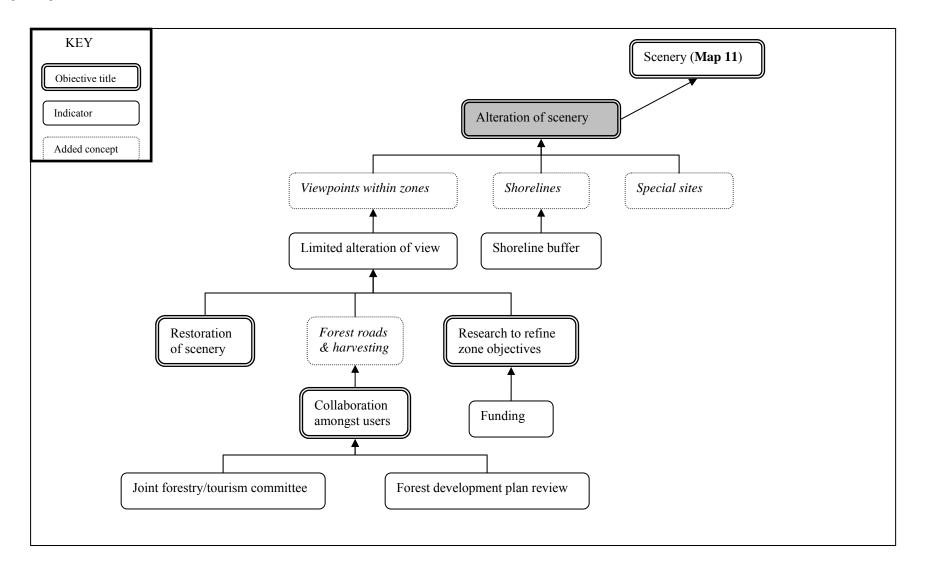
Map 10. Mineral and energy resources



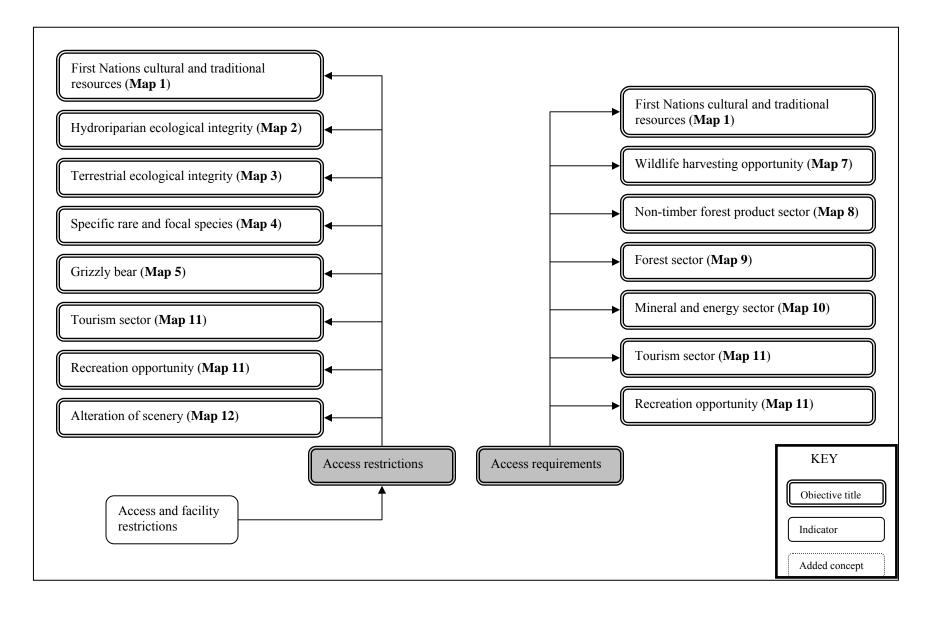
Map 11. Tourism and outdoor recreation



Map 12. Scenic quality



Map 13. Access restrictions and access requirements



## Section 4: Compilation of objectives and strategies

#### Key to compilation table

#### Row shading and font.

Grey shaded rows show proposed summary text including a synthesized objective, a synthesized indicator, and targets from different sources.

White rows show excerpts of objectives and strategies from original documents; sets of objectives and strategies are divided into rows by type of source document (see below).

**Italics** show directly quoted wording, except that some clauses are re-ordered for consistency and clarity and that redundancies are omitted; three periods (...) indicate a break in the quoted text; square brackets [] delineate text added by the authors (although still italicised); curved brackets carry references to source documents.

#### **Column headings**

**S** = Source document type: (1) MO (draft Ministerial Order: MO1 or MO2), (2) G2G (First Nation-Provincial agreement), (3) EBMH (EBM Handbook) or HPG (Hydroriparian Planning Guide) or NC (North Coast LRMP) or CC (Central Coast LRMP).

Objective: ends to be achieved; specific targets not specified.

**Strategy:** a means to achieve an objective (expressed as indicators and targets in some documents); land-use objectives in draft ministerial orders have direct outcomes and specific targets and are thus treated as land-use strategies.

Bullets in the strategy column: divide strategies found in the source documents into clear strategies/tasks, guidance and assessments/plans.

No bullet (clear strategy): a means to achieve an objective that is sufficiently well-articulated to be implemented (can be expressed clearly as an indicator with a definite target)

Black bullet (guidance): a less clearly defined physical consequence and/or target; often an elaboration on how to achieve a target.

White bullet (assessment or plan) = inventories, studies, analyses and plans that are needed to achieve the objective.

**Implementation indicator** = metric that reports progress on the implementation of a strategy; implementation indicators are shown for clear strategies; usually a phrase from an indicator.

Goals related to ecosystem-based management

Overarching EBM goal	Relevant sections of this document.
Ecological integrity	
Maintain the ecological integrity of terrestrial, marin	e and freshwater ecosystems (EBMH).
	rity, to hydroriparian ecological integrity, to specific rare and endangered species, to grizzly bears; to harvesting fish and wildlife (Sustainable population section), of mine sites and reclamation of mine sites sections), to tourism and outdoor recreation (Integrity of natural and cultural features section), and to access (Access
Overarching EBM goal Maintain the ecological integrity of terrestrial, marine and freshwater ecosystems (EBM p5).	See: Objectives related to hydroriparian ecological integrity; Objectives related to terrestrial ecological integrity; Objectives related to specific rare and endangered species; Objectives related to grizzly bears; Objectives related to harvesting fish and wildlife (Sustainable population section); Objectives related to mineral and energy resources (Ecological integrity of mine sites and reclamation of mine sites sections); Objectives related to tourism and outdoor recreation (Integrity of natural and cultural features section); and Objectives related to access (Access restrictions section).
Human well-being Achieve high levels of human well-being (EBMH).	
See: Objectives related to general human well-being resources, to tourism and outdoor recreation, to seen	to First Nations cultural and traditional resources, to harvesting fish and wildlife, to non-timber forest products, to forestry and timber, to mineral and energy ery, and to access.
Achieve high levels of human well-being (EBM p5).	See: Objectives related to First Nations cultural and traditional resources; Objectives related to general human well-being; Objectives related to harvesting fish and wildlife; Objectives related to non-timber forest products; Objectives related to forestry and timber; Objectives related to mineral and energy resources; Objectives related to tourism and outdoor recreation; Objectives related to scenery; and Objectives related to access (Access requirements section).

# Objectives related to First Nations cultural and traditional resources<sup>65</sup>

S	Objectives	Strategy	Implementation indicator	
Sec	e also Objectives related to terrestrial ecological	integrity (Stand structure section, p.106).		
Tr	aditional forest resources <sup>66</sup>			
Ide	entify and maintain traditional forest resources (1	MO).		
Im	plementation indicator: completed traditional use s	studies and stewardship strategies		
•	MO Target: no target G2G Target: 100% (implied) completed traditional EBMH Target: inventory cultural resources LRMP (CC) Target: identify sustenance opportunit			
•	plementation indicator: implemented stewardship s MO Target: no target G2G Target: 100% (implied) implemented steward EBMH/LRMP Target: no target			
•	<ul> <li>Implementation indicator: level of involvement/consultation</li> <li>MO Target: no target</li> <li>G2G Target: 100% consultation (implied) regarding traditional use studies</li> <li>EBMH Target: agreements regarding consultation</li> <li>LRMP (NC) Target: 100% involvement in site alteration and reconnaissance survey processes</li> </ul>			
1	Identify and maintain traditional forest resources in a manner that supports First Nations' food, social and ceremonial use of the forest (MO1 p4; MO2 p4)	No strategy provided		
2	Identify First Nations' traditional resources (TP p3; HFN p3; GFN p3).	[Complete] traditional use studies within each First Nation's Traditional Territory in consultation (TP p3; HFN p3; GFN p3)	Completed traditional use studies	
		<ul> <li>Province and First Nations to work together to develop guidelines and process and review work to date</li> <li>Parties to jointly seek funding forstudies.</li> </ul>	Consultation regarding traditional use studies	
2	Sustain First Nations' traditional resources	[Prepare] and [implement] stewardship strategies for First Nations' traditional resources (TP p3; HFN p3; GFN p3)	Implemented stewardship	

<sup>&</sup>lt;sup>65</sup> See key on p. 74.

<sup>&</sup>lt;sup>66</sup> "traditional forest resources" means monumental cedar and the other wild plant food, botanical medicines and forest resources that are utilized by a First Nation for food, social or ceremonial purposes, and includes wildlife (MO1 p4, MO2 p3). Monumental cedar are considered separately in this table.

S	Objectives	Strategy	Implementation indicator
	(TP p3; HFN p3; GFN p3); sustain cultural/traditional resources (cedar, foods, medicines and other plants and animals) for First Nations' domestic use (TP pC3, KNT pG3, HFN pC3, GFN pG3).	Province to work with First Nations to identify traditional resources and develop assessment procedures and stewardship strategies	strategies
2	Identify and provide for First Nations' access <sup>67</sup> to traditional and cultural resources (KNTp2); [identify] First Nations' cultural/traditional resources; maintain access to cultural/traditional resources, subject to measures for conservation and public health and safety (TP pC3, KNT pG3, HFN pC3, GFN pG3).	<ul> <li>[Complete] traditional use studies and stewardship strategies within each first Nation's Territory (KNTp2)</li> <li>Province and First Nations to work together to develop guidelines and process and review work to date</li> <li>Parties to jointly seek funding forstudies</li> <li> work with First Nations to ensure that cultural resources are sustained</li> </ul>	Completed traditional use studies and stewardship strategies
3	Protect and conserve cultural resources—cedar, plants, wildlife (EBMHp33); maintain the integrity of First Nations' traditional use resources (NCp103); manage areas with abundant supplies of plants use by First Nations for medicinal, food, ceremonial and cultural purposes for sustainable use (CCp60). First Nations have access to sustenance harvesting (EBMH p34); provide access to traditional food and medical botanical sources (CC p49).	Inventory cultural resources (EBMH p33); identify and ensure continued access to sustenance opportunities (e.g. hunting, gathering, fishing for personal use), within ecological limits (CC p50).  [Create] agreements [between] governments and tenure holders and First Nations regarding consultation, resource management and use, and economic interests (EBMH p33)  • First Nations traditional use practices continue based on traditional territory boundaries (NCp103)  • First Nations harvesting of plants will be maintained on all land within the plan area, including within existing or future parks protection areas and biodiversity areas (CCp60)  • Initiate a rehabilitation program designed to restore ecosystems used by First nations for non-timber forest products harvesting, in areas where they are diminishing (CCp60)	Completed inventories of cultural resources Agreements regarding consultation, etc.
3	Ensure First Nations involvement in the assessments and approvals process (NCp103)	First Nations are involved in the site alteration permit request process; First Nations are involved/participate in the reconnaissance survey process (NCp103)	Involvement in site alteration and reconnaissance survey processes

#### Monumental cedar

Identify and conserve monumental cedar for First Nations' cultural use (G2G).

Implementation indicator: % of monumental cedars reserved or made available for First Nations' use

- MO: protect suitable monumental cedars where possible
- G2G Target: protect suitable monumental cedars including a management zone where possible
- EBMH Target: no specific target for monumental cedar; protect and conserve cultural resources (under traditional forest resources)
- LRMP Target: no specific target

-

<sup>&</sup>lt;sup>67</sup> "provide for ... access" is understood to mean that the existing resources are maintained for First Nations' use (KNTp2)

S	Objectives	Strategy	Implementation indicator		
Im	Implementation indicator: reserved stands of monumental cedar				
• [	<ul> <li>MO: reserve stands of monumental cedar where practicable</li> <li>G2G Target: reserve stands with confirmed presence of monumental cedar with management zone</li> <li>EBMH Target: no specific target for monumental cedar stands; protect and conserve cultural resources (under traditional forest resources)</li> <li>LRMP Target: no target</li> </ul>				
Im	plementation indicator: level of consultation				
	MO/G2G Target: no alteration or harvest of monu EBMH/LRMP Target: no target	mental cedars without consultation			
1	Identify and maintain a sufficient volume and quality of monumental cedar (MO1 p5; MO2	Identify and reserve monumental cedars that are confirmed to be suitable for cultural use throughconsultation (MO1p6; MO2p5)	% reserved monumental cedars		
	p5)	• a monumental cedar may be harvested after consultation determines whether: the monumental cedar is suitable; the monumental cedar will be provided to the applicable First Nation; harvesting is required; reservation would make harvestingeconomically unviable; a sufficient volume and quality of monumental cedarhas been identified and reserved (MO1p6; MO2p5)	% of harvested monumental cedars made available for First Nations' use		
		• reserve stands of monumental cedar at the landscape and stand level, where practicable, for future cultural use, after consultation			
2	Identify and conserve monumental cedar <sup>68</sup> for First Nation's cultural use (TPp3; KNTp3; HFNp3; GFNp3)	Reserve stands with confirmed presence of monumental Cedar (TPp4; HFNp4; GFNp4); monumental cedar may only be harvested on a site-specific basis through consultation with the affected First Nations (KNTp3)	% stands with monumental cedars reserved		
	m Np3, Gr Np3)	<ul> <li>tenure holders should identify the location and abundance of monumental cedar operational planning phases</li> <li>ifidentified, the tenure holder should inventory the trees and consult to develop a proposed course of action, and notify MoF, which may include: reserving the trees along with a management zone; harvesting the trees and making them available to the First Nation; other courses of action</li> <li>if the monumental cedar cannot be reserved for safety or economic reasonsthe licensee should consult with the MoF and the First Nation regarding preferred use of the trees</li> <li>This target is transitional pending discussions with the MoF regarding a protocol</li> </ul>			
	M		A C -t did-		
2	Maintain a supply of monumental cedar sufficient to support food, social and ceremonial First Nations' use (TPp4; KNTp3; HFNp4; GFNp4)	<ul> <li>Reserve and/or sustain stands of monumental cedar (TPp4; HFNp4; GFNp4)</li> <li>stands containing monumental cedar may be confirmed through detailed strategic plans or operational planning. Licensees should map and reserve those stands from harvest including a management zone and appropriate boundary</li> <li>reserves may be formally designated in old growth reserves or incorporated in other landscape reserves</li> <li>identification of stands with high probability of producing monumental cedar requires further work to correlate monumental cedar to biophysical attributes such as site series and forest cover</li> </ul>	Area of stands with confirmed presence of monumental cedar		
3	Protect and conserve cultural resources—cedar, plants, wildlife (EBMHp33)	Strategies under traditional forest resources			

<sup>68</sup> Yellow or redcedar > 100cm dbh that will produce at least one high-grade sawlog (grade D and F for the North Coast, Grade D for the Central Coast) > 5m long. This definition may be refined... (TPp3; HFNp3; GFNp3); >80 cm at the butt and >5m in length, relatively know free or tight knots good-on-side (can apply to grades D, F and H logs). This definition will be refined ... (KNTp3)

S	Objectives	Strategy	Implementation indicator	
Si	Stand-level retention of redcedar and yellow cedar			
Ma	Maintain sufficient cedar in the harvested landbase to support cultural use.			
Or	Maintain a supply of cedar for cultural/social purp	ooses (G2G).		
Im	plementation indicator: % retention of cedar			
•	MO/G2G (except GT) Target: no target G2G Target (GT): 50% of cedar-leading stands in EBMH/LRMP Target: no target	mature and/or old age classes		
Im	plementation indicator: % of retained patches/trees	s that are cedar		
	MO/G2G Target: in clearcuts: % representing pre- EBMH/LRMP Target: no specific target	harvest proportion; in partial cuts: % representing pre-harvest proportion in first 15% of total retention		
1	Maintain a sufficient volume and quality of western redcedar and yellow cedar to	where a clearcut silvicultural system is used, design aggregate stand retention to encompass western redcedar and yellow cedar in a range of diameters and species distribution representative of the pre-harvest stand (MO1p6; MO2p6)	% of retained patches that are cedar	
	support cultural use, to the extent practicable (MO1 p6; MO2 p6)	where a partial cut silvicultural system is used, design dispersed stand retention so the first 15% of the total retained basal area maintains mature and old western redcedar and yellow cedar representative of the pre-harvest stand		
2	Retain cedar within harvest units (TPp4; KNTp5; HFNp5; GFNp4; GTp20)	Aggregate retention patches: retain cedar in a range of diameters and abundance generally representative of the pre-harvest stand (use timber recce and cruise data to design in-stand aggregate retention patches to maintain cedar) (TPp4; KNTp5; HFNp4; GFNp5); retain mature and old cedar in an abundance representative of the pre-harvest stand (GTp20)	% of retained patches that are cedar	
		Dispersed retention: within the first 15% of pre-harvest basal area maintain presence of cedar in a range of diameters and abundance generally representative of the pre-harvest stand (use timber recce and cruise data to identify pre-harvest diameter classes and abundance) (TPp4; KNTp5; HFNp4; GFNp5)		
		<ul> <li>in landscapes and watersheds where cedar is significantly reduced below the natural profile, retention should focus on maintaining a higher representation of old and mature cedar (TPp4; KNTp5; HFNp4; GFNp5)</li> <li>maintain presence of mature and old cedar; maintain an abundance of larger diameter cedar that is representative of the</li> </ul>		
		pre-harvest stand (GTp20) • restock cedar and [maintain] natural abundance of [cedar] to free to grow (GTp20)		
2	Maintain a supply of cedar for cultural/social	No specific target: sufficient amounts to support food social and ceremonial First Nations use (TPp4; HFNp5; GFNp4)	Amount of cedar in relation	
	purposes (TPp4; KNTp5; HFNp5; GFNp4); provide for a supply of cedar for cultural/social purposes (GTp20)	• the available volume and the location of cedar stewardship areas will be negotiated with each First Nation through a cedar stewardship strategy (KNTp5); the location of cedar stewardship areas may be identified and established through detailed strategic plans (TPp4; HFNp5; GFNp4)	to use	
		• This objective is transitional until completion of a cedar stewardship strategy (KNTp5); pending discussions with MOFR regarding a protocol (TPp4; HFNp5; GFNp4); to be developed as part of cedar stewardship strategy (GTp20)		
2	Sustain the abundance and distribution of mature and old cedar (GTp20)	Maintain 50% of Cw and Yc leading stands in mature and/or old age classes (GTp20)	% of cedar-leading stands in mature/old age classes	

S	Objectives	Strategy	Implementation indicator
3	Protect and conserve cultural resources—cedar, plants, wildlife (EBMHp33)	Strategies under cultural resources	

## Traditional heritage resources 69

Identify and protect traditional heritage features (MO).

Implementation indicator: % of identified heritage features protected

• MO/G2G/EBMH/LRMP Target: 100% of traditional heritage features including a management zone of sufficient size

Implementation indicator: impact at specific cultural heritage sites

- MO Target: no target
- G2G Target (KM, KS, MA): 0 impact to site or values on Island Point, Arthur Island, Baker Inlet
- G2G Target (MA): 0 impact to features or values on Kinahan, Lawyer and Rachael Islands
- G2G Target (MA): 0 change to seaweed productivity on Stephens Island
- G2G Target (MA): 0 impact to features at Kennedy Island Protection Area
- EBMH/LRMP Target: no target

Implementation indicator: First Nations involvement in assessment and decision-making process

- MO/G2G Target: consultation required for alteration or removal of cultural heritage features
- EBMH/LRMP Target: complete agreements regarding consultation

Assessment or plan: inventories of traditional heritage features (MOs); cultural heritage studies (TP/HFN/GFN)

1	Identify and protect traditional heritage features (MO1 p4; MO2 p4)	<ul> <li>Identify traditional heritage features (MO1p4; MO2p4)</li> <li> protect traditional heritage features include a management zone of sufficient size to protect the integrity</li> <li>a heritage feature may be altered or removed after consultation<sup>70</sup> determines whether the alteration or removal will cause [an] impact <sup>71</sup>; is required <sup>72</sup>; whether there is any practicable alternative</li> </ul>	Identified traditional heritage features  Protected traditional heritage features
2	Identify First Nations' cultural heritageresources (TPp3; HFNp3; GFNp3)	<ul> <li>[Complete] cultural heritage studies within each first Nation's Traditional Territory in consultation (TPp3; HFNp3; GFNp3)</li> <li>Province and First Nations to work together to develop guidelines and process and review work to date</li> <li>Parties to jointly seek funding forstudies</li> </ul>	Completed cultural heritage studies

<sup>&</sup>lt;sup>69</sup> "traditional heritage features" means culturally modified trees and the other archaeological and historical artefacts, sites and locations that are important to the cultural practices, knowledge and heritage of a First nation, but does not include traditional forest resources (MO1 p4, MO2 p3). Culturally modified trees are considered separately in this table.

<sup>&</sup>lt;sup>70</sup> in this table, "consultation" means "information-sharing or consultation with the applicable First Nation"

<sup>&</sup>lt;sup>71</sup> in this table, "impact" means "a material adverse impact to the resource that is of continuing importance to the First Nation"

<sup>&</sup>lt;sup>72</sup> in this table, "is required" means "is required for road access, other infrastructure, or to address a safety concern"

S	Objectives	Strategy	Implementation indicator
2	Maintain the integrity of First Nations' cultural heritage resources (TPp3; HFNp3; GFNp3; KNTp3);	[Protect] identified First Nation's cultural heritage features and sites in consultation (TPp3; HFNp3; GFNp3); cultural heritage features may only be altered or removed pursuant to site-specific consultation (KNTp3); minimal impact on First Nations' cultural features including gravesites, village sites or other major cultural features (KMp10); reserved heritage features and sites will have a management zone of sufficient width (KNTp3)	% identified heritage features protected
		• Province to work with First Nations to identify cultural heritage features and together propose a management zone sufficient to maintain the integrity of the feature or site (TPp3; HFNp3; GFNp3	
2	[in Baker Inlet], preserve cabin sites,	[No] impacts on cultural features [in Baker Inlet] (KM p10, KSp11, MA p4)	Impacts at specific sites
	campsites and other major First Nations' cultural features (KMp10; KSp11, MA p4); fon Kinahan, Lawyer and Rachael Islands and	• work with First Nations during landscape level planning to design old growth reserves that incorporate their major cultural features (KM p10, KSp11, MA p4)	Active roads on Kennedy Island Protection Area
	within Kennedy Island Protection Area] maintain cultural heritage features and values	• promote use of traditional ecological knowledge in landscape-level planning to identify and protect these (KM p10, KSp11, MA p4)	Overnight commercial recreation facilities on
	(MA p3, p7); maintain opportunities for sustenance and traditional activities on	Permanently deactivate roads upon completion of harvest [on Kennedy Island Protection Area] (MA p7)	Kennedy Island Protection Area
	Kinahan, Lawyer and Rachael Islands (MA p3) and Stephens Island (MA p7); maintain the	[No] permanent, overnight commercial recreation facilities [on Kennedy Island Protection Area] (MA p7)	
	integrity of First Nations' traditional use sites	[Maintain] opportunity for gathering [on Kinahan, Lawyer and Rachael Islands] (MA p3)	
	and related cultural landscapes [on Island Point and Arthur Island] (KM p11; KS p12; MA p9) and Digby Island (MA p9);	[No] impacts or loss to cultural features and values [on Kinahan, Lawyer and Rachael Islands] (MA p3)	
		No change in productive capacity of traditional kelp and seaweed sites on Stephens Island (MA p7)	
		Identify Island Point and Arthur Island in landscape-level plans; ensure any adjacent development considers these sites; avoid damaging the sites or the values they are associated with (herring eggs, seaweed and kelp gathering; KMp11; KSp12)	
3	Protect cultural heritage site and features (EBMHp33); ensure that sites are protected/managed (NCp101); maintain the	Identify and protect known and newly inventoried culturally important areas and heritage features <sup>73</sup> (landscape scale; EBMHp43); [protect] heritage resource sites and features with a no-development buffer or special management provisions that maintains the site or feature as agreed to by First Nations (site scale: EBMHp53)	% identified heritage features protected
	integrity of First Nations' traditionalsites and cultural landscapes (NCp103)	o Inventory cultural heritage resources; (landscape scale; EBMHp33); inventories updated; 100% of developments have archaeological reconnaissance surveys conducted during the planning stages; 100% of areas identified as required by the reconnaissance survey have a detailed AIA conducted (NCp101)	
		• if impacts are identified through the AIA, take steps to mitigate and accommodate impacts as outlined in the Heritage Conservation Act or other statues, provincial and First Nations policies, guidelines, and First Nations Land and Marine Use Plans (NCp102)	
		• 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)	
3	Ensure First Nations involvement in the implementation and monitoring of cultural heritage resources management (NCp104)	<ul> <li>Province and First Nations to work together to develop agreed upon guidelines for the management and conservation of cultural heritage resources that will consider and define an approval mechanism related to cultural heritage assessments (NCp104)</li> <li>[Create] agreements [between] governments and tenure holders and First Nations regarding consultation, resource</li> </ul>	

<sup>73</sup> Only large and significant sites such as village sites, concentrations of CMTs, food gathering areas, etc are removed from the timber harvesting landbase (EBMHp43)

S	Objectives	Strategy	Implementation indicator
		management and use, and economic interests (EBMHp33)	
C	ulturally modified trees		
	entify and protect culturally modified trees (MO).		
m	nplementation indicator: protected CMTs		
•	MO/G2G Target: protect selected CMTs including EBMH Target: no specific target for CMTs; prote LRMP Target: no target or strategy aplementation indicator: protected CMT areas <sup>74</sup>	g a management zone oct culturally important areas and heritage feature (included under cultural heritage sites and features)	
•		tion of CMT areas; risk-managed target: no alteration or harvest without consultation protect culturally important areas and heritage feature (included under cultural heritage sites and features)	
	MO/G2G Target: no alteration or harvest of CMT EBMH/LRMP Target: no target	's without consultation	
Ī	Identify and protect culturally modified trees (MO1 p5; MO2 p4)	<ul> <li>Identify and protect cultural modified treesinclude a management zone of sufficient size (MO1p5; MO2p4)</li> <li>particularly those trees that have cultural or spiritual significance, rare or unique features, or scientific significance</li> <li>reserve culturally modified tree areas at the landscape and stand level, where practicable, after consultation</li> <li>a culturally modified tree may be altered or harvested after consultation determines whether alteration or harvesting will cause [an] impact; is required; protection would make harvesting economically unviable; there is any practicable alternative (MO1p5); a culturally modified tree may be altered or removed after consultation where alteration or removal: will not cause [an] impact; is required; or protection would make harvesting economically unviable (MO2p5)</li> </ul>	% CMTs protected
,	Identify and protect culturally modified trees (TPp5; KNTp4; HFNp4; GFNp5)	First Nations consultation is required before CMT areas are altered or removed (TPp5; HFNp4; GFNp5); CMTs may only be harvested on a site-specific basis through consultation with the affected First Nations (KNTp4)  • Criteria for retention: spiritual or cultural significance; rare or unique features; scientific significance  • Criteria for harvest: required to provide access; where retention would make harvesting economically unviable  • Include a management zone sufficient to maintain the integrity of the feature  • CMTs and associated windfirm buffer will become a component of stand-level retention  • These objectives are transitional and map be replaced upon completion of protocol on archaeological resources	% CMT areas reserved
2	Identify and protect culturally modified trees (TPp5; KNTp4; HFNp4; GFNp5)	Default/low-risk target: 100% of CMT areas protected and placed in long-term reserves (TPp5; KNTp4; HFNp4; GFNp5)  Risk-managed target: First Nations consultation is required before CMT areas are altered or harvested (TPp5; HFNp4; GFNp5); CMT areas may be harvested on a site-specific basis through consultation with the affected First Nations (KNTp4)	% CMT areas reserved

<sup>74</sup> A CMT area is where more than 10 CMTs are all found in close proximity to one another (MO1 p2) / within one tree length of each other (MO2 p2)

SC	Objectives	Strategy	Implementation indicator
		<ul> <li>Include a management zone of sufficient width to maintain the integrity of the CMT area</li> <li>CMT areas reserved from harvest will be designated with OGMAs, in-stand retention or other landscape and watershed reserves</li> <li>designation of CMT areas may require adjustment to accommodate other landscape level reserves</li> <li>If designation of CMT areas results in landscape level reserves that exceed the target for old forest, the province will work with the affected First Nations to develop a strategy to address the issue, which may include an amendment of the target</li> </ul>	
	Protect cultural heritage sites and features (EBMHp33)	Strategies under traditional heritage resources	

S Objectives	Strategy	Implementation Indicator
Water quantity	•	
Maintain streamflow within range	of natural variability (EBMH)	
Implementation indicator: equival	ent clearcut area (ECA <sup>76</sup> ) in each watershed	
management/monitoring of imp  MO2 Target: < 20% ECA of w sharing and adaptive managem G2G Target: < 20% ECA of for EBMH Target: < 20% (roaded)	tershed area for sensitive watersheds listed in Schedule 3; or > 20% if assessed as sufficient nt/monitoring of impacts ested area for identified anadromous fish-bearing and/or sensitive watersheds to 30% (unroaded) ECA of forested area per watershed	
Implementation indicator: # and size of dams and diversions		
MO/G2G/EBMH: no target LRMP (CC) Target: avoid dams or diversions		

• MO/G2G/EBMH: no target

• LRMP (CC) Target: Avoid channels and dykes

•		
sustain natural hydrological and fluvial	Maintain an ECA < 20% for the watersheds in Schedule 3 (MO1p7; MO2p6)	ECA within forested portion of
processes (MO1 p7; MO2 p6)	Or [in the north] an ECA > 20% may be maintained after: consultation $^{77}$ ; assessment $^{78}$ ; maintaining an amount, type and distribution of forest cover that is sufficient to sustain natural hydrological and fluvial processes based on the assessment; adaptive management and monitoring $^{79}$ (MO1p7)	each watershed (MO1); ECA within watershed (MO2)
	Or [in the south] where anassessmenthas been completed, maintain the indicated amount, type and distribution of forest cover that is sufficient to maintain stream channel integrity and the natural hydrological and fluvial processes of the watershed (MO2p6)	
	Or [in the south] [maintain] less than the indicated amount after: adaptive management plan and monitoring; and consultation (MO2p6)	

<sup>&</sup>lt;sup>75</sup> See key on p. 74.

<sup>&</sup>lt;sup>76</sup> In most documents, ECA quantifies the % of the forested portion of a watershed where the hydrologic response resulting from alteration of the forest by harvesting, fires, insects and disease is equivalent to the hydrologic response of a clearcut; in MO2, it quantifies the % of a watershed ...

<sup>&</sup>lt;sup>77</sup> In MO1, "...consultation..." means "information-sharing or consultation with the applicable First Nation"; in MO2, "...consultation ..." means "information-sharing or consultation with the applicable First Nation, to consider the potential for adverse effects on any asserted or proven aboriginal rights or aboriginal title of the First Nation"

<sup>&</sup>lt;sup>78</sup> In MO1 and MO2, "assessment" means a CWAP or similar assessment of watershed sensitivity to forest development disturbance completed to relevant professional standards

S	Objectives	Strategy	Implementation Indicator
2	Maintain water quantity within the	Low risk/default target: 20% ECA (TPp5; KNTp6; HFNp6; GFNp5)	ECA within forested portion of
	natural range of variability in identified anadromous fish-bearing and/or sensitive watersheds (TPp5; KNTp6; HFNp6;	Risk-managed target: ECA in identified watersheds based on CWAP or watershed sensitivity assessment (TPp5; KNTp6; HFNp6; GFNp5)	identified watersheds
	GFNp5; GT p22)	<ul> <li>Licensees proposing an ECA above 20% should complete a CWAP (TPp5; KNTp6; HFNp6; GFNp5)</li> <li>MAL<sup>80</sup> to work with each First Nation to identify watersheds to which this may be applied. As a default, apply this objective to sensitive fisheries watersheds as identified by the Province (TPp5; GFNp5; HFNp6; KNTp6)</li> <li>Governments will discuss which watersheds are "identified", and which of the "identified watersheds" require a CWAP or watershed sensitivity assessment (KNTp6)</li> <li>Plans proposing to exceed low risk target must meet flexibility criteria, demonstrate completion of CWAP of watershed sensitivity assessment and have appropriate professional signoff (KNTp6)</li> </ul>	
3	Maintain streamflow within range of	Maintain less than 20% (roaded) to 30% (unroaded) ECA (EBMHp42)	ECA for each watershed
	natural variability (EBMHp42); maintain water quantity within the range of natural variability (NC p75); adequate water flows are maintained within natural levels CC p48)	Avoid creating storage dams and out-of-stream diversions and/or operate so that in-stream flows remain within background range(CC p36)	Stream flow
		Avoid channelling and dyking except where the effect of priori development requires intervention or where lives and valuable property justifies the cost of intervention (CC p36)	
		Maintain fish passage around new dams or waterworks and fish screening at new intakes (CC p48)	
		• Manage the diversion, use and storage of waters to maintain adequate in-stream flows for aquatic and riparian ecosystems (CC p48)	
		Determine in-stream flow requirements for fish and fish habitat to establish water use limits for prospective water users     (CC p48)	
		<ul> <li>remove obstructions to increase aquatic habitat where appropriate (CC p48)</li> <li>water licence applications must address environmental concerns such as water flow variations (CC p48)</li> </ul>	

#### Water quality and stream morphology

Maintain channel characteristics (including stream morphology, bank stability and downed wood) and water quality within range of natural variability (EBMH except for brackets).

Implementation indicator: % of active fluvial terrain units reserved including adjacent natural riparian forest buffer<sup>81</sup>

- MO1 Target: 100% of active fluvial units; 90% of adjacent natural riparian forest; risk-managed target: 80%
- MO2 Target: 90% of natural riparian forest on active fluvial units; risk-managed target: 80%; 0% of adjacent natural riparian forest
- G2G Target (TP, GFN): low-risk/default: 90% of natural amount of mature + old riparian forest within buffer; risk-managed target: 80%
- G2G Target (KNT, HFN): low-risk/default: 90% of natural amount of mature + old riparian forest on units; risk-managed target: 80% of FRPA riparian<sup>82</sup>
- EBMH Target: reserve all active fluvial units and active floodplains including buffer
- HPG Target: reserve all active fluvial units and floodplains of unknown activity including buffer

<sup>&</sup>lt;sup>79</sup> In MO1 and MO2 "adaptive management and monitoring" means "to the extent practicable, developing and implementing an adaptive management and monitoring environmental impacts during any primary forest activity"

<sup>80</sup> Signed KNT document states "Provincial government"; revised KNT document and other G2G documents specify MAL

### S Objectives Strategy

Implementation indicator: % of wetlands reserved including buffer<sup>83</sup>

- MO1 Target: 90% of natural riparian forest around wetlands > 1ha; 90% around wetlands 0.25 1 ha
- MO2 Target: 90% of natural riparian forest around wetlands > 0.25 ha; risk managed target: FRPA
- G2G Target (TP, GFN): low-risk/default: 90% natural riparian forest around all wetlands; risk-managed: 80%
- G2G Target (KNT, HFN): low-risk/default: 90% natural riparian forest around all wetlands; risk-managed: 20% of FRPA riparian<sup>84</sup>
- CCAIP Target: reserve all wetlands including buffer<sup>85</sup>
- EBMH Target: reserve all wetlands including buffer

Implementation indicator: % of natural riparian forest buffer<sup>86</sup> around streams in transportation and deposition zones<sup>87</sup>

- MO1 Target: 90%
- MO2 Target: 90%; risk-managed target: FRPA
- G2G Target (TP, GFN): low-risk/default: 90%; risk-managed target: 80%
- G2G Target (KNT, HFN): low-risk/default: 90%; risk-managed: 80% or FRPA
- EBMH Target: reserve windfirm riparian buffer around streams in the transportation and deposition zones

Implementation indicator: % of potentially unstable terrain harvested (Class IV and V)

- MO/G2G Target: no target
- EBMH Target: watershed scale: reserve Class V terrain; stand scale: reserve areas with moderate to high risk of slope failure
- HPG Target: watershed scale: reserve Class IV and V terrains that may deliver sediment to any stream channel; stand scale: revise based on field assessment

Implementation indicator: % of natural riparian forest around small steep streams with high potential for debris transport

- MO/G2G/EBMH Target: no target
- HPG Target: 97%

Implementation indicator: % of source zone with functional riparian forest<sup>88</sup>

**Implementation Indicator** 

Unless otherwise noted, "buffer" refers to "a management zone with a width, on average, of 1.5 times the height of the dominant trees" which can be "increased or decreased by 0.5 tree heights in any one location to address site specific values"

<sup>&</sup>lt;sup>82</sup> Revised KNT Schedule F lists risk-managed target as "FRPA riparian", not 80% of FRPA riparian

<sup>&</sup>lt;sup>83</sup> 1.5 tree height except 1 tree height for wetlands 0.25 – 1 ha in landscape units in Schedule 7 (MO1)

<sup>&</sup>lt;sup>84</sup> Revised Schedule F lists risk-managed target as "FRPA riparian", not 20% of FRPA riparian

<sup>85</sup> Unclear strategy in CCAIP: listed under "high value fish habitat", but states "all" wetlands (i.e. not just high-value fish habitat)

<sup>&</sup>lt;sup>86</sup> 1.5 tree heights except 1 tree height for S3 streams in MO1

<sup>&</sup>lt;sup>87</sup> **Deposition zones** include alluvial fans and deltas. Deposition zone channels are unconfined valley bottom rivers characterized by horizontal migration across floodplains and valley bottoms or channels on active alluvial fans. **Transportation zone** channels are typically situated in major valleys, with a valley flat and channels of intermediate size. Transport zone channels may be confined by hillslopes, migrate across valley floors, or alternate between confined and unconfined. They are associated with a discontinuous or continuous floodplain. **Source zone:** The upland area of the watershed, constituting the majority of channel length. Source zone channels will generally be small upland/headwater streams. Strategies for G2G and MO are listed under objectives for "active fluvial units" and "S1-S3 streams"—which generally correspond to transportation and deposition zone channels.

S	Objectives	Strategy	Implementation Indicator			
	MO/G2G/EBMH Target: 70%					
In	Implementation indicator: level of water pollutants					
	<ul><li>MO/G2G/EBMH Target: No target</li><li>LRMP (CC) Target: &lt; levels that affect people</li></ul>	e or the ecosystem except where naturally induced contaminants are above				
5	Strategies for active fluvial units					
1	Maintain bank stability and channel integrity (MOIp10)	Retain active fluvial units and retain 90% of the adjacent natural riparian forest in a [buffer] (MO1p10)  • up to an additional 10% of the forest in the management zone may be altered or harvested after: consultation; ascertaining and retaining the amount of natural riparian forest sufficient to maintain bank stability and channel integrity; adaptive management and monitoring; considering whether the alteration or harvesting is required for road access, other infrastructure, or to address a safety concern; and considering whether 90% retention would make harvesting the cutblocks economically unviable (MO1p10)	% natural riparian forest adjacent to active fluvial terrain units			
1	Maintain bank stability and channel integrity (MO2p10)	<ul> <li>Retain 90% of the natural riparian forest on active fluvial units (MO2p10)</li> <li> an additional 10% of the forest on an active fluvial unit may be altered or harvested</li> <li>before altering or harvesting the natural riparian forest in the management zone: ascertain and retain the amount of natural riparian forest sufficient to bank stability and channel integrity on the active fluvial unit; implement adaptive management and monitoring;consult (MO2p10)</li> </ul>	% natural riparian forest on active fluvial terrain units			
2	Maintain the natural ecological function of active fluvial units <sup>89</sup> (TPp6; GFNp6; HFNp6; KNTp7)	Low-risk/default target: < 10% reduction in the natural amount of mature + old riparian forest in [buffer] (TPp6; GFNp6; HFNp6); <10% reduction in the natural amount of mature + old riparian forest [on unit] (HFNp6; KNTp7)  Risk-managed target: < 20% reduction (TPp6; GFNp6); 20% of FRPA riparian (KNTp7, HFNp6)  • plans proposing to exceed the default target or to establish buffers less than 1.5 tree heights must meet flexibility criteria and have appropriate professional sign-off (KNTp7) <sup>90</sup> ; default target may only be exceeded if required for access or safety (HFNp6)  • Watershed-specific objectives will be developed for the existing plantation deciduous forestry in the Central Coast (KNTp7; HFNp6)	% old + mature riparian forest adjacent to active fluvial units			
3	Maintain channel characteristics and water quality within the range of natural variability (EBMHp42); maintain stream morphology (HPGp8)	Reserve all active floodplains, active fluvial units including buffer (EBMHp42); reserve all active fluvial units, and floodplains of unknown activity including buffer (HPGp8)	% natural riparian forest <sup>91</sup> on and adjacent to active fluvial units			

 $<sup>^{88}</sup>$  > 30 years old (MO2); > 30 years old and with some large trees adjacent to streams (MO1, G2G)

<sup>&</sup>lt;sup>89</sup> active fluvial units include low and medium bench floodplains and the hydrogeomorphic riparian zone of all active fans (TPp6; GFNp6; HFNp6; KNTp7)

<sup>&</sup>lt;sup>90</sup> Guidelines mention buffer, but strategy does not include buffer (KNTp7)

<sup>&</sup>lt;sup>91</sup> Riparian forests [are defined] as forests influenced by water (including high-bench floodplain) plus an area extending 1.5 tree heights beyond (EBMHp32)

$\mathbf{S}$	Objectives	Strategy	Implementation Indicator					
S	Strategies for wetlands							
1	No objectives for stream morphology	Retain 90% of the natural riparian forest in [buffers] adjacent to wetlands >1 ha (MO1p8)	% natural riparian forest adjacent					
	(wetlands) in MO1.	In the landscape units set out in Schedule 7, retain 90% of the natural riparian forest in management zones with a width, on average, of the height of the dominant trees around wetlands $0.25 - 1$ ha	to wetlands > 1ha and 0.25 – 1ha					
		<ul> <li> management zones for wetlands may be reduced to a width, on average the height of the dominant trees after: ascertaining and retaining the amount of natural riparian forest sufficient to maintain stream bank stability and stream channel integrity; adaptive management and monitoring: consultation</li> <li>where some of all of the forest in the management zone has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone</li> </ul>						
1	No objectives for stream morphology (wetlands) in MO2.	Retain 90% of the natural riparian forest in [buffers] adjacent to: wetlands > 0.25 ha (MO2p7)  OR	% natural riparian forest adjacent to wetlands >0.25 ha					
		Comply with the provisions for the management of riparian management areas in accordance with FRPA (MO2p8)						
		• before altering or harvesting the natural riparian forest in the management zone: ascertain and retain the amount of natural riparian forest sufficient to maintain stream bank stability and stream channel integrity; [implement] adaptive management and monitoring; andconsult(MO2p8)						
		• where some of all of the forest in the management zone has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone (MO2p8)						
2	Maintain the natural ecological function of wetlands (TPp6; GFNp6; HFNp6;	Low-risk/default target: 10% reduction in the natural amount of mature or old riparian forest within [buffer] (TPp6; GFNp6; HFNp6; KNTp6) <sup>92</sup>	% old + mature riparian forest adjacent to wetlands					
	KNTp6)	Risk-managed target: 20% reduction(TPp6; GFNp6); 20% of FRPA riparian (KNTp7) <sup>93</sup> ; FRPA riparian (HFNp6)						
		• plans proposing to exceed the default target or to establish buffers less than 1.5 tree heights must meet flexibility criteria and have RPBio sign-off (KNTp7, HFNp6)						
2	No objectives for stream morphology (wetlands) in CCAIP.	Reserve all wetlandsincluding buffer (CCAIPp23)	% natural riparian forest adjacent to wetlands					
3	Maintain channel characteristics and water quality within the range of natural variability (EBMHp42); maintain stream morphology (HPGp8)	Reserve all wetlands including buffer (EBMHp42; HPGp8)	% natural riparian forest adjacent to wetlands					

.

<sup>&</sup>lt;sup>92</sup> The indicator column for the signed KNT includes a target: "using FRPA retention standards within the riparian zone" (i.e. 50% retention). This statement is inconsistent with the default of 10% listed under the target column. This inconsistency is removed in the revised KNT version that matches the wording in the table.

<sup>&</sup>lt;sup>93</sup> Revised KNT lists target as "FRPA riparian", not 20% of FRPA riparian

S	Objectives	Strategy	Implementation Indicator					
Si	Strategies for streams in transportation and deposition zones <sup>94</sup>							
1	Maintain stream bank stability and stream channel integrity (MO1p8)s	Retain 90% of the natural riparian forest in [buffers <sup>95</sup> ] adjacent to S1-S3 streams (MO1p8)  • management zones for S3 streams may be reduced to a width, on average the height of the dominant trees after: ascertaining and retaining the amount of natural riparian forest sufficient to maintain bank stability and channel integrity; adaptive management and monitoring: consultation(MO1p8)  • where some of all of the forest in the management zone has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone (MO1p8)	% natural riparian forest adjacent to S1 – S3 streams					
1	Maintain stream bank stability and stream channel integrity (MO2p7)	Retain 90% of the natural riparian forest in [buffers] adjacent to: S1 – S3 streams (MO2p7)  OR  Comply with the provisions for the management of riparian management areas in accordance with FRPA (MO2p8)  • before altering or harvesting the natural riparian forest in the management zone: ascertain and retain the amount of natural riparian forest sufficient to maintain bank stability and channel integrity; [implement] adaptive management and monitoring; andconsult(MO2p8)  • where some of all of the forest in the management zone has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone (MO2p8)	% natural riparian forest adjacent to S1 – S3 streams					
2	Maintain the natural ecological function of streams (Class 1-3), (TPp6; GFNp6; HFNp6; KNTp7)	Low-risk/default target: 10% reduction in the natural amount of mature or old riparian forest within [buffer] (TPp6; GFNp6; HFNp6; KNTp7)  Risk-managed target: 20% reduction(TPp6; GFNp6); 20% of FRPA riparian (KNTp7) <sup>96</sup> ; FRPA riparian (HFNp6)  • plans proposing to exceed the default target or to establish buffers less than 1.5 tree heights must meet flexibility criteria and have RPBio sign-off (KNTp7, HFNp6)	% old + mature riparian forest adjacent to S1 – S3 streams					
3	Maintain channel characteristics and water quality within the range of natural variability (EBMHp42); maintain stream morphology (HPGp8); Maintain natural water quality(CC p47)	Reserve windfirm buffers around streams in the transportation and deposition zones (EBMHp42); reserve buffer around all streams in transportation and deposition zones (HPGp8)  Avoid channelling and dyking except where the effect of priori development requires intervention or where lives and valuable property justifies the cost of intervention (CCp36)  • Applications for development or uses on unstable slopes within riparian areas shall address the possibility of landslides or erosion that could impact water quality or affect public safety (CC p48)	% streams in transportation and deposition zone with windfirm buffers					
<u>S</u> 1	trategies for unstable terrain with pot	tential to deliver sediment to streams						
3	Maintain channel characteristics and water quality within the range of natural	Reserve areas with Class V slope stability (EBMHp42); Reserve all class IV and V terrains that are located in positions such that a surcharge of sediments may be delivered to any stream channel (HPGp8)	% Class IV and V terrain harvested					

<sup>&</sup>lt;sup>94</sup> These classes of streams (based on function) will overlap with S1 – S3 streams (based on channel width and presence of fish) in many cases. See footnote 87 for definition of zones.

<sup>95</sup> See footnote 81

<sup>&</sup>lt;sup>96</sup> Revised KNT lists target as "FRPA riparian", not "20% of FRPA riparian"

S	Objectives	Strategy	Implementation Indicator
	variability (EBMHp42); Maintain stream morphology (HPGp8); Maintain water quality within the range of natural variability (NCp75); Maintain natural water quality (CC p47)	<ul> <li>Provide greater riparian setback in areas which are prone to high natural erosion (NC p75, CCp35)</li> <li>Consider activities that create risk or erosion and slope failure (NC p75); Applications for development or uses on unstable slopes within riparian areas shall address the possibility of landslides or erosion that could impact water quality or affect public safety (CC p48)</li> <li>Incorporate timing restrictions in the prescriptions for operations in unstable areas (CCp35)</li> </ul>	Length of road in Class IV and V terrain
St	rategies for small steep streams with	h high potential for debris transport	
3	Maintain stream morphology (HPGp8)	$\label{eq:maintain} \textit{Maintain} < 3\% \ \textit{deviation from natural riparian forest next to small steep streams with high susceptibility to debris flow} \\ \textit{(HPGp10)}$	% natural riparian forest next to small steep streams with high susceptibility to debris flow
Si	trategies for functional riparian forest	t in the source zone	
1	Sustain natural hydrological and fluvial processes (MO1p10)	Maintain 70% or more of the forest in the portion of the watershed occupied by upland streams, as functional riparian forest (MO1p9) <sup>97</sup> • < 70% may be maintained as functional riparian forest after: consultation; assessment; maintaining an amount, type and distribution of forest covers that is sufficient to sustain natural hydrological and fluvial processes; adaptive management and monitoring	% forest > 30 years with some large downed wood next to streams in source zone
1	Maintain stream bank stability and stream channel integrity (MO2p9)	For the watersheds in Schedule 3, maintain 70% or more of the forested portion of the watersheds at or above the age required to meet hydrologically effective greenup, adjacent to upland streams (MO2p9) <sup>98</sup> • < 70% may be maintained at or above the age required to meet hydrologically effective greenup after: ascertaining and retaining the amount of natural riparian forest sufficient to maintain stream bank stability and stream channel integrity; adaptive management and monitoring; consultation	% of forested portion of watershed > 30 years adjacent to upland streams
2	Maintain the natural ecological function of upland <sup>99</sup> streams (TPp6; GFNp6; HFNp6; KNTp7)	Low-risk/default target: 30% reduction in the natural amount of functional riparian forest 100 (TPp6; GFNp6); 30% reduction in the natural amount of functional riparian forest in identified watersheds HFNp6; KNTp7)  Risk-managed target: based on CWAP or watershed sensitivity assessment (TPp6; GFNp6; HFNp6); based on CWAP in designated watersheds or watershed sensitivity assessment (KNTp7)  Provincial government to work with KNT to identify watersheds to which this will be applied (KNTp7)  Plans proposing to exceed low risk target must meet flexibility criteria, demonstrate completion of CWAP or Watershed Assessment and have appropriate professional signoff (KNTp7)  Retention should be designed to encompass streams with unique microclimate and streams with other rare ecological or geomorphological characteristics (KNTp7)	% forest > 30 years old with some large trees adjacent to upland streams

<sup>&</sup>lt;sup>97</sup> The "functional riparian forest" definition does not require the forest to be riparian; this strategy applies to all forest in the source zone and is essentially equivalent to the ECA strategies

<sup>&</sup>lt;sup>98</sup> This strategy is unclear: does it apply to the forested portion of the watershed (as per the target) or to forest adjacent to upland streams?

<sup>&</sup>lt;sup>99</sup> "Upland streams are Class 4 – 6 with slope > 5%" (TPp6; GFNp6; HFNp6; KNTp7)

<sup>&</sup>lt;sup>100</sup> Functional riparian forest is defined as forest that has reached hydrologically effective greenup [30 years], and a proportion ... must also have some large trees for recruitment of large organic debris (KNTp7, TPp6)

S	Objectives	Strategy	Implementation Indicator
3	Maintain channel characteristics and water quality within range of natural variability	Maintain 70% of the natural riparian forest in the source zone (EBMHp42); maintain < 30% of forest younger than 30 years in source zone (HPGp8)	% natural riparian forest in source zone
	(EBMHp42); maintain stream morphology; provide downed wood (HPGp8)		% forest < 30 years in source zone
G	eneral strategies		
3	Maintain water quality and quantity within range of natural variability (NC p75); maintain natural water quality(CC p47)	<ul> <li>avoid development that simultaneously modifies both sides of streams; dual development could be mitigated by more riparian protection (NC p75)</li> <li>apply management practices to land development activities to minimize or avoid impacts to water quality (CC p47)</li> <li>mitigate and control the cumulative effects of material introduced into water sources from development practices (CCp35)</li> <li>set back roads from riparian areas or utilize alternative methods of harvesting to avoid building roads (CCp35)</li> <li>identify streams/watersheds requiring restoration and encourage local watershed restoration initiatives to improve water quality from natural and man-made disturbances (CC p47)</li> <li>conduct post-development monitoring to assess secondary or cumulative effects(CCp35)</li> </ul>	
3	Maintain water quality and quantity within range of natural variability (NC p75)	Ensure that water pollutants are below levels that affect people or the ecosystem except where naturally induced contaminants are at levels above this (CC p36)  • minimize and/or avoid the use of pesticides (CC p48)	level of pollutant
		• develop, implement, and ensure adequate government funding for appropriate water quality monitoring program (CCp37)	

## Hydroriparian biodiversity and productivity: coarse filter

Maintain the natural ecological function of hydroriparian (i.e. aquatic and terrestrial riparian) ecosystems (composite of G2G).

Implementation indicator: % reduction in natural riparian forest in buffer around hydroriparian ecosystems

Hydroriparian ecosystem	MO1 Target	MO2 Target	G2G Target	EBMH Target	HPG Target
Estuaries	0% (5%) <sup>101</sup>	0% (5%) or 10% (20%) <sup>102</sup>	10% (20%)	3% (10%)	3% (10%)
Karst	None	None	None	3% (10%)	3% (10%)
Floodplains <sup>103</sup>	10% (20%)	10% (20%)	10% (20%)	10% (50%)	10% (50%)
Fans	10% (20%)	10% (20%)	10% (20%)	10% (50%)	10% (50%)
Streams >1.5 m with fish	10% (20%)	10% (20%)	10% (20%)	$10 - 30\%^{104} (50 - 70\%)$	$10 - 30\%^{105} (50 - 70\%)$
Small (1 – 3 m) steep (>20%) streams/gullies with high susceptibility to debris flow	None	None	None	None	3% (10%)
Small $(1 - 3 \text{ m})$ steep streams/gullies (>20%) with distinct microclimate $^{106}$	None	None	None	10% (50%)	10% (50%)
All other streams <sup>107</sup>	None	None	None	30% (70%)	30% (70%)
Ocean spray forest	None	None	None	30% (70%)	30% (70%)

S	Objectives	Strategy					Implementation Indicator
I	akes <sup>108</sup>	•	10% (20%)	10% (20%)	10% (20%)	30% (70%)	30% (70%)
7	Wetlands <sup>109</sup>		10% (20%)	10% (20%)	10% (20%)	30% (70%)	30% (70%)
F	Forested swamps <sup>110</sup>		30% (40%)	30% (40%)	30% (40%)	10% (50%)	10% (50%)
F	Bogs		None	None	None	30% (70%)	30% (70%)
F	Fens		None	None	None	30% (70%)	30% (70%)
S	trategies for estuaries				<u> </u>		
1	No objectives for coarse filter hydroriparian biodiversity (estuaries) in MO1.	All estuaries considered "hi	gh-value fish habitat	"; see strategies under fir	ne filter biodiversity: high-	-value fish habitat (p. 97)	
1	No objectives for coarse filter hydroriparian	See strategies under fine fil	ter biodiversity for es	stuaries considered high-	value fish habitat (p. 97)		
	biodiversity (estuaries) in MO2.	For other estuaries:					
		retain 90% of the natural riparian forest in [buffers] adjacent to: estuaries > 0.25 ha (MO2p7)  OR  Comply with the provisions for the management of riparian management areas in accordance with FRPA (MO2p8)					
		<ul> <li>before altering or harves natural riparian forest st and monitoring; and .</li> <li>where some of all of the practicable, recruit functions.</li> </ul>	ufficient to maintain i consult forest in the managei	bank stability and channe ment zone has been pr	el integrity; [implement eviously altered or harves	f] adaptive management	
2	Maintain the natural ecological function of	See strategies under fine fil	ter biodiversity for es	stuaries considered high-	value fish habitat (p. 97)		% natural riparian forest around
	estuaries (TPp6; GFNp6; KNTp6; HFNp6)	KNTp6; Low-risk/default target: 10% reduction in the natural amount of mature or old riparian forest within [buffer] (TPp6; GFNp6; HFNp6; KNTp6; CCAIPp23)		estuaries			
		Risk-managed target: 20% reduction(TPp6; GFNp6); 20% of FRPA riparian (KNTp6) <sup>111</sup> ; FRPA riparian (HFNp6)					
		• plans proposing to excee and have RPBio sign-off		or to establish buffers less	s than 1.5 tree heights mus	st meet flexibility criteria	
3	Maintain the natural diversity of species, ecosystems, seral stages (EBMHp32); Protect critical and sensitive hydroriparian ecosystems (EBMHp42); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	Maintain 97% of the natura trigger) to 90% (high risk t Maintain < 3% deviation fr subregional target (watersh	hreshold) Across a com natural riparian	ıll watershed meet the sui	bregional target (watershe	ed scale; EMBHp41);	% natural riparian forest adjacent to estuaries

S	Objectives	Strategy	Implementation Indicator				
St	Strategies for karst						
3	Maintain the natural diversity of species, ecosystems, seral stages (EBMHp32); Protect critical and sensitive hydroriparian ecosystems (EBMHp42);Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	Maintain 97% of the natural riparian forest in karst landscapes (subregional/territory scale; EMBHp32); Maintain 97% (ACM trigger) to 90% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 3% deviation from natural riparian forest in karst landscapes (subregional scale); Maintain < 10% deviation meet subregional target (watershed scale HPGp10)	% natural riparian forest in karst landscapes				
St	rategies for floodplains and fans						
1	No objectives for coarse filter hydroriparian biodiversity (floodplains and fans) in MO.	See strategies under water quality and stream morphology for active fluvial units (p. 87)					
2	Maintain the natural ecological function of	See strategies under water quality and stream morphology for active fluvial units (p. 87)					
	active fluvial units (TPp6; GFNp6; HFNp6; KNTp7)	Maintain > 50% of the natural riparian forest next to fans (CCAIPp23)					
3	Protect critical and sensitive hydroriparian ecosystems (EBMHp42); maintain the natural diversity of species ecosystems, seral stages (EMBHp32); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	See strategies under water quality and stream morphology for active fluvial units (p. 87)  Maintain 90% of the natural riparian forest next to floodplains, fans (subregional/territory scale; EMBHp32); Maintain 90% (ACM trigger) to 50% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 10% deviation from natural riparian forest next to floodplains, fans (subregional scale); Maintain < 10% deviation meet subregional target (watershed scale HPGp10)	% natural riparian forest next to floodplains and fans				
St	rategies for fish streams > 1.5 m wid	<u>de</u>					
1	No objectives for coarse filter hydroriparian biodiversity (fish streams > 1.5m) in MO.	See strategies under water quality and stream morphology for streams in transportation and deposition zone (p. 89)					
2	Maintain the natural ecological function of streams (Class 1 – 3) (TPp6; GFNp6; HFNp6; KNTp6)	See strategies under water quality and stream morphology for streams in transportation and deposition zone (p. 89)	% natural riparian forest around streams				
3	Maintain the natural diversity of species, ecosystems, seral stages (EMBHp32); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	See strategies under water quality and stream morphology for streams in transportation and deposition zone (p. 89)  Maintain 70% of the natural riparian forest next to other aquatic ecosystems (subregional/territory scale; EMBHp32);  Maintain 70% (ACM trigger) to 30% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 30% deviation from natural riparian forest around remaining hydroriparian ecosystems (subregional scale); Maintain < 70% deviation meet subregional target (watershed scale HPGp10)	% natural riparian forest around streams				
St	rategies for small streams		1				
1	No objectives for coarse filter hydroriparian biodiversity (small streams) in MO.	See strategies under water quality and stream morphology for functional riparian forest in the source zone (p. 90)  • allocate retention to include upland stream reaches with unique microclimate or other rare ecological or					

$\mathbf{S}$	Objectives	Strategy	Implementation Indicator
		geomorphological characteristics (MO1 p9; MO2 p9)	
2	Maintain the natural ecological function of	See strategies under water quality and stream morphology for functional riparian forest in the source zone (p. 90)	
	upland streams (TPp6; GFNp6; HFNp6; KNTp7)	• Retention should be designed to encompass streams with unique microclimate or other rare ecological or geomorphological characteristics (TPp6; GFNp6; HFNp6; KNTp7)	
2	No objectives for coarse filter hydroriparian biodiversity (small streams) in CCAIP.	Maintain > 50% of the natural riparian forest next to small steep streams/gullies with unique microclimate (CCAIPp23)	% natural riparian forest next to small steep streams/gullies with unique microclimate
3	Protect critical and sensitive hydroriparian ecosystems (EBMHp42); Maintain the	Maintain < 3% deviation from natural riparian forest next to small steep streams with high susceptibility to debris flow (subregional scale); Maintain < 10% deviation meet subregional target (watershed scale HPGp10)	% natural riparian forest next to small streams of various types
	natural diversity of species, ecosystems, seral stages (EMBHp32); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	Maintain 90% of the natural riparian forest next to small steep streams/gullies with unique microclimate (subregional/territory scale; EMBHp32); Maintain 90% (ACM trigger) to 50% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 10% deviation from natural riparian forest around small steep streams with distinctive microclimate (subregional scale); Maintain < 50% deviation meet subregional target (watershed scale HPGp10)	
		Maintain 70% of the natural riparian forest next to other aquatic ecosystems (subregional/territory scale; EMBHp32); Maintain 70% (ACM trigger) to 30% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 30% deviation from natural riparian forest around remaining hydroriparian ecosystems (subregional scale); Maintain < 70% deviation meet subregional target (watershed scale HPGp10)	
S	trategies for ocean spray forest		
1	No objectives for coarse filter hydroriparian biodiversity (ocean spray forest) in MO.	No strategies.	
2	Maintain the functional integrity of shoreline forests (MA p2)	[Maintain] <50% deviation from natural occurrence of shoreline forest in Union/Work Channel (MA p2)	% of natural riparian forest next to ocean
3	Maintain the natural diversity of species, ecosystems, seral stages (EMBHp32); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	Maintain 70% of the natural riparian forest next to other aquatic ecosystems (subregional/territory scale; EMBHp32); Maintain 70% (ACM trigger) to 30% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 30% deviation from natural riparian forest around remaining hydroriparian ecosystems (subregional scale); Maintain < 70% deviation meet subregional target (watershed scale HPGp10)	% natural riparian forest next to ocean
S	trategies for lakes	,	1
1	No objectives for coarse filter hydroriparian	Retain 90% of the natural riparian forest in [buffers] aroundlakes >1 ha (MO1p8)	% natural riparian forest adjacent
	biodiversity (lakes) in MO1.	In the landscape units set out in Schedule 7, retain 90% of the natural riparian forest in management zones with a width, on average, of the height of the dominant trees around lakes $0.25 - 1$ ha	to lakes > 1ha and 0.25 – 1ha
		• management zones may be reduced to a width, on average the height of the dominant trees after: ascertaining and retaining the amount of natural riparian forest sufficient to maintain bank stability and channel integrity; adaptive	

S	Objectives	Strategy	Implementation Indicator
		<ul> <li>management and monitoring: consultation</li> <li>where some of all of the forest in the management zone has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone</li> </ul>	
1	No objectives for coarse filter hydroriparian biodiversity (lakes) in MO2.	Retain 90% of the natural riparian forest in [buffers] around: lakes > 0.25 ha (MO2p7)  OR	% natural riparian forest adjacent to lakes >0.25 ha
		Comply with the provisions for the management of riparian management areas in accordance with FRPA (MO2p8)	
		<ul> <li>before altering or harvesting the natural riparian forest in the management zone: ascertain and retain the amount of natural riparian forest sufficient to maintain bank stability and channel integrity; [implement] adaptive management and monitoring; andconsult</li> <li>where some of all of the forest in the management zone has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone</li> </ul>	
2	Maintain the natural ecological function of lakes (TPp6; GFNp6; HFNp6; KNTp7)	Low-risk/default target: 10% reduction in the natural amount of mature or old riparian forest within [buffer] (TPp6; GFNp6; HFNp6; KNTp7)	% old + mature riparian forest adjacent to lakes
		Risk-managed target: 20% reduction(TPp6; GFNp6); 20% of FRPA riparian (KNTp7) <sup>112</sup> ; FRPA riparian (HFNp6)	
		• plans proposing to exceed the default target or to establish buffers less than 1.5 tree heights must meet flexibility criteria and have RPBio sign-off (KNTp7, HFNp6)	
3	Maintain the natural diversity of species, ecosystems, seral stages (EMBHp32); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	Maintain 70% of the natural riparian forest next to other aquatic ecosystems (subregional/territory scale; EMBHp32); Maintain 70% (ACM trigger) to 30% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 30% deviation from natural riparian forest around remaining hydroriparian ecosystems (subregional scale); Maintain < 70% deviation meet subregional target (watershed scale HPGp10)	% natural riparian forest next to lakes
3	Manage lakeshore riparian area habitat for terrestrial and aquatic species (CCp36)	<ul> <li>in the absence of fish inventory, classify lakes by applying the precautionary approach; the province to complete a Regional Lake Classification Guidebook that applies to all lakes in the plan area; consider the CIT freshwater classification system in future discussions (CC p36)</li> <li>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; in accordance with such strategies, reserve windfirm buffers(CC p36)</li> <li>manage lakeshore areas to prevent soil degradation; provide increased riparian setback for areas which are naturally</li> </ul>	
9	 trategies for wetlands	erodible (CC p36)	
1	No objectives for coarse filter hydroriparian biodiversity (wetlands) in MO.	See strategies under channel integrity for wetlands (p. 88)	
2	Maintain the natural ecological function of wetlands (TPp6; GFNp6; HFNp6; KNTp6)	See strategies under channel integrity for wetlands (p. 88)	

S	Objectives	Strategy	Implementation Indicator
3	Maintain the natural diversity of species, ecosystems, seral stages (EMBHp32); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	See strategies under channel integrity for wetlands (p. 88)  Maintain 70% of the natural riparian forest next to other aquatic ecosystems (subregional/territory scale; EMBHp32);  Maintain 70% (ACM trigger) to 30% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 30% deviation from natural riparian forest around remaining hydroriparian ecosystems (subregional scale); Maintain < 70% deviation meet subregional target (watershed scale HPGp10)	
<u>S</u>	trategies for forested swamps		
1	No objectives for coarse filter hydroriparian	Retain forested swamps > 1ha and retain 70% of the natural riparian forest in a [buffer] (MO1p8)	% natural riparian forest adjacent
	biodiversity (forested swamps) in MO1.	Retain forested swamps between 0.25 and 1 ha in size, found in the landscape units set out in Schedule 7, and retain 70% of the [adjacent] natural riparian forest in a [1-tree height buffer] (MO1p9)	to forested swamps
		<ul> <li> an additional 10% of the forest in the adjacent natural riparian forest management zone may be altered or harvested after: consultation; ascertaining and retaining the amount of natural riparian forest sufficient to maintain the integrity of the forested swamp;adaptive management and monitoring; considering whether the alteration or harvesting is required for road access, other infrastructure, or to address a safety concern; and considering whether 70% retention would make harvesting the cutblocks economically unviable</li> <li>where some or all of the forest within the management zone required has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone</li> </ul>	
1	No objectives for coarse filter hydroriparian biodiversity (forested swamps) in MO2.	<ul> <li>Adjacent to forested swamps &gt; 0.25ha, retain 70% of the natural riparian forest in a [buffer] (MO2p8)</li> <li> an additional 10% of the forest in the management zone adjacent to the forested swamp may be altered or harvested where: alteration or removal is required for road access, other infrastructure, or to address a safety concern; or where 70% retention would make harvesting the cutblocks economically unviable</li> <li>before altering or harvesting the natural riparian forest in the management zone: ascertain and retain the amount of natural riparian forest sufficient to maintain the integrity of the forested swamp; implement adaptive management and monitoring; consultation</li> <li>where some or all of the forest within the management zone required has been previously altered or harvested, to the extent practicable, recruit riparian forest in that management zone</li> </ul>	% natural riparian forest adjacent to forested swamps
2	Maintain the natural ecological function of forested swamps (TPp6; GFNp6; HFNp6; KNTp7)	Low-risk/default target: < 30% reduction in the natural amount of mature + old riparian forest within [buffer] (TPp6; GFNp6; HFNp6; KNTp7)  Risk-managed target: < 40% reduction(TPp6; GFNp6; HFNp6; KNTp7 <sup>113</sup> )  • EBM working group to recommend operational and modeling definition of "forested swamps" (TPp6; GFNp6; HFNp6;	% old + mature riparian forest adjacent to forested swamps
		<ul> <li>KNTp7)</li> <li>Plans proposing to exceed the default target must meet the flexibility criteria and have appropriate professional sign-off (KNTp7)</li> </ul>	
2	No objectives for coarse filter hydroriparian biodiversity (forested swamps) in CCAIP.	Maintain >50% of the natural riparian forest next to forested swamps (CCAIPp23)	% natural riparian forest adjacent to forested swamps
3	Protect critical and sensitive hydroriparian	Maintain 90% of the natural riparian forest next to forested swamps (territory/subregional scale EBMHp32); Maintain <	% natural riparian forest adjacent

S	Objectives	Strategy	Implementation Indicator
	ecosystems (EBMHp42); Maintain the natural diversity of species, ecosystems, seral stages (EMBHp32); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	10% deviation from natural riparian forest next to forested swamps (subregional scale HPGp10); Maintain 90% (ACM trigger) to 50% (high risk threshold) of the natural riparian forest next to forested swamps Overall meet the subregional target (watershed scale EBMHp41); Maintain < 50% deviation from natural riparian forest next to forested swamps (watershed scale HPGp10)	to forested swamps
St	trategies for bogs and fens		1
3	Maintain the natural diversity of species, ecosystems, seral stages (EMBHp32); Maintain coarse filter hydroriparian biodiversity (HPGp10); Maintain characteristic ecosystem productivity (HPGp9)	Maintain 70% of the natural riparian forest next to other aquatic ecosystems (subregional/territory scale; EMBHp32); Maintain 70% (ACM trigger) to 30% (high risk threshold) Across all watershed meet the subregional target (watershed scale; EMBHp41); Maintain < 30% deviation from natural riparian forest around remaining hydroriparian ecosystems (subregional scale); Maintain < 70% deviation meet subregional target (watershed scale HPGp10)	
St	trategies for all ecosystems		1
3	Sustain natural healthy ecological functioning of the complete range of hydroriparian ecosystems (NC p 77);maintain the full range of ecosystem types in a condition and pattern that will promote the persistence of the ecological communities an d habitats within them (CC p35)	<ul> <li>No strategies.</li> <li>Wildlife trees will be retained in riparian management areas; increasing the width of the riparian management zones may be required(CC p36)</li> <li>utilize riparian management zones of sufficient size to minimize the risk in areas with high windthrow hazards (CC p36)</li> <li>set back roads from riparian areas or utilize alternative methods of harvesting to avoid building road (CCp35)</li> <li>conduct post-development monitoring to assess secondary or cumulative effects(CCp35)</li> </ul>	
	ine filter hydroriparian biodiversityotect and sustain high-value fish habitat (EBMH	y: Fish and high-value fish habitat	
	plementation indicator: % natural riparian fores • MO/G2G/EBMH Target: 100%	t within 1.5 tree heights around high-value fish habitat	
•	plementation indicator: % of watershed harvest MO/G2G Target: no target EBMH Target 10%	ed in 3 years in small watersheds	
As	sessment or plan: fish presence inventory (CC)		
1	No objectives for fine filter hydroriparian biodiversity in MO.	Adjacent to high value fish habitat, reserve [buffers], and do not alter or harvest the forest in the reserve zones (MO1p7; MO2p7)	% natural riparian forest adjacent to high-value fish habitat
		<ul> <li>where there is no practicable alternative, up to 5% of the forest in a reserve zonemay be altered or harvested for road access, other infrastructure, or to address a safety concern (MO1p7; MO2p7)</li> <li>where some or all of the forest within the reserve zone requiredhas been previously altered or harvested, recruit functional riparian forest in that reserve zone, to the extent practicable (MO1p7; MO2p7)</li> </ul>	NS

S	Objectives	Strategy	Implementation Indicator
2	Maintain the natural ecological function of streams, lakes, wetlands, and estuaries classified as high value fish habitat (KNTp6;	Low risk/default target: 0% reduction in the natural amount of old riparian forest within [buffer around] streams high value fish habitat <sup>114</sup> (KNTp6; GFNp6; TPp6); 0% reduction in the natural amount of mature or old riparian forest (HFNp6); reserve 100% of high-value fish habitat and adjacent riparian forest from logging in Baker Inlet (MA p4; KS p11; KM p10)	% reduction in the natural amount of old (or old or mature) riparian forest
	GFNp6; TPp6; HFNp6); Maintain the productive capacity of fish habitat in Baker	• Where no practical alternative exists, permit road construction in Baker Inlet (KS p11; MA p4; KM p10)	
	Inlet (MA p4; KS p11; KM p 10)	Risk-managed target: 5% reduction (KNTp6; GFNp6; TPp6; HFNp6)	
		0% logging that has damaged marine fisheries values in Baker Inlet (MA p4)	
		<ul> <li>Minimal impact from logging practices that damage marine fisheries values in Baker Inlet (KS p11; KM p10)</li> <li>Plans proposing to exceed the low risk target or to establish buffers less than 1.5 tree heights must meet flexibility criteria and have RPBio sign-off (KNTp6)</li> </ul>	
2	No objectives for fine filter hydroriparian biodiversity in CCAIP.	Reserve all high value fish habitat including buffer <sup>115</sup> (CCAIP p23))	% high value fish habitat reserved including buffer
3	Protect and sustain high value fish habitat (EMBHp32); Maintain high-value fish	Reserve all high value fish habitat including buffer (watershed scale; EBMHp42); Reserve all high-value fish habitat and adjacent areas from development (HPGp9)	% high value fish habitat reserved including buffer
	habitat (HPGp9); maintain high quality fish habitat in watershed with abundant salmon populations (CC p39); Maintain the	Limit disturbance to 10% of forest area per 3-year period in small watershed (<1,000ha) with high-value fish habitat (HPGp9)	
	productive capacity of all high value fish	Deactivate road networks after harvesting (HPGp9)	
	habitat (NCp75) <sup>116</sup>	• Create watershed-scale refugia until habitat recovery has occurred in other watersheds within the landscape (landscape scale; HPGp9)	
		<ul> <li>Apply low risk management targets to watersheds containing abundant salmon populations (territory/subregional scale; EBMHp32)</li> </ul>	
		Conduct fish habitat restoration and enhancement projects where appropriate (CC p39)	
		Avoid building roads immediately above sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rearing areas (NCp75, CCp35)      Color of the little sensitive spawning or rear	
		<ul> <li>incorporate fish habitat protection measures in lower level planning (CC p39)</li> <li>improve coordination of fish habitat restoration and enhancement projects through coordinated project review and</li> </ul>	
		enhanced communication(CC p39)	
		support monitoring to meet fish habitat objectives (CC p39)	
		• monitor and adapt practices that impact instream and riparian fish habitat (CC p39)	
3	Avoid the introduction of alien species (CC p39)	No strategies.	
3	Maintain healthy populations/sub-	No strategies.	
	populations of harvested fish (EBMHp34); sustain adequate levels of	• establish precautionary harvest levels for fish and wildlife (EBMHp34); maintain fish harvesting within the carrying capacity of the ecosystem and catch rates within the rate of renewal (CC p39)	
	spawning biomass and population age	• protect and enhance freshwater fish populations (CC p39)	
	structure of aquatic species (CC p39)	• restore and maintain fish populations to levels within their natural historic range of variability (CC p57)	
		• government and stakeholders to ensure effective, realistic, and cooperative enforcement efforts with respect to fish, fish habitat, and fisheries related activities (CC p57)	
		<ul> <li>incorporate fish protection measures in lower level planning (CC p39)</li> </ul>	

S Object	ectives	Strategy	Implementation Indicator
		o conduct fish presence inventories prior to development (CC p39)	
Hydror	riparian biodiversity: connect	ivity	
Provide ri	riparian connectivity.		
This is a s	sub-objective of Design harvest to approx	imate natural disturbance pattern and distribution (EBMH)	
Implemen	ntation indicator: % streams with natural	cover along length with process zones	
<ul> <li>MO/G2G Target: no target</li> <li>EBMH Target: no target; guidance to create small stream protection areas to include riparian corridors</li> <li>HPG Target: &gt; 60%</li> </ul>			
distur	gn harvest to approximate natural erbance pattern and distribution MHp41)	No strategies.  • Create small stream protection areas to include riparian corridors (EBMHp41)	
3 Provi	ide riparian connectivity (HPGp9)	Maintain > 60% of streams within a process zone with natural levels of cover (HPGp9)	% streams with natural cover along length

# Objectives related to terrestrial ecological integrity<sup>117</sup>

S Objective		Strategy	Implementation indicator
Ecosystem represer	ntation		
Maintain the natural diversity	y of species, ecosystem	s and seral stages (EBMH).	
See also Objectives related to	o hydroriparian ecologic	cal integrity (Hydroriparian biodiversity and productivity: coarse filter, p.91 and Fine filter hydroriparian biodiversity: Fish and high	h-value fish habitat, p.97).
Implementation indicator: %	of old forest <sup>118</sup> in each	ecosystem type <sup>119</sup> .	
<ul> <li>common ecosystem type</li> <li>G2G/CCAIP Target: min the landscape unit/landse</li> <li>NCAIP Target: minimum rare and very rare ecosystem</li> </ul>	es and 70% of natural al nimum 30% of natural a cape scale). m 30% of natural abund stem types (to be met at	rest analysis unit per landscape unit are shown in Schedule 4 of MOs. Percentages in Schedule 4 appear to equal 30 % of natural abbundance for modal, rare and very rare ecosystem types, however, the basis for Schedule 4 is not clearly stated. abundance for common and very common ecosystem types <sup>121</sup> and minimum 70% of natural abundance for modal, rare and very rare the landscape scale). ance 122 per watershed; minimum 50% of natural abundance per landscape; minimum 70% of natural abundance per territory/subreg	e ecosystem types (to be met at m 90% of natural abundance for
Implementation indicator: %	of mid-seral forest <sup>123</sup> in	n each ecosystem type	
<ul> <li>MO Target: &lt; 50% of ea</li> <li>G2G Target: &lt; 50% of e</li> <li>CCAIP/NCAIP Target: </li> <li>EBMH Target: &lt; 50% o</li> </ul>	each site series per lands < 50% of each ecosyste	em type (unspecified scale).	
Implementation indicator: %	of early-seral forest <sup>124</sup>	in each ecosystem type.	
<ul><li>MO1/G2G (TP,GFN) Targ</li><li>MO2/G2G (KNT, HFN)/E</li></ul>		series surrogate per landscape unit. t.	
Assessment or plan: Natural	disturbance study (EBN	MH); Analysis of harvestable area in each site series (EBMH); Site series inventory (EBMH).	
1 No objectives for old-set MO2	ral forest in MO1 or	In the landscape units in Schedule 4 <sup>125</sup> , retain for each site series surrogate listed, an amount of old forest equal to or greater than the specified old forest target for that site series surrogate, except where alteration or harvesting is required for road access, other infrastructure or to address safety concern (MO1p11, MO2 p10).	Proportion of old forest in each site series surrogate (LU scale).
		<ul> <li>Where there is less than the old forest in a landscape unit required in subsection 1, to the extent practicable, recruit forest to meet the representation requirements within 250 years (MO1 p11, MO2 p10)</li> <li>To the extent practicable, include critical habitat in old forest retention areas for species at risk, ungulate winter range, regionally important wildlife, including: (a) mountain goats; (b) grizzly bears; (c) northern goshawks; (d) tailed frogs; and (e) marbled murrelets years (MO1 p11, MO2 p11)</li> </ul>	
1 No objectives for mid-se MO2	eral forest in MO1 or	Maintain in each landscape unit to the extent practicable: (a) less than 50% of each site series surrogate listed in Schedule 4 in mid-seral forest age classes (MO1p11); Maintain in each landscape unit, less than 50% of each site series surrogate listed in schedule 4 in mid-seral forest age classes, to the extent practicable (MO2 p10).	Proportion of mid-seral forest in each site series surrogate (LU scale).
		• Where there is more than 50% of any site series surrogate listed in Schedule 4 in mid-seral forest age classes in any	

S	Objective	Strategy	Implementation indicator
		landscape unit, then reduce the mid-seral forest age classes in that site series surrogate in that landscape unit to less than 50% within 150 years, to the extent practicable (MO1p11; MO2 p10).	
1	No objectives for early-seral forest in MO1 or MO2	Maintain in each landscape unit to the extent practicable: (b) less than 50% of each site series [surrogate] listed in Schedule 4 in early seral forest age classes (MO1 p11).	Proportion of early-seral forest in each site series
		• Where there is more than 50% of any site series surrogate listed in Schedule 4 in early seral forest age classes in any landscape unit, then reduce the early seral forest age classes in that site series surrogate in that landscape unit to less than 50% within 150 years, to the extent practicable (MO1 p11).	surrogate (LU scale).
2	Maintain representation of modal, rare and very rare [and] of common and very common old forest ecosystems in specified landscape units (KNT pF8; TP pB7; GFN pF7, HFN pB7).	Maintain greater than 30% of the natural proportion of old forest within each [common and very common] site series/BEC variant [within each landscape unit]; maintain greater than 70% of the natural proportion of old forest within each [modal, rare and very rare] site series/BEC variant [within each landscape unit] (KNT pF8; TP pB7; GFN pF7, HFN pB7); Classify the site series into five groupings (rare, uncommon, modal, common and very common) and establish a minimum representation target at the landscape level of (i) 70% of the natural occurrence of old seral for any site series surrogate that falls within the modal, uncommon or rare grouping; and, (ii) 30% of the natural occurrence of old seral for any site series surrogate that falls within the common or very common grouping (transitional management target; CCAIP p21). 126	Proportion of natural amount of old forest in each site series (LU scale or landscape scale).
		Classify the site series or site series surrogates 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 2,018 ha retained; (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 (NCAIP p47)	
		• The standard for assessing site series is the best available of "Predictive Ecosystem Mapping" (PEM), Terrestrial Ecosystem Mapping" (TEM) or forest cover/"Biogeoclimatic Ecosystem Classification" (BEC) surrogate, whichever is available for the area of interest (i.e. the landscape unit or watershed) (KNT pF8; TP pB7; GFN pF7, HFN pB7).	
		<ul> <li>Operational requirements for roads and other infrastructure are not constrained by the 30% and 70% objectives (KNT pF8 HFN pB7).</li> <li>Targets for old forestmay be met throughscheduling[harvesting or][identifying] stands outside theTHLB[or] retention within harvested stands[or] zoning OGMAs (KNT pF8; TP pB7; GFN pF7, HFN pB7).</li> <li>Design OGMAs to address old seral objectivesand to protect critical habitat for species at risk and regionally important wildlife (KNT pF8; TP pB7; GFN pF7, HFN pB7). As landscape level planning proceeds representation targets will be achieved/deployed in a manner that enhances conservation of ecological values including but not limited to representation of ecosystems that are rare in the landscape; high value wildlife habitat including wildlife trees; high value fish habitat; riparian ecosystems; karst; connectivity for focal, blue and red wildlife species; unstable slopes, OGMAs; and other ecological values (NCAIP p47, CCAIP p22).</li> </ul>	
		• In some cases achieving these representation targets will require recruitment of young forest where old does not exist (CCAIP p22, NCAIP p47). These recruitment areas will be identified in reserves in keeping with the spatial deployment criteria outlined above (CCAIP p 22).	
2	[Limit] amount of mid seral in each ecosystem surrogate within specified landscape units	Maintain less than 50% mid seral in each site series/BEC variant by landscape unit (KNT pF8; TP pB7; GFN pF7, HFN pB8)	Proportion of mid-seral forest in each site series (LU scale).
	(KNT pF8; TP pB7; GFN pB7, HFN pB8).	Maintain < 50% of each ecosystem type in mid seral (NCAIP p47, CCAIP p23).	Proportion of mid-seral forest in each ecosystem type
		• In developed landscapes and watersheds with > 50% mid seral in the timber harvesting land base, harvest or reserve	in each ecosystem type

S Objective	Strategy	Implementation indicator
	managed stands to prevent excessive mid seral representation (NCAIP p47, CCAIP p23).	(unspecified scale).
2 Manage the amount of early seral in each ecosystem surrogate in each landscape unit in a manner that is generally consistent with natural disturbance (TP pB7; GFN pF7).	Maintain less than 50% of each site series in early seral by landscape unit (TP pB7; GFN pF7).	Proportion of early-seral forest in each site series (LU scale).
3 Maintain the natural diversity of species, ecosystems, seral stages (EBMH p32); maintain the ecological patterns, processes	Maintain 70% of the natural old seral distribution in each ecosystem type (territory scale; EBMH p32); Maintain 50% to 70% of the natural old seral distribution in each ecosystem type (landscape scale; EBMH p41); Maintain 70% to 30% of the natural old seral distribution in each ecosystem type (watershed scale; EBMH p41).	Proportion of natural amount of old seral in each ecosystem type (multiple scales).
and structural attributes responsible for that biological diversity and for ecosystem resilience (CC p33)	• Establish protected areas and reserves that represent the biological diversity of the region (EBMH p32); secure representation of all ecosystem types in protected areas (EBMH p32); maintain site series/old seral representation in watershed reserves and harvested stands (EBMH p41); designate Old Growth Management Areas representative of forested	Proportion of mid-seral in each ecosystem type (multiple scales).
Design harvest to approximate natural disturbance pattern and distribution (EBMH p41); maintain a frequency distribution of seral stages over time that is generally consistent with the natural disturbance regime (NC p91)	<ul> <li>ecosystems (CC p33).</li> <li>Consider the incorporation of previously established Forest Ecosystem Networks (FENs) in the delineation and designation of ecosystem representation reserves (CC p33).</li> <li>Harvest pattern is informed by natural disturbance guidelines (EBMH p41).</li> <li>Assess natural disturbance regimes and characteristics by ecoregion (EBMH p32); Assess natural forest age class distribution by BEC variant and site series; assess current distribution (EBMH p32).</li> </ul>	
maintain representation of old forest ecosystems by site series and/or site series surrogate by BEC variant (NC p90); maintain sufficient representation of all forested ecosystems (site series and/or site	<ul> <li>Conduct representation/gap analysis to identify common and underrepresented ecosystems/habitats (EBMH p32); Assess site series/age class distribution in relation to management targets (EBMH p41); Assess site series representation (EBMH p52); Estimate area available for harvest in each site series (EBMH p41); where necessary estimate old forest restoration requirements (EBMH p41).</li> <li>Conduct ecological classification inventory (site series; EBMH p52).</li> </ul>	
series surrogate <sup>127</sup> ) in the old growth condition such that risk of losing any one remains low (NC p89).	<ul> <li>Maintain less than 50% of each ecosystem type in mid-seral (landscape scale; EBMH p41).</li> <li>In developed landscapes [and] watersheds with &gt; 50% mid seral in the timber harvesting landbase, harvest or reserve managed stands to prevent excessive mid-seral (landscape and watershed scale; EBMH p41; CCAIP p23).</li> </ul>	
Maintain natural species assemblages (NC p95).	• Promote the recovery of structural and functional characteristics of old forest in each site series and/or site series surrogate within managed landscapes(NC p90)	

## Rare ecosystems<sup>128</sup>

Protect known red- and blue-listed and regionally rare ecosystems (EBMH).

Implementation indicator: % of known, red-listed plant communities<sup>129</sup> protected.

- MO Target: 95-100% of each occurrence; < 100% allowed for access, infrastructure and safety.
- G2G Target: 95% (risk managed target) to 100% (default/low risk target) of each occurrence; < 100% allowed for access and safety (plant communities to be identified by surrogates for the interim).
- CCAIP/NCAIP Target: 100%
- EBMH Target: 100%, unless prescription can demonstrate maintenance of rare values.

Implementation indicator: % of known, blue-listed plant communities <sup>130</sup> protected.

S	Objective	Strategy	Implementation indicator		
	<ul> <li>MO1 Target: minimum 70% of each type (LU scale).</li> <li>MO2 Target: minimum 70% of each occurrence.</li> <li>G2G Target: minimum 70% at the landscape scale (communities to be identified by surrogates for the interim).</li> <li>NCAIP Target: minimum 70% up to a maximum of 102 ha across the plan area.</li> <li>EBMH Target: minimum 70%.</li> </ul>				
Im	plementation indicator: % of known, non-listed, na	aturally-rare ecosystems <sup>131</sup> protected.			
•	MO/G2G Target: no target. NCAIP Target: 100% EBMH Target: 100%				
As	sessment or plan: Summary of known occurrences	s of rare ecosystems (EBMH); Improved inventories of rare ecosystems (EBMH).			
1	No objectives for rare ecosystems in MO1 or MO2.	Protect each occurrence of a red-listed plant community [set out in Schedule 5 in MO1] during a primary forest activity (MO1 p11, MO2 p11). Despite subsection (1), up to 5% of each occurrence of a red-listed plant community may be disturbed if there is no practicable alternative for road access, other infrastructure or to address a safety concern (MO2 p11, MO1 p12).	Proportion of each occurrence of a red-listed plant community protected.		
		Protect at least 70% of each occurrence of a blue-listed plant community set out in Schedule 6 during a primary forest activity or protect at least 70% of each type of blue-listed plant community that occurs in a landscape unit (MO1 p12).	Proportion of each type of a blue-listed plant community protected (LU).		
		Protect at least 70% of each occurrence of a blue-listed plant community [see Schedule 5] during a primary forest activity (MO2 p11).	Proportion of each occurrence of a blue-listed plant community protected.		
2	Maintain the structural and functional integrity of red-listed plant communities (TP pB8, KNT pF9, GFN pF8, HFN pB8)	[0% (default/low risk target) to 5% (risk managed target)] reduction in individual red listed plant communities, for the interim identified by the surrogates, by BEC variant and analysis units (landscape scale) (TP pB8 KNT pF9, GFN pF8, HFN pB8); [BEC variant and analysis unit not specified in KNT].	Proportion of red-listed plant communities protected (landscape scale).		
	Maintain the structural and functional integrity	• Default/low risk target should only be exceeded if required for access or safety (TP pB8, KNT pF9, GFN pB8, HFN pB8).	Proportion of blue-listed		
	of selected blue-listed plant communities (TP pB8, KNT pF9, GFN pF8, HFN pB8)	Reserve 100% of CDC red listed systems (CCAIP p23); reserve 100% of CDC red listed plant communities (NCAIP p47)	plant communities protected (landscape scale).		
		• Red-listed and other naturally rare ecosystems that have been harvested should be reserved from further harvest or development; naturally rare ecosystems are to be identified in implementation based on recommendations from the EBM Science Team (NCAIP p47).	Proportion of non-listed naturally-rare ecosystems protected.		
		Maximum 30% reduction of the blue-listed plant communities identified by the surrogates, by BEC variant and analysis units (landscape scale) (TP pB8, KNT pF9, GFN pF8, HFN pB8); [BEC variant and analysis unit not specified in KNT].			
		• The standard for assessing/measuring site series is the best of PEM, TEM or BEC/forest cover, whichever is available (TP pB8, KNT pF9, GFN pB8, HFN pB8).			
		• Existence of red [and] blue listed plant communities on the ground should be confirmed prior to operations commencing (TP pB8, KNT pF9, GFN pB8, HFN pB8).			
		Reserve 70% of known occurring blue-listed ecosystems at the landscape level to a maximum of 102 ha reserved across the plan area (NCAIP p47).			

S	Objective	Strategy	Implementation indicator
		Reserve 100% of other non-listed naturally rare ecosystems (NCAIP p47)	
3	Protect known redlisted ecosystems (EBMH p32); Maintain rare forest stand types over rotations (CC p33); maintain the structural and functional integrity of rare ecosystems including redlisted by the BC Conservation Data Centre (NC p92).  Protect known blue-listed ecosystems (EBMH p32); Maintain rare forest stand types over rotations (CC p33); maintain the structural and functional integrity of rare ecosystems including blue-listed by the BC Conservation Data Centre (NC p92).  Protect known regionally rare ecosystems (EBMH p32); Maintain rare forest stand types over rotations (CC p33); maintain the structural and functional integrity of rare ecosystems (NC p92).	Protect or reserve 100% of known red-listed plant communities and other non-listed naturally rare ecosystems (SEMH p 32); Reserve 100% of known and potentially occurring red-listed and other non-listed naturally rare ecosystems (landscape and watershed scale; EBMH p 42); Reserve 100% of red-listed plant communities unless site assessments and prescriptions demonstrate maintenance of the rare values (site scale; EBMH p52).  [Implementation indicator (no target) is] Spatial extent (ha) of red-listed plant communities [with BaSs-Devils Club type treated separately](NC p92).  Protect or reserve 70% of known occurring blue-listed plant communities (territory scale; EBMH p32); Reserve 70% of known occurring blue-listed ecosystems (landscape and watershed scale; EBMH p42).  [Implementation indicator (no target) is] Spatial extent (ha) of individual blue-listed plant communities (NC p92).  Reserve 100% of non-listed rare plant communities unless site assessments and prescriptions demonstrate maintenance of the rare values (site scale; EBMH p52).  • Establish protected areas and reserves that represent the biological diversity of the region (EBMH p32); Protect or reserve naturally occurring, regionally rare ecological features (EBMH p32); Design reserves to maintain representation of ecosystems that are rare in the landscape (landscape and watershed scale; EBMH p42); Allocate retention to maintain representation of blue-listed and naturally rare plant communities (site scale; EBMH p52)assess potential development for rare ecosystem types, and exclude these ecosystems (NC p92).  • Recommend a no-development windfirm buffer adjacent to each red- or blue-listed plant community (NC p92)  • Consider other mitigative measures to avoid negative impacts such as partial harvesting, and location of old growth management areas (NC p92).  • Refine inventory of red and blue-listed and regionally rare ecosystems (GIS, air photos, air reconnaissance; EBMH p42); Field survey red- and blue-listed plant c	Proportion of red-listed plant communities protected.  Proportion of blue-listed plant communities protected.  Proportion of each blue-listed plant community protected.  Proportion of each non-listed rare plant community protected.

### Habitat for rare and focal species 133

Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species (EBMH).

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH) and of Maintain healthy, well-distributed populations/subpopulations of focal species (EBMH).

See also Objectives related to specific rare and focal species (p.110) and Objectives related to grizzly bears (p.116).

Implementation indicator: % of critical habitat<sup>134</sup> of red- and blue-listed and focal wildlife species protected

MO/G2G Target: no target.EBMH Target: implied 100%

Implementation indicator: % of key wildlife migration/movement corridors protected.

• MO/G2G Target: no target

• EBMH/CC Target: 100% of key corridors

• LRMP (NC) Target: no target

S	Objective	Strategy	Implementation indicator
	sessment or plan: Habitat supply objectives for ear BMH); Inventory of migration and movement corr	ch red- and blue-listed and focal species (EBMH); Critical habitat status report (CC); Refined inventories of red- and blue-listed and ridors (EBMH).	d focal species and their habitat
1	No objectives for rare and focal species in MO1 or MO2.	• To the extent practicable, include critical habitat in old forest retention areas for species at risk, ungulate winter range, regionally important wildlife, including: (a) mountain goats; (b) grizzly bears; (c) northern goshawks; (d) tailed frogs; and, (e) marbled murrelets (MO2 p11, MO1 p11).	
3	Maintain the natural diversity of species (EBMH p32); maintain abundance and diversity of organisms at all levels (CC p33); manage forest, land and resource developments to sustain a diversity of raptor, waterfowl, furbearer and bat species (CC p40)  Protect known red- and blue-listed/regionally rare species and their habitats (EBMH p 32); Maintain healthy, well-distributed populations/subpopulations of focal species (EBMH p32); Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species (EBMH p42).	Protect, and where needed restore, critical habitats for red- and blue- listed and focal wildlife species (including corridors; territory scale; EBMH p32); Protect critical habitat (landscape and watershed scale, EBMH p42); protect and where needed restore, critical habitats for red/blue listed, focal and other important bird and wildlife species (CC p38)  • Improve knowledge and understanding of terrestrial animal and plant species and habitats utilizing TEK (CC p34); First Nations will be consulted in the prioritisation, design and implementation of biodiversity studies (CC p34); ensure consultation with First Nations and local communities and consider traditional and local knowledge (CC p38, p39); utilize tradition ecological knowledge to improve knowledge and understanding of species and habitats (CC p40).  • Establish habitat supply objectives for red- and blue-listed and focal species based on assessment of habitat capability, habitat suitability, carrying capacity and population estimates (territory scale; EBMH p32); Use current inventory to assess habitat capability/suitability for red and blue-listed and focal species (EBMH p32)  • Every two to three yearsdetermine the status of critical habitat for wildlife, complete an analysis of how EBM is meeting critical habitat objectives (CC p40)  • Refine inventory of red and blue-listed wildlife species and their habitats (GIS, air photos, air reconnaissance; EBMH p42); Inventory special ecological elements (e.g., bear dens, small wetlands; EBMH p52); Field survey wildlife habitat features (EBMH p52); improve and update inventories for wildlife species, particularly critical habitats for red/blue listed, focal and other important species (CC p40)  • collaborate with First Nations and local communities when co-ordinating and conducting new habitat inventories (CC p40).  [Develop] and [implement] recovery plansfor known red/blue listed/regionally rare species and their habitats in consultation (CC p38)	% critical habitat protected for red-listed, blue-listed and focal wildlife species. % of degraded critical habitat restored Proportion of known red/blue-listed/regionally rare species with recovery plans.
3	Maintain stand-level habitat structures for red- and blue-listed and focal species (EBMH p52); Protect seasonally critical microsites and habitat elements (e.g., bear dens, raptor nests; EBMH p52);	Maintain stand structure to provide habitat for red- and blue-listed focal wildlife species (site scale; EBMH p52); protect seasonally critical microsites and habitat elements (e.g., bear dens, raptor nests; EBMH p52); designate and protect known critical wildlife habitat features vital to a variety of species (NC p95); designate and protect known critical wildlife habitat features(CC p39)  Identify known critical wildlife habitat features at the landscape or stand level prior to resource development and incorporate their management and protection (NC p95, CC p39); if a previously unidentified critical wildlife habitat feature is discovered during development, incorporate their management and protection (NC p95, CC p39).  Minimize road induced displacement and mortality risk within or adjacent to critical habitats (NC p95, CC p39).  Monitor herbicide applications in areas containing critical wildlife habitat features(NC p95 CCp39).	% critical habitat (including microsites and habitat elements) protected for redlisted, blue-listed and focal wildlife species at the stand scale.
3	maintain connectivity for red- and blue- listed and focal wildlife species (EBMH p42). Identify and reserve key wildlife migration/movement corridors (EBMH p42, CC p34, CC p91)	Identify and protect functional levels of habitat, travel migration corridors and breeding grounds (CC p39; NC p91); [Indicator is] number of identified and reserved key wildlife migration/movement corridors (NC p91).  • Ensure ongoing inventory and monitoring of wildlife migration corridors (NC p91, CC p39).	Proportion of key wildlife migration / movement corridors protected.

S	Objective	Strategy	Implementation indicator
	Maintain mature and old forest linkages within and between hydroriparian and upland areas at the watershed level (NC p91)		

#### Stand structure

Retain forest structure and diversity at the stand level (G2G)

See also Ecosystem representation (p.100), Rare ecosystems (p.102), Habitat for rare and focal species (p.104) and Objectives related to hydroriparian ecological integrity (p.84) and Objectives related to First Nations cultural and traditional resources (p.58).

Indicator: % of cutblock retained as standing trees, within and adjacent to clearcuts or within partial cuts.

- MO Target: ≥ 15% (area or basal area not specified).
- G2G Target: ≥ 15% of basal area.
- EBMH Target: 15-70%.

Indicator: % of retained standing trees that fall within cutblock boundaries in cutblocks larger than 15ha.

- MO/G2G Target: 50% (presumably at least 50%).
- EBMH/LRMP Target: no target.

Assessment or plan: Inventory of special ecological elements (EBMH); Site series classification (EBMH).

	sessment of plan. Inventory of special ecological e		
1	Maintain forest structure and diversity at the stand level (MO1 p12, MO2 p11).	in cutblocks where a clearcut silviculture system is used, establish stand retention $^{135} \ge 15\%$ of the cutblock (MO1 p12, MO2 p11).	Stand retention within or contiguous to each clearcut.
		in cutblocks $\geq$ 15 ha, where a clearcut silviculture system is used, distribute 50% of the stand retention within the cutblock (MO1 p12, MO2 p11).	Proportion of stand retention that falls within cutblock boundaries in clearcuts ≥15
		• To the extent practicable include the following within stand retention: habitat elements for species at risk and regionally important wildlife, representation of red- and blue-listed ecosystems, riparian forest,cedar, wildlife trees and coarse woody debris (MO1 p12, MO2 p11).	boundaries in clearcuts ≥15 ha
2	Retain forest structure and diversity at the stand level (TP pB8, KNT pF9, GFN pF8, HFN	Minimum of 15%of basal area retained as Stand Retention within or contiguous to each Cutblock (TP pB8, KNT pF9, GFN pF8, HFN pB9); 15% minimum retention within cutblocks (NC p47, CC p23).	Stand retention within or contiguous to each cutblock.
	pB9).	In Cutblocks > 15ha where a clearcut harvest system is used, 50% of the aggregated Stand Retention must be dispersed within the cutblock (TP pB8, KNT pF9, GFN pF8, HFN pB9).	Proportion of stand retention that falls within cutblock
		• "Stand Retention" means an area occupied by trees; stand retention can be dispersed or aggregated (TP pB8, KNT pF9, GFN pF8, HFN pB9).	boundaries in clearcuts > 15 ha
		• Aggregated Stand Retention that retains > 70% basal area and is greater than one hectare [and] partial cut harvesting that retains > 60% basal area dispersed evenly throughout the stand contributes to landscape level old seral objectives (TP pB8, KNT pF9, GFN pF8, HFN pB9).	
		• Stand Retention, while minimizing impacts to harvestable volumes, should focus oncultural heritage features, habitat elements for species at risk and regionally important wildlife, representation of [rare] ecosystems, riparian forest[and]cedar (TP pB8, KNT pF9, GFN pF8, HFN pB9).	

S	Objective	Strategy	Implementation indicator
3	Maintain biological legacies (e.g., wildlife trees, snags, CWD, understory vegetation) (EBMH p52)  Contribute to watershed targets for ecological representation (EBMH p52)  Maintain stand-level habitat structures for redand blue-listed and focal species (EBMH p52); Protect seasonally critical microsites and habitat elements (e.g., bear dens, raptor nests; EBMH p52)  Distribute stand level retention as needed to meet hydroriparian targets (EBMH p52); protect sensitive hydroriparian ecosystems (EBMH p52).	<ul> <li>Maintain 15-70% retention depending on watershed risk targets and site objectives (EBMH p52).</li> <li>Distribute reserves/stand-level retention to maintain representation of rare and at risk ecosystems (EBMH p52); allocate retention to maintain representation of blue-listed and naturally rare plant communities (EBMH p52).</li> <li>Maintain stand structure to provide habitat for red- and blue-listed and focal wildlife species (EBMH p52).</li> <li>Maintain biological legacies (EBMH p52).</li> <li>Harvest block shape and retention is informed by local natural disturbance characteristics (EBMH p52).</li> <li>Reserve windfirm buffers around small steep streams and gullies with high susceptibility for debris flow (EBMH p52); reserve windfirm buffers next to coastal zone (EBMH p52); modify buffers to improve windfirmness as needed (EBMH p52)</li> <li>Inventory special ecological elements (e.g., bear dens, small wetlands) (EBMH p52).</li> <li>Conduct ecological classification inventory (site series) (EBMH p52).</li> <li>Assess site series representation (EBMH p52).</li> </ul>	Stand retention at site scale.
4	retain sufficient structural attributes within harvested areas to maintain substantial habitat quality and species diversity through a rotation (NC p93).	<ul> <li>Minimum of 15% old trees (live and dead) retained in each cutblock opening (NC p93)</li> <li>Leave large pieces of coarse woody debris on ground, where these exist prior to harvesting (NC p93); [indicator is] amount of coarse woody debris retained in harvested areas (NC p93); wildlife tree retention is required to recruit coarse woody debris (NC p93).</li> <li>Retention[should be] representative of the harvested area to the level of site series (NC p93).</li> <li>Retain key habitat elements such as bear dens, bat hibernacula, and bird nesting cavities (NC p93).</li> <li>Retain structural elements such as large standing live and dead trees (&gt;30cm dbh &amp; &gt; 5m high), horizontal and vertical heterogeneity, and a characteristic species mix for the stand [however]; redcedar and yellow cedar are preferred trees for retention (NC p93); leave coarse woody debris (cwd) with a range of piece sizes, including large pieces, on the ground where pre-harvest stands are characterized by cwd (CC p33); retain downed woody debris (CC p33).</li> <li>[Indicator is] size of groupings of stand level retention [required] to provide windfirmness, habitat needs and interior conditions, within cutblocks &gt; 40 ha (NC p94).</li> </ul>	Stand retention in cutblocks.

Or Maintain site productivity and a natural species mix (EBMH).

See also Objectives for forestry and timber (Forest productivity section, p.148).

Implementation indicator: % of natural occurrence of each tree species in managed early seral forest.

- MO/G2G Target: no target.
- EBMH Target: existing silvicultural requirements.
- LRMP (CC) Target: within range of natural variability for deciduous trees.

Maintain site productivity and a natural
species mix (EBMH p54).

Maintain the proportion and distribution of deciduous broadleaf components of stands within the range observed in unmanaged stands within the landscape unit (CC p 33).

Proportion and distribution of deciduous broadleaf

S	Objective	Strategy	Implementation indicator
		<ul> <li>Maintain a significant component of each landscape unit in plant species composition similar to that developed through natural succession (CC p33).</li> <li>Meet silvicultural requirements for regeneration forest health and growth (EBMH p54).</li> </ul>	components of stands. Plant species composition.
		- Meet surveuturut requirements jor regeneration jorest neath and growth (EDIM1 p54).	

#### Islands

Allow the processes of colonization, dispersal, reproduction and survival on islands to continue within their range of natural variability.

This is a sub-objective of Maintain the natural diversity of species ecosystems and seral stages (EBMH).

No strategies<sup>136</sup>.

allow the ecosystem processes of
colonization, dispersal, reproduction and
survival on islands to continue within their
range of natural variability (NC p94).

Strategies not completed during NC LRMP.

#### **Exotic species**

Prevent the introduction of exotic species.

This is a sub-objective of Maintain the natural diversity of species ecosystems and seral stages (EBMH).

No strategies.

Assessment or plan: Management standards for exotic species (CC).

3 Avoid the introduction of terrestrial exotic species (CC p34): ... prevent the introduction of exotics (NC p 95).

Strategies not completed during NC LRMP.

- [Indicator is] number and extent of exotic species (NC p95).
- o Standards, controls or guidelines will be established regarding the management of exotic species (CC p34); practices such as grass seeding which have been shown to be non-threatening can be maintained (CC p34).

#### Soils and terrain

Conserve soil productivity and protect unstable slopes (EBMH).

See also Objectives for hydroriparian ecological integrity (Water quality and stream morphology section, p.85) and Objectives for forestry and timber (Forest productivity section, p.148).

Implementation indicator: % Class IV and V terrain with moderate to high risk of slope failure reserved.

- MO/G2G Target: no target.
- EBMH Target: 100%

Implementation indicator: % of cutblock area with detrimental site disturbance

- MO/G2G Target: no target.
- EBMH Target: ≤ 5%

Implementation indicator: % of cutblock area covered with permanent access structures

S	Objective	Strategy	Implementation indicator		
	MO/G2G Target: no target. EBMH Target: ≤ 7%				
As	sessment or plan: Summaries of geological data an	nd terrain maps (EBMH); new terrain maps and inventories of class IV and V terrain (EBMH).			
3	Protect unstable slopes (EBMH p33, p42, p53); minimize potential for erosion and sedimentation (NC p94).	Reserve Class V terrain (EBMH p33); reserve areas with class V slope stability (watershed scale, EBMH p42).  Conduct terrain stability assessments in Class IV and V terrain; reserve areas with moderate to high risk of slope failure (site scale; EBMH p53);  Collate available bedrock geology and surface geology data [and]terrain stability and terrain mapping; perform terrain mapping where needed (EBMH p33, p42)  Identify and map Class IV and V terrain (EBMH p42); survey and map terrain and assess terrain stability where needed (EBM p53)	% of class V terrain reserved % area with moderate to high risk of slope failure reserved		
3	Conserve soil productivity (EBMH p33, p42); minimize adverse soil disturbance and loss of productive sites (EBMH p53); minimize potential for erosion and sedimentation (NC p94).	Detrimental site disturbance, other than access structures, does not exceed 5% of cutblock area (EBMH p53)  Permanent access structures do not exceed 7% of cutblock area over average (site scale; EBMH p53)  Identify and map environmentally sensitive sites, poor growing(EBMH p42).  seed areas with potential for soil erosion with native plant species (site scale; EBMH p53)  employ harvesting systems and operational practices that minimize loss of soil productivity (site scale; EBMH p53)	% detrimental site disturbance % permanent access structures		
De	egraded sites.		1		
	claim environmentally-degraded sites.				
Th	is is a sub-objective of Conserve soil productivity	and protect unstable slopes (EBMH).			
	See also Objectives related to forestry and timber (Forest productivity section, p.148), Objectives related to mineral and energy resources (Ecological integrity-reclamation of mine sites section, p.154) and Objectives related to tourism and non-commercial recreation (Integrity of natural and cultural features section, p.161).				
No	strategies				
3	Examine past industrial development sites and determine if there are unacceptable environmental impacts and prioritize for reclamation (NC p179).	No strategies.  [Indicator is] number of industrial sites prioritised for reclamation (NC p179).			

# Objectives related to specific rare and focal species<sup>137</sup>

S Objectives	Strategy	Implementation indicator		
See also Objectives related to terrestrial ecologica	l integrity (Habitat for rare and focal species section, p.104) and Objectives related to grizzly bears (p.116).	1		
Tailed frog				
Protect critical habitat for tailed frogs.				
This is a sub-objective of Maintain adequate and suf	ficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species (EBMH).			
No strategies				
1 No objectives	• To the extent practicable, include critical habitat in old forest retention areas for tailed frogs (MO2 p11, MO1 p11).			
3 Protect critical habitat for tailed frogs (CC p41)	Strategies not completed during CC			
Rhinoceros auklet				
Protect rhinoceros auklet habitat on Lucy Islands Pro	otection Area.			
This is a sub-objective of Maintain adequate and suf	ficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species (EBMH).			
Implementation indicator: % impact to rhinoceros au	ıklet habitat			
MO: no target				
<ul><li>G2G Target (MA): 0% additional impact</li><li>EBMH/LRMP Target: no target</li></ul>				
2 Protect seabird habitat on Lucy Islands	No increased impact to rhinoceros auklet habitat (MA p8)	% habitat impacted		
Protection Area (MA p8)	• identify auklet habitat in management plans	-		
	any opportunity for facilities away from auklet habitat to be confirmed in a management plan			
Marbled murrelet		'		
Protect marbled murrelet nesting habitat.				
This is a sub-objective of Maintain adequate and suf	This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species (EBMH).			
No strategies.				
1 No objectives for marbled murrelet in MOs	No strategies.			
	• To the extent practicable, include critical habitat in old forest retention areas for marbled murrelets (MO2 p11, MO1 p11).			
3 Maintain the quantity and quality of marbled murrelet nesting habitat across the North	Strategies not completed during CC.			

S	Objectives	Strategy	Implementation indicator
	Coast plan area (NC p121); maintain the quantity and quality of optimal nesting habitat in core areas (NC p 121); protect critical		
	habitat for marbled murrelet (CC p40)		

## Northern goshawk

Protect critical nesting and foraging habitat for northern goshawk.

This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species (EBMH).

No strategies.

1	No objectives	No strategies.	
		• To the extent practicable, include critical habitat in old forest retention areas for northern goshawks (MO2 p11, MO1 p11).	
3	Protect critical nestinghabitat for northern goshawk (CC p 40); maintain all known goshawk nest areas and post-fledging areas with sufficient mature and old growth forest to allow continued occupancy and successful reproduction (NC p135);	Strategies not completed during CC or NC	
3	Protect criticalforaging habitat for northern goshawk (CC p 40); maintain sufficient foraging habitat adjacent to nest areas to allow continued occupation of the breeding territory (NC p135)	Strategies not completed during CC or NC	
3	Undertake research and inventory(NC p136)	o implement an inventory program led by a qualified biologist to locate new nests, assess diet, and monitor post-fledging area use (NC p136)	

#### Black (Kermode) bear—forage

Maintain landscape-, watershed- and stand-level forage in Gribble/Princess Royal Kermode Management Area.

This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species (EBMH).

Implementation indicator: maximum % early and mid seral in management area

- MO Target: no target
- G2G Target (GT): 30% early seral by site series; 40% mid seral by site series
- EBMH/LRMP Target: no target

Implementation indicator: average % crown closure in each managed stand treatment unit

S	Objectives	Strategy	Implementation indicator
•	MO Target: no target G2G Target (GT): ≤70% EBMH/LRMP Target: no target		
2	Maintain landscape and watershed level forage supply in Gribble/Princess Royal Kermode Management Area (GT p21)	Manage watersheds to a maximum of 30% early seral by site series (GT p21)  Manage watersheds to a maximum of 40% mid seral by site series (GT p21)  interim early and mid seral age class based on FPC Biodiversity Guidebook  watershed planning units will be developed through further detailed strategic planning	% early seral by site series % mid seral by site series
3	Maintain adequate foraging habitat for black bears (NC p84)	No specific strategy (strategies under biodiversity and grizzly bears considered sufficient; NC p84)	
2	Maintain adequate forage within managed forest stands in Gribble/Princess Royal Kermode Management Area (GT p21)	<ul> <li>[Maintain] &lt; 70% average crown closure from "free to grow" to harvest age, measured over the treatment unit (GT p21)</li> <li>reduce stocking targets to allow cluster/gap management</li> <li>no broadcast vegetation management (except stands with high brush hazard)</li> <li>stand tending to improve crop quality in clusters and keep gaps conifer free</li> </ul>	% crown closure

# Black (Kermode) bear—critical habitat

Maintain critical habitat in Gribble/Princess Royal Kermode Management Area.

This is a sub-objective of Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and blue-listed and focal species (EBMH).

Implementation indicator: % critical habitat altered

- MO Target: no target
- G2G Target (GT): default target: 0% alteration; risk-managed target: site specific planning
- EBMH/LRMP Target: no target

2	Maintain critical habitat in Gribble/Princess	Default target: no alteration of critical habitat (MA p3)	% critical habitat altered
	Royal Kermode Management Area (GT p21)	Risk-managed target: critical habitat developed through site specific planning	% known dens retained
		• critical habitat includes beaches/beach margins, estuaries, rich non-forested fens, forested and non-forested bog edges, herb-dominated patches on avalanche chutes with adjacent forest, herb-dominated subalpine parkland meadows, skunk cabbage swamps, floodplain ecosystems and areas where bears fish for salmon	% coarse woody debris retained
		retain known dens (including stumps used as dens in second growth) and large diameter and height trees, particularly in cedar stands, within windfirm patches	
		den cavities and adjacent stands are also considered critical	
		Retain existing coarse woody debris, including large diameter downed wood	
	cedar stands, within  • den cavities and a  Retain existing coar	• > 5m log lengths, decay class 1-2, >1m diameter, Cw preferred	
3	Maintain critical denning habitat for black bears (NC p84); maintain the integrity of	No specific strategy (strategies under biodiversity, riparian ecosystems and grizzly bears considered sufficient; NC p84)	

S	Objectives	Strategy	Implementation indicator
	critical habitats for black bears (NC p85)		
3	Protect critical habitat for black bears in the Tolmie and other landscape units where the Kermode phenotype is commonly expressed (CC p41)	Strategies not completed during CC	

### Black (Kermode) bear—displacement

Minimise displacement and habituation of bears in Gribble/Princess Royal Kermode Management Area.

This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal species (EBMH).

Implementation indicator: % resource development late August – October in Kermode Management Area

- MO Target: no target
- G2G Target (GT): 0%
- EBMH/LRMP Target: no target

Implementation indicator: % bear viewing outside identified areas in Kermode Management Area<sup>138</sup>

- MO Target: no target
- G2G Target (GT): 0%
- EBMH/LRMP Target: no target

2	Minimize displacement and habituation of bears due to resource development in Gribble/Princess Royal Kermode Management Area (GT p21)	No resource development activity near preferred forage areas late August – October (GT p21)  • No resource development activity in key salmon fishing areas	% resource development near preferred forage areas late August – October
2	Minimize displacement and habituation of bears due to commercial recreation activities in Gribble/Princess Royal Kermode Management Area (GT p21)	No random land-based viewing activity (GT p21)  No air or water-based bear viewing (GT p21)  • aircraft maintain a minimum distance of 750 m  • boats maintain a minimum distance of 100m  Limit bear viewing activity to three fixed locations (GT p21)  • preferred sites Riordan Creek, Kwaa Creek and Whalen Creek (estuaries and first km of stream corridor)  • management plans that specify access points and trails, numbers of viewers, times of day and week, etc. must be developed for each viewing site  • interim access guidelines: ≤ 10 viewers on site at any given time	distribution, timing and intensity of bear viewing activity
3	Minimize impacts to bears from water and air- based commercial and non-commercial wildlife viewing (NC p85); minimize impactsfrom land-basedviewing (NC p86)	No tenures for random land-based viewing (NC p86)  No air-based bear viewing (NC p85)  • aircraft should strive to stay > 500m from bears.  • inform pilots of flying practices that minimize disturbance of bears.	amount of air-based viewing

5	S Objectives	Strategy	Implementation indicator
		Fixed land-based bear viewing is permitted as per First Nations perspective on land-based bear viewing in their traditional territories (NC p86)	
		100% compliance with bear viewing guidelines by tenured bear viewing operations (NC p86)	
		<ul> <li>undertake regular monitoring and enforcement</li> <li>enforce closure of untenured land-based bear viewing</li> </ul>	

### Black (Kermode) bear—human-induced mortality

Minimise human-induced mortality in Gribble/Princess Royal Kermode Management Area.

This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal species (EBMH).

Implementation indicator: bear hunting mortality on Gribbell Island or within 1,000 m of Whalen Creek estuary

- MO Target: no target
- G2G Target (GT): 0 killed
- EBMH/LRMP Target: no target

Gribble/Prince Area (GT p21)	nn-induced mortality in ss Royal Kermode Management prevent bear mortality from numan interactions (NC p87)	No commercial or resident hunting on Gribbell Island or lands within 1,000 m of Whalen Creek estuary (GT p21)  •initiate programs to educate members of the publicre low impact food and garbage  • educate public regarding alternative to shooting to reduce bear-human conflicts	# bears killed
3 No objective		Maintain opportunities for recreational hunting and fishing within tenured sites for fixed land-based bear viewing (NC p 87)	

### Mountain goat

Protect critical habitat for mountain goats.

This is a sub-objective of Maintain healthy, well-distributed populations/subpopulations of focal species (EBMH).

No	strategies.		
1	No objectives for mountain goats in MOs.	No strategies.	% critical habitat protected
		• To the extent practicable, include critical habitat in old forest retention areas for mountain goats (MO2 p11, MO1 p11).	
3	Maintain functional and structural attributes of	Strategies not completed in NC	
	goat winter ranges (NC p 157)	See Appendix 8: Mountain Goat Winter Range Identification, Assessment and Planning Protocol (NC p157)	
3	Maintain habitat suitability of winter range by minimizing disturbance and mortality risk to mountain goats (NC p 157); maintain critical habitat for mountain goat (CCp41)	<ul> <li>Strategies not completed in NC.</li> <li>Land and Water BC and WALP to establish need for on-board GPS data loggers as a requirement for tenure (NC p157)</li> <li>Developers will inform contracted pilots of goat winter range to ensure compliance with the LRMP objectives and targets(NC p157).</li> <li>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 (NC p158).</li> </ul>	

S	Objectives	Strategy	Implementation indicator
3	Minimize road-induced displacement and mortality risk within or adjacent to ungulate winter range (NC p 158)	Strategies not completed in NC	
M	oose and blacktailed deer		
M	aintain healthy and viable populations.		
Th	is is a sub-objective of Maintain healthy, well-dist	ributed populations/subpopulations of focal species (EBMH).	
No	o strategies.		
3	Minimize the potential for moose and deer mortality in roaded areas in identified winter range (NC p161)	<ul> <li>Strategies not completed in NC.</li> <li>[Indicators include] incidence of vehicular collisions on all roads in winter range [and] from publicly accessible roads (NC p161).</li> <li>Restrict access to roaded areas in winter range within winter months (NC p161)</li> <li>Maintain visual cover between roads and winter range and travel corridors along riparian areas (NC p161)</li> <li>Minimize the right of-way (NC p161).</li> <li> physically gate or deactivate all access on completion of function deactivation should restrict all motorized ground access (NC p161).</li> <li> minimize speed, road density, and snow bank barriers; pough "run-away lanes" or large turn outs; increase signage and reduced speed zones in areas with high wintering densities (NC p161).</li> </ul>	
3	Maintain the quality of snow interception and browse production within identified winter range (NC p 161); maintain critical habitat for moose, black-tailed deer (CCp41)	<ul> <li>Strategies not completed during NC (management considerations give suggestions; NC p161); Strategies not completed in CC.</li> <li>Maintain a balance of snow interception and browse production in winter ranges;balance should be documented in operational planning documents (NC p161).</li> <li>Monitor herbicide application in areas containing critical wildlife habitat features. Target crop trees only (NC p161).</li> <li>Winter range management can include 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 (NC p161).</li> </ul>	

# Objectives related to grizzly bears 139

Objectives related to grizzi	y bears "	
S Objective	Strategy	Implementation indicator
See also Objectives related to terrestrial ecologi	cal integrity (Habitat for rare and focal species section, p.104).	-1
	•	
Grizzly bear—population conservat	ion	·
Maintain the diversity and abundance of grizzly be	ars.	
This is a sub-objective of Protect known red- and b	lue-listed/regionally rare species and their habitats (EBMH).	
Implementation indicator: % of at-risk GBPUs (i.e	, population estimates below targets) with active recovery strategies.	
<ul><li>MO/G2G/EBMH: no target.</li><li>LRMP (CC) Target: 100% (implied)</li></ul>		
Assessment or plan: population table listing target	sub-population sizes for each Grizzly Bear Population Unit (CC).	
3 maintain the diversity and abundance of Grizzly Bears in the LRMP area (NC p109; CC p42).	• [Implementation indicator is] legal mortality levels (i.e., Limited Entry Hunt and guide outfitter allocation) (NC p109).  In GBPUs where the population status does not meet the targets in the Population Table (e.g. Kwatna-Owikeno in 2003) implement recovery strategies to restore the population to target levels (CC p42).	Recovery strategies where population is below target.

- o Develop a population table, listing target sub-population sizes for each Grizzly Bear Population Unit (GBPU) in the plan area. The table should be developed using best available science by Central Coast communities, First Nations, MWLAP and sector representatives with knowledge of grizzly bears (CC p42).
- [Implementation indicator is] estimated density of bears in each GBPU subpopulation within the North Coast, based on inventory or estimates of habitat effectiveness<sup>140</sup> (NC p109). [no agreed targets, but see Table 15, NC p109]
- 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 the North Coast LRMP (NC p109).
- Ensure ongoing inventory and monitoring of population levels (CC p42); ... ongoing inventory and monitoring is essential (NC p109).

#### Grizzly bear—benchmark populations

Maintain benchmark populations of grizzly bears.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

Implementation indicator: # of (or area occupied by) "benchmark" populations protected from hunting.

- MO: no target.
- G2G (KNT) Target: one—the Ahnuhati GBMA
- EBMH: no target.
- LRMP (NC) Target: one—the Skeena-Nass GBMA.
- LRMP (CC) Target: two—the Khutze and Ahnuhati GBMAs.

Assessments and plans: management plans for the Khutze and Ahnuhati Grizzly Bear Management Areas.

S	Objective	Strategy	Implementation indicator
2	Maintain and manage benchmark populations of grizzly bears within the Ahnuhati Grizzly Bear Management Area (KNT pC1).	No hunting of grizzly bears within the GBMA; the Hunting regulations will be annotated to include the GBMA restrictions.  Constitutionally protected hunting is not affected by the GBMA (KNT pC1)  Designate the Ahnuhati (Benchmark) area as a Grizzly Bear Management Area (GBMA) for a period of 10 years (the	No hunting areas.
		<ul> <li>GBMA can be continued only if the Minister of Environment decides to renew) (KNT pC1).</li> <li>Manage the areas to sustain a benchmark (as of 2003), naturally regulated grizzly bear population representative of the Coast and Mountains Ecoprovince (KNT pC1).</li> </ul>	
		<ul> <li>The province to work with First Nations, communities and other stakeholders to develop and implement a management plan for the GBMA (KNT pC1).</li> <li>Ensure that activities such as Mining, Forestry and Tourism are permitted in the non-protection area of the GBMA,</li> </ul>	
		<ul> <li>consistent with EBM and CCLRMP direction, with no additional management constraints (KNT pC1).</li> <li>Land based grizzly bear viewing is permitted in GBMA consistent with CCLRMP direction, adaptive management and EBM (KNT pC1).</li> <li>Hunting of wildlife species other than grizzly bears is not restricted by the GBMA (KNT pC1).</li> </ul>	
3	Maintain benchmark populations of grizzly bears within the Skeena-Nass Grizzly Bear Management Area(NC p117)	No hunting of grizzly bears within the [Skeena-Nass] GBMA (NC p117).  No hunting of grizzly bears within the [Khutze and Ahnuhati] GBMAs; the Hunting regulations will be annotated to include the GBMA restrictions (CC p45).	No hunting areas.
	Maintain and manage benchmark populations of grizzly bears within the Khutze and Ahnuhati Grizzly Bear Management Areas (CC p45).	<ul> <li>Designate the Khutze (Benchmark) and Ahnuhati (core) areas as Grizzly Bear Management Areas (GBMAs) for a period of 10 years (the GBMAs can be continued only if the Minister of Water, Land and Air decides to renew) (CC p45).</li> <li>The province to work with First Nations, communities and other stakeholders to develop and implement a management plan for the GBMAs (CC p45).</li> </ul>	
		• Manage the areas to sustain a benchmark (as of 2003), naturally regulated grizzly bear population representative of the Coast and Mountains Ecoprovince (CC p45).	
		• Ensure that activities such as Mining, Forestry and Tourism are permitted in the non-protection area of the GBMAs, consistent with EBM and GMDs, with no additional management constraints (CC p45).	
		<ul> <li>Land based grizzly bear viewing is permitted in GBMAs consistent with GMDs, adaptive management and EBM (CC p45).</li> <li>Hunting of wildlife species other than grizzly bears is not restricted within the GBMAs (NC p117 CC p45); other than the existing restrictions in the Khutzeymateen Bear Sanctuary (NC p117).</li> </ul>	
		• In the case that a large number of grizzly bears become habituated an appropriate management response will be taken (CC p46).	

# Grizzly-bear—critical habitat

Protect critical grizzly bear habitat<sup>141</sup>.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

Implementation indicator: % of Class 1 habitat protected.

- MO1 Target: 90% of habitat identified in Schedule 2
- MO2:100% of habitat identified on Schedule 2, with exceptions for roads, infrastructure and safety.
- G2G (TP/GFN) Target for North Coast: 90% in the portion of the North Coast occupied by grizzly bears
   G2G (TP/GFN) Target for Central Coast: follow Identified Wildlife<sup>142</sup> Measures and use landscape and stand level reserves in the Central Coast.

S	Objective	Strategy	Implementation indicator
•		pe unit; risk-managed to be developed on a site specific basis.  d to be developed on a site specific basis if necessary for access or safety.	
Im	plementation indicator: % of Class 2 habitat prote	octed.	
•	G2G (TP/GFN) Target for Central Coast: follow G2G (KNT) Target: default of 40%, by landscap G2G (HFN) Target: default 50% for specified la EBMH/LRMP Target: no target.	the portion of the North Coast occupied by grizzly bears v Identified Wildlife Measures and use landscape and stand level reserves in the Central Coast. pe unit; risk-managed to be developed on a site specific basis. andscapes; risk-managed to be developed on a site specific basis if necessary for access or safety.	
As	sessment or plan: Ground-verified critical habitat		
1	No objectives for critical habitat in MO1 or MO2.	Retain 90% of the critical grizzly bear habitat identified in Schedule 2 (MO1 p12), [where] "critical grizzly bear habitat" means 100% of class one habitat and 50% of class two habitat (MO1 p2)  Protect sensitive grizzly bear habitat (MO2 p12), [where] "sensitive grizzly bear habitat" means the Class 1 habitat identified	Critical habitat. Sensitive habitat.
		<ul> <li>Sensitive grizzly bear habitat may be altered or harvested where alteration or removal is required for road access, other infrastructure, or to address a safety concern, and where there is no practicable alternative; before altering or harvesting sensitive grizzly bear habitat: (a) obtain from a registered professional biologist confirmation that the disturbance will not cause a material adverse impact to the sustainability of the sensitive grizzly bear habitat; (b) to the extent practicable, prepare and implement an adaptive management plan and monitor the ecological impacts of the proposed forest development; and (c) engage in information-sharing or consultation with the applicable First Nation, to consider the potential for adverse effects on any asserted or proven aboriginal rights or aboriginal title of the First Nation (MO2 p12).</li> </ul>	
2	Protect Grizzly bear Critical Habitat (TP pB9, GFN pF9); protect critical Grizzly habitat in identified Landscape Units (KNT pF10); protect Grizzly bear Critical Habitat in all landscape units where it appears by MOE	[In the] North Coastmaximum 10% alteration of Grizzly bear Critical Habitat (this objective applies to the specified portion of the North Coast that is occupied by Grizzly Bear); [in the] Central Coast protect Grizzly bear Critical Habitat by application of Identified Wildlife Measures and through application of landscape and stand level reserve design; "Critical Habitat" is defined as 100% of Class 1 habitat and 50% of Class 2 habitat (TP pB9, GFN pF9).	Critical habitat (100% of Class 1 and 50% of Class 2). Class 1 habitat. Class 2 habitat.
	(HFN pB9) maintain the quantity and quality of grizzly bear habitat [in] Sommerville (MA pC1).	Default maximum 20% alteration on average of Class 1 <sup>143</sup> habitat by landscape unit; risk managed [target to be] developed on a site specific basis (KNT pF10)  Default 0% alteration of Class 1 habitat [and additionally] for the specified landscapes (the Ahta, Kakwaikon and Anhuhat-Kwalate that are within the Grizzly Bear Management Area), [maximum] 50% alteration of the Class 2 habitat; risk	
		<ul> <li>managed [target to be] developed on a site specific basis (HFN pB8).</li> <li>Default target may be exceeded if required for access or safety (HFN pB8).</li> <li>Risk managed plans require RPBio sign-off (KNT pF10, HFN pB8).</li> <li>The definition of "Critical Habitat" is as defined by the Ministry if Environment (MOE) in February 2005 (HFN pB8)</li> <li>Implement Management Objectives, Targets and Indicators from March draft of NCLRMP (MA pC1).</li> </ul>	

S	Objective	Strategy	Implementation indicator
3	maintain the integrity of and linkage amongst critical habitats, including functional visual (security) and resting (bedding) cover (NC p112); maintain the function of and connectivity amongst critical grizzly bear habitats, including functional visual (security) and resting (bedding) cover (CC p43).	<ul> <li>[Implementation indicator is] amount of alteration of ground-verified critical habitats (NC p112).</li> <li>Draft mapping of critical habitat exists; peer review and ground truthing of this mapping is required (NC p113)</li> <li>The size and configuration of the forested component of critical habitat are location dependant (NC p112).</li> <li>Where necessaryprotectnatural drainage patterns, the natural distribution of snow avalanching, [the structure of critical habitats by preventing] windthrow [and] natural light levels.</li> </ul>	Alteration of ground-verified critical habitat.

#### Grizzly bear—landscape-level forage supply.

Maintain a continuous forage supply across the landscape.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

Implementation indicator: % of landscape made up of mid-seral forest.

- MO Target: no target.
- G2G (MA): <50% of each BEC Variant in Sommerville
- EBMH Target: no target.
- LRMP (NC) Target: < 50% of each BEC Variant.
- LRMP (CC) Target: < 50% in landscapes important to grizzly bears.

2	maintain the quantity and quality of grizzly bear habitat [in] Sommerville (MA pC1).	Implement Management Objectives, Targets and Indicators from March draft of NCLRMP (MA pC1).	Mid-seral.
3	maintain landscape level forage supply by BEC variant on a continuous basis (spatially and temporally) (NC p111).	[Implementation Indicator is] amount of mid-seral forest by BEC variant (NC p111).  In landscapes important for grizzly bear habitat maintain < 50% in mid seral stage (NC p111, CC p42).	Mid-seral.

## Grizzly bear—stand-level forage supply.

Maintain adequate grizzly bear forage within managed forest stands.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

Implementation indicator: stocking density on rich, wet sites<sup>144</sup>.

- MO/G2G/EBMH Target: no target.
- LRMP Target: lower than standard stocking.

Implementation indicator: % of rich, wet sites with cluster planting.

- MO/G2G/EBMH Target: no target.
- LRMP target: 100% (implied).

Implementation indicator: % of highly effective grizzly bear habitat treated with aerial herbicide

- MO/G2G/EBMH Target: no target.
- LRMP Target: 0%.

,	S Objective	Strategy	Implementation indicator
4	2 maintain the quantity and quality of grizzly bear habitat [in] Sommerville (MA pC1).	Implement Management Objectives, Targets and Indicators from March draft of NCLRMP (MA pC1).	
	3maintain adequate forage within managed forest stands by maintaining productive understories (NC p112). Maintain adequate forage for grizzly bears within managed forest stands by maintaining productive understories and natural levels of downed wood (CC p43).	<ul> <li>On rich and wetter sites, [frequently used by grizzly bears in CC] undertake cluster planting and manage to lower stocking standards (NC p112, CC p43).</li> <li>[Implementation indicator is] spatial distribution of trees in regenerating stands (NC p112).</li> <li>Consider uneven spacing of seedlings and saplings to maximize forage benefit (NC p112, CC p43).</li> <li>Other mitigation measures include pre-commercial thinning, group selection, selection harvesting, variable retention, pruning, and prescribed fire [to limit crown closure within regenerating stands] (NC p112, CC p43).</li> <li>Do not use aerial herbicide applications in highly effective grizzly habitat. Target only vegetation directly competing with crop trees (NC p112, CC p43).</li> </ul>	Stocking density. Cluster planting. Aerial herbicide.

### Grizzly bear—displacement and mortality from roads

Minimize road-induced displacement and mortality risk.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

Implementation indicator: timber harvesting and transportation activity between May 15 and Oct 15.

- MO Target: no target.
- G2G (MA) Target: no activity within 2 km of Khutzeymateen Inlet, extending to Crow Inlet; no activity in mouse creek.
- EBMH/LRMP Target: no target.

Implementation indicator: % of watershed with restricted public access

- MO/G2G/EBMH Target: no target.
- LRMP (CC) Target: introduce controls such as gating in Saloompt, Nusatsum, Clayton, Talchako/Gyllenspetz and Smitley/Noeick landscape units
- LRMP (NC) Target: introduce controls such as gating in the Khyex watershed

Implementation indicator: % of road length with visual screening

- MO/G2G/EBMH Target: no target.
- LRMP (CC) Target: provide visual screening in Saloompt, Nusatsum, Clayton, Talchako/Gyllenspetz and Smitley/Noeick landscape units
- LRMP (NC) Target: provide visual screening

Assessment or plan: access management plan (CC/NC)—see Objectives related to access (p.169).

2 minimize disturbance to bears [in] Sommerville (MA pC1).	No active logging or log transport within 2 km of Khutzeymateen Inlet, extending to Crow Inlet, between May 15 and Oct 15. Road construction permitted (MA pC1).	Harvesting and hauling activity.
	Logging in Mouse creek only acceptable when bears are not present at the estuary (October 15 to May 15) (MA pC5).  • No noticeable impact of logging in Mouse creek on bears (MA pC5).	
3minimize road-induced displacement and mortality risk of bears within or adjacent to critical habitats (NC p111, CC p43).		Proximity of roads to critical habitat.  Road networks with

S Objective	Strategy	Implementation indicator
minimize mortality risk to bears related to motorized road access at the watershed scale (NC p110)  Minimize mortality risk to bears related to motorized road access at the watershed scale in the Saloompt, Nusatsum, Clayton, Talchako/Gyllenspetz and Smitley/Noeick landscape units [referred to in this table as the identified landscape units] (CC p45).	Introduce controls to public access [in the identified landscape units] such as gating on any new roads constructed in connected road networks (CC p45); introduce controls to public access such as gating on any new roads constructed into the Khyex watershed (NC p111); this could include windowed public access whereby the timing and amount of use is consistent with minimizing mortality risk to grizzly bears (NC p111, CC p45). [Indicator would be proportion of area with restricted public access.]  Provide windfirm visual screening along roads [in the identified landscape units] to provide security (i.e., do not conduct vegetation management or stand tending adjacent to roads) (CC p45); provide windfirm visual screening along roads (NC p110). [Indicator would be proportion of road length with visual screening].  • [Implementation indicator is] number of connected road networks having unrestricted public access (NC p111).  • Strive to minimize the number of connected road networks through access planning (NC p111).  • Promote one-side development [in the NC and in the identified landscape units in the CC] i.e., road construction on one side of a valley at a time (NC p110, CC p45).  • Levels of public road access should be managed to be consistent with carrying capacity for recreation/tourism use in grizzly bear areas [in the identified landscape units] (NC p110, CC p45).  • Strategies to minimize risk of bear mortality [in the identified landscape units] could include graduated access i.e., increase difficulty of vehicle access as move further away from road origin [and] road deactivation, including deliberate removal of bridges (NC p110, CC p45).  • 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) (NC p110).  • Continue to apply existing access controls restricting non-commercial and non-industrial motorised access into Kitsault townsite (NC p111).	restricted public access or proportion of area with restricted public access.  Visual screening.

#### Grizzly bear—displacement by and habituation to people

Minimize displacement and habituation of bears due to commercial recreation.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

Implementation indicator: commercial recreation user days per square kilometre during the active season.

- MO Target: no target.
- G2G (MA) Target: < 1500 (May 15 Oct 15) at Tsamspanaknok Bay.
- EBMH Target: no target.
- LRMP Target: default of < 1500 (April 1 Oct 31); risk-managed < 5000 (April 1 Oct 31)

Implementation indicator: # of land-based bear viewing sites.

- MO Target: no target.
- G2G (MA) Target: one in the Khutzeymateen Inlet Protection Area.
- EBMH Target: no target.
- LRMP (NC) Target: to be determined by First Nations.

Objective **Implementation indicator** Strategy Implementation indicator: # of permanent, land-based overnight commercial recreation facilities. MO Target: no target. G2G(MA) Target: zero in the Khutzeymateen Inlet Protection Area. EBMH/LRMP Target: no target. Implementation indicator: # of tenures for random, land-based bear viewing. MO/G2G/EBMH Target: no target LRMP (NC) Target: no tenures. Assessment or plan: wildlife viewing standards and code of ethics (NC). ... minimize the displacement and habituation Initial target [of] < 1500... user days... /km<sup>2</sup> at Tsamspanaknok Bay; ... revise... based on carrying capacity studies... (MA User days / km<sup>2</sup> of bears due to commercial recreation pC5). Land based bear viewing activities at Tsamspanaknok Bay [in the [allow] one... land based bear viewing site (MA pC5). sites. Khutzeymateen Inlet Protection Area] (MA pC5); maintain conservation... values...(MA Permanent, land-based • Implement management guidelines to minimize bear displacement (MA pC5). pC5). overnight commercial • Until guidelines are developed, no new bear viewing tenures should be issued; existing operations to be grandfathered, recreation facilities. based on their historic levels of activity in the area (MA p C5) ...minimize impacts of human activity on bears... [in the Khutzeymateen Inlet Zero... occurrence of permanent, land-based overnight commercial recreation facilities; any facility... should be water based Protection Area] (MA pC5). and away from important grizzly habitat... (MA pC5) • Implement... bear viewing carrying capacity guidelines... by 2006 (MA pC5). ...minimize displacement and habituation of [Implementation indicator is] # of land-based user days per km2 per active season (April 1 – Oct 31) (NC p115). Allocate user User days / km<sup>2</sup>. bears due to commercial recreation activities, days per km2 per active season (April 1 – October 31), with 1500 user days per km2 as a precautionary benchmark, and an Location of land-based including land-based bear viewing (NC p115); absolute maximum of 5000 user days per km2 per active season. To exceed 1500 user days per km2, commercial operators viewing sites. minimize displacement and habituation of and/or land managers must assess risks to bears from increased levels of use and implement strategies to minimize or mitigate bears by managing the location and intensity bear displacement, habituation and associated increases in mortality risk (NC p116, CC p44). of land-based bear viewing activities (CC • When allocating number of commercial recreation user days, consider use of these areas by First Nations as a priority and p44); ...minimize impacts to bears from landcarrying capacity. ... a buffer has been built into the target for user day density to accommodate First Nations activities in based commercial and non-commercial high use areas (NC p115, CC p44). wildlife viewing (NC p114); minimize • Ensure that user days are allocated in an equitable way between public and commercial recreation users (NC p115, CC displacement and habituation of bears due to p44). commercial recreation activities (CC p44);... commercial bear viewing... [will minimize] No tenures for random land-based bear viewing (NC p114). impacts on black and grizzly bears (NC p Fixed land-based bear viewing is permitted in... [in landscape units where bear viewing is] consistent with FN perspectives... 147). in their traditional territories (NC p114). • Before approving new sites for wildlife viewing, determine overall area-wide impact on the subject species and the carrying capacity at sites under consideration (CC p57); regulation of carrying capacity within bear viewing areas needs to take into account the level of public recreation use (NC p115).. • Educate operators and viewers in a code of ethics for responsible viewing practices (CC p57). • 100% compliance by tenured bear viewing operations [with] ... bear viewing guidelines (NC p115); 100% compliance by tenured bear viewing operations with bear viewing guidelines... (CC p44).

S	Objective	Strategy	Implementation indicator
		<ul> <li>Maintain opportunities for recreational hunting and fishing within tenured sites for fixed land-based bear viewing (NC p115)</li> <li>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 (NC p115, CC p44).</li> <li>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 (NC p115).</li> <li>Maximum visitor-viewing periods per day will be identified during management planning (required by Land and Water BC for tenuring) (CC p44).</li> <li>Encourage cooperative problem-solving between commercial bear-viewing operations and outdoor recreationists (including fishers and hunters). Strategies for accommodating various interests could include separating bear-viewing and recreational activities spatially and/or in timing of use (CC p44).</li> <li>Consider instituting a "watchman" program to monitor bear viewing activity and associated impacts (NC p116, CC p44).</li> <li>Bear awareness education at high use areas is essential (NC p116, CC p44).</li> <li>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 (NC p116, CC p44).</li> <li>Complete and implement wildlife viewing standards and a code of ethics supported by MWLAP, the wildlife viewing industry and the viewing public (CC p57), establish recreation resource and visitor management strategies, and protocols for wildlife viewing, etc (territory scale; EBMH p 34); LWBC to work with MWLAP to assess and provide direction on appropriate management of fixed land-based bear viewing operations (NC p114).</li> </ul>	

# Grizzly bear—displacement by aircraft

Minimize displacement of bears by aircraft.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

Implementation indicator: air-based bear viewing hours.

- MO/G2G/EBMH Target: no target
- LRMP Target: zero hours.

3	minimize impacts to bears from water- and
	air-based commercial and non-commercial
	viewing (NC p113).

No air-based bear viewing (NC p114); no air-based viewing to be permitted (CC p44).

- $\bullet \ \ Aircraft \ should \ stay \ a \ minimum \ of 500m \ from \ bears \ (vertically \ and \ horizontally) \ (NC \ p114, \ CC \ p44).$
- Inform pilots of flying practices that minimize disturbance of grizzly bears (NC p114, CC p44).

# Grizzly-bear—displacement by water-craft.

Minimize displacement of bears by watercraft.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

No strategies.

Assessment or plan: Studies to determine acceptable numbers of boats and viewers (CC).

3 ...minimize impacts to bears from water-

Strategies not completed in NC.

Air-based viewing.

S	6 Objective	Strategy	Implementation indicator
	based commercial and non-commercial viewing (NC p113, CC p33).	<ul> <li>Determine acceptable numbers of boats or viewers based on carrying capacity and public safety (CC p57).</li> <li>Promote high level of awareness about low impact water-based bear viewing among commercial and non-commercial users (NC p114, CC p43).</li> <li>Commercial viewing operators are encouraged to voluntarily comply with a set of water-based bear viewing guidelines developed by the province (CC p43); water-based bear viewing guidelines with which commercial viewing operators are encouraged to voluntarily comply (NC p113).</li> <li>Water-based viewing should only occur after dawn and before dusk (CC p43).</li> <li>Viewers should leave the site immediately if bears show signs of agitation (CC p44).</li> <li>The LRMP recommends Mouse Creek, within Khutzeymateen Inlet, as a preferred location for spring and fall water-based bear viewing (NC p113)</li> </ul>	
	Ovilu book monetive bureen book i	internation.	

#### Grizzly bear—negative human-bear interaction.

Prevent bear mortality resulting from negative bear-human interactions.

This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats (EBMH).

Implementation indicator: funding for education programs to reduce negative human-bear interactions.

- MO/G2G/EBMH Target: no targetLRMP Target: sufficient to initiate program.

3 prevent bear mortality resulting from negative bear-human interactions e.g., conditioned to human attractants (garb pet food) (NC p116, CC p44)	bears food and garbage handling methods, where possible; educating the public regarding alternatives to shooting to reduce bear-	Education programme.
Prevent direct and indirect conflicts be livestock grazing and grizzly bears in the Coola Valley landscape unit (CC p46).		

# Objectives related to general human well-being<sup>145</sup>

S	Objective	Strategy	Implementation indicator			
	Human well-being Achieve high levels of human well-being (EBMH)					
	e also all remaining objectives related to general h	uman well-being.				
No	strategies.					
As	sessment or plan: well-being assessment (EBMH)	; socio-economic assessment (EBMH); rural well-being strategy (NC).				
3	Achieve high levels of human well-being (EBMH p5)ensure the coexistence of healthy, fully functioning ecosystems and human communities (EBMH p5);maintain characteristics of ecosystems such that human well-being [is] supported and improved (EBMH p5) 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 (NC p 176).	No strategies.  • [Produce] well-being assessment (EBMH p33).  • [Produce] socio-economic assessment (EBMH p33).  • 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 (NC p176)				
Mi	<b>ood protection</b> nimize risk to life and property from flooding and is is a sub-objective of the core EBM objective to	erosion in settlement areas.  Build stable, resilient, well-serviced, and peaceful communities in coastal British Columbia.				
No	strategies.					
	Reduce risk to life and property from flooding and erosion in settlement areas (CC p48).	<ul> <li>Mostrategies.</li> <li>Minimize or avoid future community and business development and infrastructure within floodplains and alluvial fans with risk of debris torrents (CC p48).</li> <li>Any development proposals in these areas should assess risks to life and property from flooding and erosion (CC p48).</li> <li>Any development in these areas should employ protective measures such as construction setbacks and levels, protective berms or dykes, etc, while maintaining environmental values (CC p48).</li> <li>Support the use of innovative techniques to maintain environmental values while developing protective measures for settlement areas (CC p48).</li> <li>Dams, dykes and other in stream works shall be maintained and operated in a manner that minimizes or avoids upstream and downstream risks (CC p48).</li> </ul>				

Objective **Implementation indicator** Strategy Domestic and industrial access to water Make water available for domestic use and for economic development. This is a sub-objective of Provide adequate opportunities for individuals and households to meet their needs (EBMH). No strategies. Water is available for First Nations, local No strategies. communities and economic development (CC • Surface water use will be authorized through a licence as defined in legislation (CC p47)... p47). • Water use applications for diversion, storage or use of water must minimize or avoid impacts to downstream users, riparian zones, aquatic ecosystems, and recreation. Magnitude of water use application will dictate scale of environmental assessment (CC p47). • Improve water conservation through wise use, innovative technology, education, and water conservation programs (CC p47). • Follow best management practices to minimize or avoid impacts to drinking water (CC p47); apply management practices to land development activities to minimize or avoid impacts to water quality, quantity and timing of flows (CC p47). Applications for development or uses on unstable slopes or within riparian areas shall address the possibility of landslides or erosion that could impact water quality or affect public safety (CC p48). Health services Promote health. This is a sub-objective of Provide adequate opportunities for individuals and households to meet their needs (EBMH) and of the core EBM objective of Achieve the health, wealth and educational status required for a high quality and secure life for both aboriginal and non-aboriginal people (EBMH p5) Implementation indicator: # and type of health education programs. • LRMP (CC) Target: develop new Implementation indicator: # and type of recreation programs. LRMP (CC) Target: maintain and improve Implementation indicator: # and type of recreation facilities. • LRMP (CC) Target: maintain and improve Assessment or plan: Health services needs assessment (CC); Rural health plan (CC). Develop health education programs that encourage exercise and healthy lifestyles choices (CC p49). People are healthy and lead long lives (CC p Number and type of health 49). education programs. • Design health... resources to address local needs (NC p176) • Provide access to traditional food and medical botanical sources (CC p49). [see also traditional forest resources section in Number and diversity of recreation programs and Objectives related to First Nations cultural and traditional resources, p.76]. facilities. Undertake a needs assessment to determine health services required for First Nations and local communities that links to the

Support the development of future health planning process through the regional health authority for First Nations and local

LRMP plan (CC p49).

S	Objective	Strategy	Implementation indicator
		communities that links to the LRMP plan (CC p49).	
		Maintain and improve access to physical education and community recreation programs and facilities (CC p49).	
C	Cultural and social activity		
ίι	upport social and cultural non-market activity.		
		nities for individuals and households to meet their needs (EBMH) and of the core EBM objective of Create a strong and diverse mix l, and non-market activities within communities and across the region (EBMH p5).	of non-profit and voluntary
Se	ee also Objectives related to First Nations cultural	and traditional resources (p.76).	
n	nplementation indicator: funding to not-for-profit of	organisations, by organization type.	
,	LRMP (CC) Target: some support		
١:	ssessment or plan: study of social, cultural and vol	unteer programs with recommendations (CC); information packages promoting volunteerism (CC).	
,	Communities have a vibrant set of traditions, cultural and non-market activities (CC p51).	Social, cultural and volunteer programs are to be supported including funding (CC p51); support the development of volunteer organizations that assist in the strengthening of the community and region (CC p 51).	Funding for not-for-profit organisations.
	Communities have a strong and diverse mix of non-profit and volunteer organisations (CC p 51).	<ul> <li>Identify and plan for social, cultural, and volunteer programs that strengthen the community and region (CC p51); identify, support and enhance community traditions, cultural and non-market activities (CC p51); social, cultural and volunteer programs are to be supported through their identification and planning(CC p51).</li> <li>Provide information on the benefits of volunteerism, community involvement and cultural programs and encourage participation in these activities (CC p51).</li> </ul>	
S	Social services		
r	rovide adequate social services.		
Γŀ	his is a sub-objective of Provide adequate opportun	nities for individuals and households to meet their needs (EBMH).	
V	o strategies.		
1	ssessment or plan: emergency preparedness plan (0	CC).	
3	Coastal Communities are peaceful and have adequate social services (CC p51).	No strategies.  • Facilitate the development and coordination of social and emergency planning within the Central Coast (CC p51); facilitate the development of emergency planning for Coastal Communities (CC p52).  • Provide access to public safety and social programs that meet the needs of communities (CC p51).	

• Maintain professional support in rural areas (NC p176)

		Т	T		
S	Objective	Strategy	Implementation indicator		
	Physical infrastructure Provide adequate physical infrastructure and services.				
	his is a sub-objective of Provide adequate opportunicoastal British Columbia (EBMH p5).	ities for individuals and households to meet their needs (EBMH) and of the core EBM objective of Build stable, resilient, well-serv	iced, and peaceful communities		
In	nplementation indicator: type (e.g., road, ferry) and	season (e.g., all year, summer) of access to each coastal community.			
•		Bella Bella and Klemtu; summer ferry service to Bella Coola, Ocean Falls and other coastal communities; highway links to Bella Cervice to coastal communities and activity centres.	oola and Port Hardy; daily air		
In	nplementation indicator: # and condition of commu	unity sports and gathering facilities.			
•	LRMP (CC) Target: current number and conditi	on (implied)			
A	ssessment or plan: coastal transportation plan (CC)				
3	Coastal Communities have adequate physical infrastructure (CC p52).	<ul> <li>Maintain year round ferry service to Bella Bella and Klemtu (CC p52); maintain summer ferry service to Bella Coola, Ocean Falls and other coastal communities (CC p52); maintain safe highway links to Bella Coola and Port Hardy (CC p52); maintain daily air service to coastal communities (CC p52); maintain marine freight service to coastal communities and activity centres (CC p52).</li> <li>Local governments and First Nations to develop a coordinated transportation plan that identifies present and future needs for First Nations and local communities that links to the LRMP plan (CC p52).; identify and coordinate services required for the Central Coast including fuel, marine supplies, docks, airstrips, rescue and public safety (CC p52).</li> <li>Ensure continued maintenance and access to community sports and gathering facilities (e.g. rinks, ball fields, community halls; CC p52).</li> <li>Maintain and enhance an array of communication systems</li> <li>ensure communication assets have appropriate technological standards</li> <li>provide for telecommunication installation sites (CC p52).</li> </ul>	Ferry, road and air services.  Sports/gathering facilities.  Communication systems.		
Settlement Promote planned settlement. This is a sub-objective of the core EBM objective of Build stable, resilient, well-serviced, and peaceful communities in coastal British Columbia (EBMH p5)  No strategies.  Assessment or plan: Settlement plan (CC).  3 Provincial land use zoning accommodates planned settlement growth (CC p52).  O Complete and implement local planning with the input of First Nations and local residents that are consistent with the LRMP (CC p52); identify long-term strategic needs for settlement sites (CC p52); identify environmentally appropriate settlement areas (CC p52); identify existing boundaries for map reserves (CC p52).					

Objective **Implementation indicator** Strategy Community influence This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests (EBMH) and to Ensure a fair distribution of benefits, costs and risks across all parts of coastal British Columbia, including aboriginal and non-aboriginal people (EBMH). In this table, community influence divides into the Industry consultation and Public decision-making sections below. Also see Community influence sections in Objectives related to forestry and timber (p.149), Objectives related to mineral and energy resources (p.151) and Objectives related to tourism and outdoor recreation (p.163). Industry consultation Ensure industry consults with local people and governments. This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests (EBMH p5) and to Ensure a fair distribution of benefits, costs and risks across all parts of coastal British Columbia, including aboriginal and non-aboriginal people (EBMH p5). Implementation indicator: central place for consolidated, geo-referenced land-rights and interests. • LRMP (NC) Target: one central place (implied). Implementation indicator: # of consultations with First Nations per 100 new developments. LRMP (NC) target: no specific target. Industrial developers to engage in Establish central place to record users of an area so new developers know who to consult with (NC p182). Geo-referenced land-rights consultation... to address interests of all and interests. Consult... with First Nations (NC p178) parties, including First Nations (NC p182); Number of consultations promote dialogue... and problem solving • Encourage dialogue between industry and other interests at all phases of project development (NC p178). between industry, the general public, and governments, including First Nations regarding sustainability and ecosystem-based management (NC p178). Public decision-making Ensure public decision processes are inclusive, democratic and transparent. This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests (EBMH p5) and to Ensure a fair distribution of benefits, costs and risks across all parts of coastal British Columbia, including aboriginal and non-aboriginal people (EBMH p5). Implementation indicator: % of development applications reviewed by First Nations LRMP (NC) Target: greater than zero. Involve First Nations in permitting and approval processes (NC p179). Public decision processes are inclusive, First Nations review. democratic, transparent, effective, and learn • Develop effective public input process with balanced levels of representation from local communities, stakeholders, First from experience (CC p 51). Nations and Local Governments (CC p51). • Have strong regional economic development commissions and effective information sharing among all communities (CC p51).

	T		T
S	Objective	Strategy	Implementation indicator
		• Resource management and development plans must take into account existing activities (CC p51).	
M	leeting Needs		
Pr	ovide adequate opportunities for individuals and ho	buseholds to meet their needs (EBMH).	
	e also Annual income immediately below and see aldlife ([Subsistence] Harvesting opportunity section	Objectives related to First Nations cultural and traditional resources (Traditional forest resources section, p.76) and Objectives relatin, p.138).	ted to harvesting fish and
No	o strategies.		
As	ssessment or plan: Vulnerability assessment (EBM)	H).	
3	Provide adequate opportunities for individuals	No strategies.	
	and households to meet their needs (EBMH p 33).	o [Conduct] vulnerability assessment (EBMH p33).	
	Vulnerable sectors of the community are protected (EBMH p33).		
Co	<u> </u>	maintain a basic lifestyle as defined by community members themselves (EBMH).  Il economic benefit (particularly Resource/tenure allocation, p.135, and Employment sub-objectives, p.135) and education and train	ning (p.136)
	o strategies.	4 3 71 7 1 3 3 71 7	- C (1 /
2	Promote growth in annual income (TP pC5,	No strategies.	
	HFN pC5, KNT pG5, GFN pG5).	• Upward trend in personal income in LHAs (TP pC5, HFN pC5, KNT pG5, GFN pG5)	
3	Community members can meet their financial	No strategies.	
	needs and maintain a basic lifestyle as defined by community members themselves (EBMH p33).	• Achieve and maintain national average wage levels and employment benefits in plan area communities within 5 years, to be benchmarked every year (CC p50); Maintain and enhance employment opportunities to achieve an income level that is as	
	Protect vulnerable communities by enhancing livelihood opportunities in the formal and informal economies (EBMH p33);	good, or better than the national average (CC p50).	
	People and households achieve income levels and benefits (i.e. the national average or better), which meet or exceed their needs and secure their material wellbeing (CC p50)		

S	Objective	Strategy	Implementation indicator			
	Economic growth and diversity					
	acourage economic growth and diversity.					
Oı	Diversify the economies of First Nations' and other	er communities in the Plan Area (G2G).				
		eaucracy and Business infrastructure and services below and see Sector growth and diversity in Objectives related to non-timber for ectives related to mineral and energy resources (p.150) and Objectives related to tourism and outdoor recreation (p.156).	rest products (p.141),			
In	plementation indicator: funding for marketing prog	gram.				
•	LRMP (CC) Target: sufficient to develop program	m.				
As	ssessment or plan: economic development and dive	rsification plan (CC/NC).				
2	Diversify the economies of First Nations' and other communities in the Plan Area(s) <sup>146</sup> (TP pC4, HFN pC4, KNT pG4, GFN pG4)  Maintain opportunities for shellfish aquaculture (MA pC7).	<ul> <li>No strategies.</li> <li>Increase in Plan Area(s) [economic] diversity index score (TP pC4, HFN pC4, KNT pG4, GFN pG4).</li> <li>Upward trend in assessed property values (TP pC4, HFN pC4, KNT pG4, GFN pG4).</li> <li>[Shellfish aquaculture] activity is permitted (MA pC7).</li> <li>upward trend in shell fish aquaculture revenues (TP pC4, HFN pC4, KNT pG4, GFN pG4).</li> <li>upward trend in expenditure and/or number of shell fish aquaculture tenures (TP pC4, HFN pC4, KNT pG4, GFN pG4).</li> </ul>				
2	Maintain options to access areas beyond [Khutzeymateen Inlet Protection Area] for economic development (MA pC5).	Designation provides for acceptable access options through Protection area (MA pC5)				
3	Region and communities have a stable and diverse economy (CC p50); Central Coast GDP is increased by an average of 5% per year. This includes suppliers and workers outside the plan area (CC p50).  Region is economically diverse, within and between natural resource sectors, including a more even distribution of employment across sectors, to be achieved within 5 years (CC p50) enhance the diversity of large and small scale commercially viable businesses in the plan area (NC p177)	Develop a diversified marketing program for Coastal business opportunities; that includes strategies and resources for implementation (for example a coastal marketing certification program; CC p50).  o Identify and plan for economic opportunities, within the plan area, based on future market and economic trends and that support diversification including value-added facilities and products (CC p 50); identify opportunities linked to the natural potential of the plan area (NC p177).	Marketing program.			

Promote production of value-added products.

This is a sub-objective of Diversify the economies of First Nations' and other communities in the Plan Area (G2G).

No strategies

S	Objective	Strategy	Implementation indicate
	A significant proportion of all resources harvested should be processed into valueadded products (NC p181).	No strategies.	
N	/aste wood		
iı	nd ways to utilize waste wood.		
h	nis is a sub-objective of Diversify the economies	of First Nations' and other communities in the Plan Area (G2G).	
10	o strategies		
	Find ways to utilize waste wood (NC p181)	No strategies.	
'n	acourage investment in local companies.	of First Nations' and other communities in the Plan Area (G2G).	
	<u> </u>	Investment section, p.146) and Objectives related to tourism and outdoor recreation (Investment section, p.156).	
m	plementation indicator: funding for program to a	ttract investment.	
	LRMP Target: sufficient to develop program		
m	aplementation indicator: value of tax incentives (	etc.) promoting research and development.	
	LRMP (NC) Target: sufficient to promote inno	vation.	
3	Create an environment that encourages investment in local companies (NC p177).	Facilitate and develop investment programs that will attract compatible industry and new people to the region (CC p 50); undertake programs to help community members attract capital to their communities (NC p177).	Funding for investment program.
		Create an enabling environment to enhance opportunities for innovation such as research and development e.g., through appurtenancy, tax incentives etc. (NC p177).	Tax incentives.
		• Encourage local investment and participation in new economic ventures, including value-added and specialty products (NC p177).	
3	ureaucracy		

Implementation indicator: funding for reviewing development proposals, per proposal and by proposal type.

• LRMP (NC) Target: adequate.

3	Expedite the permitting and approval process
	for resource development activities, including
	mining, forestry, tourism etc (NC p179).

Provide adequate resources for planning and assessment of proposed developments (NC p179)

- Report on permit processing times as part of LRMP implementation and monitoring (NC p179).
  LRMP and coastal plan should provide clarity of management intent, in order to facilitate the processing of development

Funding for development review process.

S	Objective	Strategy	Implementation indicator
		applications in consideration of all values (NC p179)	
В	usiness infrastructure and services		
De	evelop the infrastructure (e.g., transportation, comm	nunication) necessary to support business.	
Th	is is a sub-objective of Diversify the economies of	f First Nations' and other communities in the Plan Area (G2G).	
Im	plementation indicator: % of businesses with acce	ss to basic telecommunications services.	
•	LRMP (CC) Target: 100% (implied).		
3	Provide support to existing businesses, that maximizes benefits to communities (CC p 50); develop services for businesses, including resource manufacturing and processing facilities (CC p50); provide appropriate infrastructure to realize areabased economic potential (NC p177).	Provide local business organizations or chambers of commerce with basic level infrastructure, i.e. for internet access (CC p52).	Basic telecommunication infrastructure.
Pro Th	• •	dividuals and communities, to contribute to local and provincial economies (G2G).  Ensure a fair distribution of benefits, costs and risks across all parts of coastal British Columbia, including aboriginal and non-about title and interests (EBMH).	original people (EBMH p5) ar
Se	e Resource rent, Resource/tenure allocation, Joint	ventures and Employment below and see Resource/tenure allocation sections in Objectives related to harvesting fish and wildlife (plated to forestry and timber (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and see Local economic benefit sections in Objectives related to mineral and energy resources (p.146) and p.146 (p.146) a	
No	strategies.		
As	sessment or plan: resource revenue capture plan (0	CC); distribution analysis (EBMH).	
2	Promote Plan Area(s) resource development by local individuals and communities, to contribute to local and provincial economies (TP pC3, HFN pC3, KNT pG3, GFN pG3).	No strategies.  • Upward trend in economic contribution of Plan Area(s) resources to local individuals and communities [as measured by] # and % of tenures held by: Plan Area(s) communities, First Nations and individuals who live and work in the plan area (TP pC3, HFN pC3, KNT pG3, GFN pG3); upward trend in resource revenue to First Nations (TP pC3, HFN pC3, KNT pG3, GFN pG3).	
3	There is a fair distribution of resources, benefits, costs, and risks across all parts of BC and Canada, including Coastal communities, aboriginal and non-aboriginal people (CC	No strategies.  • Each community within the plan area will develop a target and time frame for capturing a portion of the resource revenues generated in their area (CC p 51).	

Create an environment that encourages investment in local companies (NC p177);

Objective **Implementation indicator** Strategy Resource rent Increase the share of resource rent distributed to coastal governments. This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to contribute to local and provincial economies (G2G). Implementation indicator: % of resource rent collected from the coast that is distributed to coastal communities, by sector and by community. MO/G2G: no target EBMH Target: a fair share of benefits from local resource extraction. CC Target: no specific target. LRMP (NC) Target: maximum amount of stumpage revenue. Implementation indicator: # of protocols with First Nations that address resource rent. • NC Target: more than current number (implied). Increase the flow of benefits to local A portion of the revenue collected from the "land unit" to be returned to First Nations, resident communities and Local Resource rent. Governments (CC p 51); local communities receive a fair share of benefits flowing from local resource extraction (EBMH p33); communities from resource rents, including Protocols with First Nations. ensure that any new stumpage formula maximizes the amount of revenue that goes to local communities (NC p177). First Nations communities (NC p177); expand on opportunities to address community needs.. Negotiate protocols<sup>147</sup> [with First Nations] (NC p178). (NC p176).• Monitoring Committee to track flow of revenue in and out of the North Coast. Work with existing organizations that track the There is a fair distribution of resources, local economy e.g., North Coast Municipal Association, National Rural Network (NC p177). benefits... [to] Coastal communities... (CC p51). Increase the flow of economic benefits to First Nations (NC p178) Joint ventures Promote business partnerships between industry and coastal people or coastal governments. This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to contribute to local and provincial economies (G2G). Implementation indicator: # of business partnerships by sector and community. LRMP (CC) Target: more than current number (implied). Implementation indicator: # of protocols addressing business partnerships by sector and First Nation. • LRMP (NC) Target: more than current number (implied). Promote... partnerships... between industry, Facilitate and develop joint ventures between First Nations, local communities and business investors (CC p50); facilitate the Joint ventures or partnerships the general public, and governments, including development of partnerships between private industry, public and First Nations to address [transportation] service needs (CC Number of protocols. First Nations regarding sustainability and p52)

Negotiate protocols [with First Nations] (NC p178).

ecosystem-based management (NC p178).

There is a fair distribution of resources, benefits... [to] Coastal communities... (CC

S	Objective	Strategy	Implementation indicator
	<i>p51</i> ).		
Re	esource/tenure allocation		
Inc	rease the share of development tenures held by co	pastal people and communities.	
Th	s is a sub-objective of Promote Plan Area resource	be development by local individuals and communities, to contribute to local and provincial economies (G2G).	
Sec	also Resource/tenure allocation sections in Object	ctives related to harvesting fish and wildlife (p.139), Objectives related to non-timber forest products (p.142) and Objectives related	to forestry and timber (p.146).
Im	plementation indicator: % of tenures (e.g., % of A	AC or % of lodge sites) held by coastal residents, communities and First Nations, by community and by sector.	
•	LRMP Target: more than current proportion (im	plied).	
3	Community has access to local resources for development (EBMH p33);	A percentage of tenures and licenses to be made available to First Nations, resident communities and Local Governments for economic development (CC p 51); seek to provide tenure awards to First Nations (NC p181);	Proportion of tenures held locally.
	There is a fair distribution of resources, benefits [to] Coastal communities (CC p51).	<ul> <li>new resource use tenure opportunities should consider the socio-economic carrying capacity of existing operators (CC p51).</li> <li>Ensure there is a range of tenures and sizes of tenures (CC p51).</li> </ul>	
	promote local ownership in the tourism industry (NC p182).		
Eı	nployment		
Im	prove prospects for employment in the Plan Area	(G2G).	
Im	plementation indicator: # of conservation officer p	positions.	
•	$LRMP\ (NC)\ Target:\ more\ than\ current\ number.$		
Im	plementation indicator: # of monitoring support po	ositions.	
•	LRMP (NC) Target: more than current number.		
Im	plementation indicator: # of protocols with First N	Nations addressing employment.	
•	LRMP (NC) Target: more than current number.		
As	sessment or plan: report outlining potential for loc	cal employment from monitoring (NC).	
2	Improve prospects for employment in the Plan Area(s) (TP pC5, HFN pC5, KNT pG5, GFN pG5).	<ul> <li>Upward trend in employment levels in First Nation and Plan Area(s) communities (TP pC5, HFN pC5, KNT pG5, GFN pG5); no net job loss in LHAs and a lower unemployment rate in LHAs (in 2011 vs 2006 census year) (TP pC5, HFN pC5, KNT pG5, GFN pG5); downward trend in unemployment levels in First Nation and Plan Area(s) communities (TP pC5, HFN pC5, KNT pG5, GFN pG5); downward trend in El claim rates in LHAs (TP pC5, HFN pC5, KNT pG5, GFN pG5); downward trend in [long-term El] claim rates in LHAs (TP pC5, HFN pC5, KNT pG5, GFN pG5).</li> <li>Upward trend in tourism forest sector [and] shell fish aquaculture employment in First Nation and Plan Area(s) communities (TP pC4, HFN pC4, KNT pG4, GFN pG4).</li> </ul>	

S	Objective	Strategy	Implementation indicator
3	Community working population has opportunity to engage in meaningful employment (EBMH p33)  Increase the number of jobs in the LRMP area (NC p176).  There is a fair distribution of resources, benefits[to] Coastal communities (CC p51)  People and households achieve income levels and benefits (i.e. the national average or better), which meet or exceed their needs and secure their material wellbeing (CC p50).	Increase number of local conservation officers (NC p176).  pursue opportunities for community involvement in monitoring (NC p177).  o Identify opportunities for community involvement in monitoring (NC p177).  o Achieve and maintain national average employment levels in plan area communities, within 5 years (CC p50); achieve "no net job loss" or net job increase (CC p50); phase in EBM to create new employment and new economy (CC p50).  o Increase employment levels from resource activities for local residents and First Nations (CC p51).  Apply targeted interventions to increase employment opportunities in First Nations communities (NC p178).  Negotiate protocols [with First Nations] (NC p178).	Conservation officer positions.  Monitoring support positions.  Protocols addressing employment .
	seems men material methoding (ee pool.		

# Education and training

Provide opportunities for training and education.

This is part of the core EBM objective to Achieve the health, wealth and educational status required for a high quality and secure life for both aboriginal and non-aboriginal people (EBMH p5).

See also Education and training sections of Objectives related to non-timber forest products (p.144) and Objectives related to mineral and energy resources (p.152).

Implementation indicator: amount of funding for new education programs

• LRMP Target: sufficient to address identified education needs.

Implementation indicator: # of protocols between mineral and energy companies and First Nations addressing education, by sector and First Nation.

• LRMP (NC) Target: more than current number (implied).

Implementation indicator: funding for internet skill development courses.

• LMRP (CC) Target: sufficient for course (implied).

Assessment or plan: education needs assessment (C	assessment or plan: education needs assessment (CC); study defining benchmark for access to education (CC).		
3 People successfully achieve a level of academic trade or technical level of education that enables them to achieve a high standard and quality of life (CC p 49).  Develop forestry-related education programs in direct proximity of North Coast colleges and high schools, including programs in First Nations communities (NC p181).	<ul> <li> develop programs to address [identified education] gaps; explore links to the LRMP where possible (CC p 49); design education resources to address local needs (NC p176).</li> <li>Undertake an education needs assessment for First Nations and local communities to explore reasons for low educational achievement levels (CC p49).</li> <li>Establish a benchmark to evaluate access [to education] (CC p49).</li> <li> pursue Federal and Provincial education programs (CC p49).</li> <li> pursue educational infrastructure, supplies and services (CC p49).</li> <li>Prior to developing a mineral, aggregate or energy project, a company must work with the [affected] First Nation to come up with agreements which address training (NC p179).</li> <li>Provide local business organizations or chambers of commerce with skill development, i.e. for internet access (CC p52).</li> <li>Assist people to develop the skills and opportunity to earn sufficient income to meet or exceed their basic needs (CC p50).</li> </ul>	New education programs.  Number of protocols with First Nations addressing education.  Funding for internet skills courses.	

S	Objective	Strategy	Implementation indicator
		<ul> <li>Maintain academic and trade educational programs and services that assist people to meet or exceed provincial educational standards (CC p 49).</li> <li>Include technical and professional training [for First Nations] as an integral part of overall resource planning (NC p178); provide appropriate training to realize area-based economic potential (NC p177).</li> <li>Utilize computer-based technology for long distance educational services (CC p49).</li> <li>Develop partnerships for educational programs between private industry, public and First Nations (CC p 49).</li> <li>Develop educational programs that include local history and culture to foster cross-cultural respect and understanding (CC p49)</li> </ul>	
	oppulation growth omote a stable or growing population (G2G).		
No	strategies		
2	Promote stable or growing population levels in Southern Central Coast, Central Coast and North Coast Plan Areas and Plan Area(s) communities (TP pC3, HFN pC3, KNT pG3, GFN pG3); communities have stable or growing population trends over then next five years (CC p 50)	No strategies.  • Upward trend in population of Local Health Areas (LHAs) and Plan Area(s) communities (TP pC3, HFN pC3, KNT pG3, GFN pG3).	

# Objectives related to harvesting fish and wildlife<sup>148</sup>.

S	Objective	Strategy	Implementation indicator
H	arvesting opportunity		
Ma	nintain sustenance, commercial and recreational,	hunting, fishing and trapping opportunities (EBMH).	
Im	plementation indicator: % of fishing, hunting and	I trapping areas negatively impacted by development.	
•	G2G (KM, KS, MA) Target: minimize impacts LRMP (CC) Target: minimize impacts.	to trapping.	
As	sessment or plan: study of negative impacts on he	unting fishing and trapping opportunities (CC).	
2	Maintain opportunities for sustenance and traditional activities (MA pC3).	[minimize] impact on trapping areas and trails (KM pC10, KS pC11, MA pC4)	
	Avoid impacts to trapping and trap trails (KM pC10, KS pC11, MA pC4).		
3	Maintainsustenance, commercial and	minimize impacts to sustenance, recreational and commercial fishing and hunting opportunities (CC p62).	Study of impacts to
	recreational, hunting, fishing and trapping opportunities (EBMH p44, p53, CC p62);	o Identify impacts to sustenance, recreational and commercial fishing and hunting opportunities (CC p62).	harvesting opportunities.
	opportunities (EBMH p44, p33, CC p62);	Opportunities maintained for recreational hunting and fishing within tenured sites for fixed land-based bear viewing (NC)  115  115  115  115  115  115  115  1	Impacted opportunities.
		<ul> <li>p115).</li> <li>Local employment related to commercial guided hunting will be promoted (CC p62).</li> </ul>	
_			
	ollaboration amongst users	no suide sufficience and other uses of the land have	
		ng, guide outfitting and other uses of the land base.	
	is sub-objective is part of the core EBM objective in Area (G2G).	e to Ensure a fair distribution of benefits, costs and risks (EBMH) and of the objective to Diversify the economies of First Nations	and other communities in the
Se	e also Collaboration amongst users sections in Ob	pjectives related to mineral and energy resources (p.151), Objectives related to tourism and outdoor recreation (p.157) and Objectives	s related to scenery (p.166).
Im	plementation indicator: % of developers and non-	exclusive tenure applicants receiving guiding tenure maps.	
•	LRMP (CC) Target: 100% (implied).		
Im	plementation Indicator: % of affected trappers an	d guides contacted prior to development.	
•	LRMP (CC) Target: 100% (implied)		
Im	plementation indicator: strategies to protect guidi	ing infrastructure in forest stewardship plans.	
•	LRMP (CC) Target: completed		
3	Minimize conflicts between hunting, trapping,	Mapped guide outfitter tenure boundary locations will be provided to land and resource developers (CC p63).	Developers receive guiding
	fishing, guide outfitting and other uses on the land base (CC p63).	Ensure non-exclusive tenures such as hiking & skiing consider guide outfitting and trapline tenures prior to issuance (CC p63).	territory maps.
	ини оные (СС роз).		Tenure applicants receive

S	Objective	Strategy	Implementation indicator	
		Contact affected trap line users prior to new development; guide outfitters will be notified in a timely manner through their industry associations of impending land and resource developments within their tenured areas (CC p63).  The protection of guide outfitter tenured improvements will be incorporated into landscape, forest development and other applicable lower level plans (CC p63).  Ensure First Nations and local community issues and roles in guide outfitting, hunting and trapping activities are addressed in tenuring, permitting and planning processes (CC p63).  Forest licensees, land and resource developers and hunters, trappers and guide outfitters will be encouraged to work co-	guiding territory maps.  Guiding infrastructure protection measures described in plans.  Proportion of trappers and guides contacted.  Presence of consultation	
_ D	esource/tenure allocation—transino	operatively to accommodate all activities (CC p63).	policy?	
Resource/tenure allocation—trapping and guiding Set higher priorities for First Nations and local communities to access hunting, trapping and guiding tenures.				
This is a sub-objective of Promote Plan Area resource development by local individuals and communities (G2G).				
}e	e also Objectives related to general human well-be	ring (Resource/tenure allocation section, p.135).		
n	plementation indicator: % of trapping and guiding	tenures held by coastal people (by community or First Nation and by tenure type).		
•	LRMP (CC) Target: priority for First Nations an	d local communities.		
3	See Harvesting opportunity section above (p.138).	[Provide] opportunities and priorities for First Nations and local communities to access hunting, unencumbered trapline and guide outfitter tenures (CC p62)	Opportunities for tenures.	
		• All trapline opportunities will be made known to First Nations and First Nations interests and needs will be considered when		

#### Resource/tenure allocation--First Nations sustenance

First Nations have access to sustenance harvesting (EBMH).

See also Objectives related to general human well-being (Resource/tenure allocation section, p.135).

No strategies.

Assessment or plan: Review of wildlife allocation policies (CC).

3	First Nations have access to sustenance	No strategies.	
	harvesting (EBMH p34; CC p62).	Current policies regarding allocation of wildlife and bird species to First Nations will be reviewed (CC p62).	
		• A sustainable allocation of wildlife resources will incorporate First Nations' wildlife needs for food, social and ceremonial	
		requirements (CC p62).	

determining transfer of trapline tenures (CC p63).

# Sustainable populations

Maintain healthy populations/sub-populations of harvested fish and wildlife (EBMH).

See also Objectives related to terrestrial ecological integrity (Habitat for rare and focal species section, p.104) and Objectives related to specific rare and focal species (Mountain goat section, p.114, and Moose and blacktailed deer section, p.115).

S Objective Strategy Implementation indicator

Implementation indicator: % of wildlife populations threatened by hunting that are protected by access restrictions.

• LRMP (CC) Target: to be determined by consultation with First Nations and local communities.

Implementation indicator: % of significant fishing, hunting and trapping areas protected with no-development buffers or special management provisions.

EBMH/CC Target: to be determined by local users.

Implementation indicator: funding for monitoring and enforcement of hunting, trapping and guiding.

• LRMP (CC) Target: adequate funding.

Assessment or plan: Sustainable harvest plan based on precautionary limits, by species (EBMH, CC).

3 Maintain healthy populations/sub-populations of harvested fish and wildlife (EBMH p34)

Do not exceed sustainable harvest levels (EBMH p34); harvesting of fish and wildlife populations/sub-populations are within the carrying capacity of the ecosystem and will not exceed sustainable harvest levels (CC p62); Maintain healthy populations/sub-populations of harvested fish and wildlife (CC p63)

Control access on roads where hunting activities is a concern to wildlife populations, in consultation with First Nations and local communities (refer to Access section) (CC p63).

Significant fishing, hunting and trapping areas are protected with a no-development buffers or special management provisions that maintains areas as agreed to by local users (EBMH p53, CC p63)

Ensure that adequate resources are made available to monitor hunting, trapping and guide outfitting activities and enforce legislation (CC p63).

- Establish precautionary harvest levels for fish and wildlife (EBMH p34, p44); establish and maintain precautionary allocations for fish and wildlife use (CC p63).
- Trapping, hunting, and guide outfitting will be encouraged to continue sustainable practices through education programs and adoption of new trapping technologies (CC p63).
- All trappers (First Nation & non-First Nations) will be encouraged to forward fur harvest information to province (CC p63).

Precautionary harvest plan (CC).

Proportion of high risk populations protected by access restrictions (CC).

Proportion of significant fishing, hunting trapping areas reserved.

Funding for monitoring and enforcement (CC).

#### Inventory, research and monitoring

Improve inventories of harvesting activity and of harvested populations.

This sub-objective is part of Maintain healthy populations/sub-populations of harvested fish and wildlife (EBMH).

No strategies.

Assessment or plan: Information-sharing agreement for hunting, guide outfitting and trapline information (CC); trapline inventory (CC); hunting, fishing and trapping activity study (CC); synthesis of wildlife and fresh-water fish harvests (CC); improved wildlife habitat inventories and population estimates (CC).

3 Improve hunting, trapping, fishing and guide outfitting information management (CC p63).

Refine wildlife habitat inventories and subpopulation estimates (EBMH p44)

#### No strategies

- o An information sharing agreement will be developed on hunting, guide outfitting and trapline information... (CC p63).
- o Inventory and map existing non-native trap lines (CC p63); all existing First Nations traplines will be identified and trapline mapping will be improved (CC p63).
- o Inventory local hunting, fishing and trapping activities (CC p63) [and] sites (EBMH p53).
- o Collate wildlife harvest and fresh water fish catch information (EBMH p34, p44, CC p63).
- o Refine wildlife habitat inventories, population estimates (CC p63).
- Include traditional and local knowledge in inventories and population estimates (CC p63).

# Objectives related to non-timber forest products<sup>149</sup>

S	Objective	Strategy	Implementation indicator
N	on-timber forest product sector gro	owth and diversity	
Ma	aintain viable, diversified and profitable businesse	s in the non-timber harvest sector (EBMH).	
Sec	e also Objectives related to general human well-be	eing (Economic growth and diversity, p.131)	
No	strategies.		
As	sessment or plan: inventory of timber and non-tim	nber harvesting interests (EBMH).	
3	Maintain viable, diversified and profitable businesses in the non-timber sector (EBMH p44, p54); develop policy and guidelines to manage for a viable and sustainable non-timber forest products industry (CC p59); maintain opportunities for NTFP industries in a manner consistent with EBM (NC p181)	No strategies.  • Inventory timber and non-timber harvesting interests (EBMH p44); inventory and map timber harvesting interests and non-timber harvesting potential (EBMH p44).	Inventory of timber and non-timber harvesting interests.
De	evelop new markets for non-timber forest products	s (EBMH).	
No	o strategies		1
3	Develop new markets for non-timber forest products (EBMH p44).	See strategies and guidance under research and development below (p.143).	
	arvesting opportunity aintain a diversity of harvesting opportunities for a	non-timber forest products (EBMH).	
Im	plementation indicator: restrictions on harvesting	pine mushrooms in Tweedsmuir Park.	
•	LRMP (CC) Target: 0 restrictions.		
As	sessment or plan: non-timber forest product inven	ttories (including, pine mushrooms, plants appropriate for cultural use and cedar suitable for cultural use) (CC).	
3	Maintain a diversity of harvesting opportunities for non-timber forest products (EBMH p34).	Harvesting of pine mushrooms is allowed within Tweedsmuir Park (CC p61).work through the next Tweedsmuir Park management plan review process to enable the harvesting of pine mushrooms (CC p61).  • The province should do a legal review of aboriginal rights of the First Nations rights to harvest mushrooms in Tweedsmuir	Pine mushroom harvesting allowed in Tweedsmuir.
	Develop policy and guidelines to manage for a viable and sustainable non-timber forest products industry (CC p59).	<ul> <li>Park (CC p61).</li> <li>Large stands of identified yew trees may be managed for non-timber forest product harvesting (CC p59).</li> <li>Tenure holders and operators have sufficient access to resources (EBMH p34); maintain viable harvesting opportunities in operable watersheds (EBMH p44).</li> <li>Integrate and coordinate activities between resource users to the mutual benefit of all (CC p60).</li> </ul>	

S	Objective	Strategy	Implementation indicator
		<ul> <li>Co-ordinate road development and access with harvesting of non-timber forest products and other uses (timber harvesting) (CC p60).</li> <li>The province will work with the First Nations, local communities and forest licensees to coordinate the salvage of non-timber forest products from within timber harvest areas (such as yew trees, conks, burls, and cypress cants) (CC p59).</li> <li>Landscape unit planning and other lower level planning initiatives address non-timber forest products (CC p60); integrate [pine mushroom] information into various levels of forest management plans (CC p59).</li> <li>The harvest of botanical forest products is supported through community driven educational programs, permitting systems and monitoring (CC p60).</li> <li>Refine non-timber inventories (EBMH p44); promote the development of information systems, including inventories, for non-timber forest products (including maps) (CC p60); identify pine mushrooms areas with First Nations and local communities (CC p59); the province will work with First Nations and forest licensees to identify areas within the forested land base containing tall, straight, cedar trees of appropriate grain and age for First Nations cultural use (CC p59); develop procedures for the identification of areas of importance that provide plant species essential to First Nation interests (CC p60).</li> </ul>	

#### Resource/tenure allocation

Develop policy and guidelines for harvesting non-timber forest products that meet First Nation and local communities medicinal, food, ceremonial and cultural requirements.

This sub-objective is part of Recognize and accommodate aboriginal rights and title (EBMH).

See also Objectives related to general human well-being (Resource/tenure allocation section, p.135, Health services section, p.126, and Meeting needs section, p.130).

Implementation indicator: % of area available for plant harvesting by First Nations and local communities.

• LRMP (CC) Target: 100% of plan area

Implementation indicator: protocols with First Nations addressing management of non-commercial, non-timber forest products.

• LRMP (CC) Target: promote the development of protocols.

3	Develop policy and guidelines to meet First	First Nations and local communities harvesting of plants will be maintained on all land within the plan area, including within	Plant harvesting area
	Nation and local communities medicinal, food,	existing or future parks, protection areas and biodiversity areas (CC p60).	Protocols
	ceremonial and cultural requirements (CC p60).	Promote the development of protocol agreements with First Nations for medicinal, food, ceremonial and cultural non-timber forest products harvesting or development (CC p60). protocols will be developed with First Nations to enable forest licensees to	
	Recognize and accommodate aboriginal rights and title (EBMH p33).	accommodate and plan for use of plant species for medicinal and food purposes by First Nations, including "garden plots" and berry orchards (CC p60).	
		Preference should be given to First Nations for yew wood allocation (CC p59).	

#### Harvest rate

Do not exceed sustainable harvest levels (EBMH).

Implementation indicator: amount (volume or area) harvested per decade, by product type and quality.

• EBMH target: estimated sustainable amount.

\$ S	Objective	Strategy	Implementation indicator
	Do not exceed sustainable harvest levels (EBMH p34); a sustainable supply of non-timber forest products is maintained(CC p59).	Harvest levels over ten year planning period are sustainable (EBMH p34); manage areas with abundant supplies of plants used by First Nations and local communities for medicinal, food, ceremonial and cultural purposes for sustainable use (CC p60); options will be explored for the regulation of non-timber forest products harvesting at sustainable levels (CC p60).  Harvest profile over ten year planning period reflects available inventory profile (EBMH p34).	Ten year harvest level.  Ten year harvest profile.

#### Forest-product productivity

Maintain the productivity of harvest sites.

Or Maintain forest productivity (EBMH).

Implementation indicator: % of degraded ecosystems treated.

• LRMP (CC) Target: initiate rehabilitation program.

3 <i>Maintain forest productivity (EBMH p34);</i>	Initiate a rehabilitation program designed to restore ecosystems used by First Nations or local communities for non-timber	Rehabilitation program
maintain site productivity and natural species	forest products harvesting, in areas where they are diminishing (CC p60).	
mix (EBMH p54).	<ul> <li>Forest licensees are encouraged to employ silvicultural practices that maintain yew trees and other non-timber forest product species (e.g. Single tree retention) by allowing flexibility in forestry prescriptions to encourage NTFP production (CC p59).</li> <li>The development and use of innovative practices, such as controlled fire, may be used to maintain opportunities for the production and harvesting of non-timber forest products (CC p60)</li> </ul>	

### Forest-product contamination

Minimize pesticide-contamination of non-timber forest products.

This is a sub-objective of Maintain viable, diversified and profitable businesses in the non-timber harvest sector (EBMH).

Implementation indicator: % of sites with NTFPs and pests or weeds that are treated with pesticides.

• LRMP (CC) Target: decreased use of pesticides.

3	Pesticide use in areas of importance for non	Increase use of non-pesticides alternative methods for pest and weed control (CC p60).	Pesticide treatments.
	timber forest products will be avoided in order to eliminate contamination (CC p60).	• Ensure First Nations, local government and communities are provided opportunities to be consulted on the development of pesticide management plans and/or permit applications and that concerns and interests are addressed (CC p60).	

### Research and development

Conduct research and development studies.

This is a sub-objective of Maintain viable, diversified and profitable businesses in the non-timber harvest sector (EBMH).

Implementation indicator: funds allocated to lobbying federal government for assistance in developing NTFP industry.

• LRMP (CC) Target: sufficient funds to allow lobbying (implied).

Implementation indicator: funds for new NTFP research and development centre.

S	Objective	Strategy	Implementation indicator		
•	LRMP (CC) Target: sufficient to establish centre (no specific amount).				
In	nplementation indicator: funds for research program	n studying cultivation of NTFPs.			
•	LRMP (CC) Target: sufficient to establish resear	rch program (implied).			
	ssessment or plan: catalogue of commercially avail (C).	able non-timber forest products (CC); literature review of existing NTFP research, by product (CC); study describing potential man	rkets for NTFPs, by product		
3	Conduct research and development for non-	Lobby Federal government for financial assistance to develop the non-timber forest products industry (CC p61).	Effort lobbying.		
	timber forest products, uses and markets (CC p60).	Establish a research and development centre in the plan area (centre of excellence) (CC p61).	Research and development		
		Research potential cultivation techniques (e.g. Greenhouses) and provide the information to First Nations and local communities (CC p61).	centre.  Cultivation research program.		
		<ul> <li>Catalogue current non-timber forest products commercially available (CC p60).</li> <li>Conduct a literature review of existing research (CC p61).</li> <li>Conduct market research for non-timber forest products (CC p61).</li> </ul>			
E	ducation and training				
Cı	reate an educational awareness program for non-tin	nber forest products.			
Tł	nis is a sub-objective of Maintain viable, diversified	d and profitable businesses in the non-timber harvest sector (EBMH).			
Se	See also education and training in Objectives related to general human well-being (p.136).				
Implementation indicator: funding for NTFP awareness program.					
•	• LRMP (CC) Target: sufficient (implied).				
3	No objectives for education.	Create an educational awareness program for non-timber forest products (CC p61).			
		• The harvest of botanical forest products is supported through community driven educational programs (CC p60).			

# Objectives related to forestry and timber 150.

S Objective	Strategy	Implementation indicator			
	Forest sector growth and diversity.  Inintain viable, diversified and profitable businesses in the timber sector (EBMH).				
See also Objectives related to general	numan well-being (Economic growth and diversity, p.131).				
No strategies.					
Assessment or plan: inventory of timb	er and non-timber harvesting businesses and interested parties (EBMH).				
Diversify the economies of First N other communities in the plan are HFN pC4, KNT pG4, GFN p G4)					
Maintain viable, diversified and p businesses in the timber non-tin value-added sectors (EBMH p44,	ber and Inventory timber and non-timber harvesting interests (ERMH p44); inventory and man timber harv	resting interests and non-			
Maintain an economically viable, sustainable forest sector (CC p67, economically sustainable and visector(NC p180); increase oppolocal economic diversification and added processing in the forest ind	<ul> <li>Encourage viable, diversified and profitable businesses in the timber and non-timber sectors (CC p)</li> <li>First Nations, governments and Licensees coordinate and sustain viable forestry business opportunities for value-ustry (NC</li> <li>Encourage viable, diversified and profitable businesses in the timber and non-timber sectors (CC p)</li> <li>First Nations, governments, and licensees to work cooperatively to develop and sustain viable forestry business opportunities for possible po</li></ul>	nities (EBMH p34); First usiness opportunities (CC restry businesses and			
p181)  Realize the potential of lands designates forestry to contribute economic be First Nations, local communities, businesses and provincial interest	<ul> <li>Need for a market-based stumpage system that incorporates the cost of EBM (NC p180).</li> <li>Monitor both direct and indirect gains from the forest industry to the North Coast and BC (NC p180).</li> </ul>	70).			
Ensure that forestry activities at a done in a cost-effective manner (N p68)	• Encourage the sorting, processing and marketing of forest products to extract the highest value from	ility of EBM forestry 168). 168). 16ment, revenue, cultural 16tomer needs (CC p68). 16tel plans (CC p68). 16tructure and silviculture 16timproving efficiency of			

S	Objective	Strategy	Implementation indicator	
		Assess the economic viability of timber harvesting opportunities and integrate with EBM planning at all scales (CC p68).		
In	vestment			
En	courage investment and innovation.			
Th	s is a sub-objective of Maintain viable, diversified	d and profitable businesses in the timber sector (EBMH).		
Sec	also Objectives related to general human well-be	ring (Investment section, p.132).		
No	strategies.			
3	Create incentive programs to encourage investment and innovation by the forest industry (CC p68)	No strategies.		
De	erketing  velop new markets for non-timber forest products  s is a sub-objective of Maintain viable, diversifier	. d and profitable businesses in the timber sector (EBMH).		
	strategies.	a und promuter ousmosses in the timber sector (EBIVIII).		
3	Develop new markets for non-timber forest	No strategies.		
5	products (EBMH p44).	Two strategies.		
Há	rvesting opportunity			
Ma	intain a diversity of harvesting opportunities for t	imber (EBMH).		
No	strategies.			
As	sessment or plan: report describing harvesting opp	portunities for timber and non-timber forest products (EBMH).		
Assessment or plan: access management plan (CC)—see Objectives related to access (p.169).				
3	Maintain a diversity of harvesting opportunities for timber(EBMH p34)	No strategies.  • Assess harvest opportunities and profile (EBMH p44); assess access to timber supply across the land base outside of Protection Areas, Biodiversity Areas and Special Forest Management Areas (NC p139).  • Tenure holders and operators have sufficient access to resources (EBMH p34).  • Maintain viable harvesting opportunities in operable watersheds (EBMH p44).		
Re	Resource/tenure allocation			

Increase the share of forest development tenures held by coastal people and communities.

This is a sub-objective of Promote Plan Area resource development by local individuals and communities (G2G).

See also Objectives related to general human well-being (Resource/tenure allocation section, p.135).

S	Objective	Strategy	Implementation indicator		
Im	Implementation indicator: proportion of tenures held by coastal communities and First Nations, by community and First Nation.				
•	• LRMP (NC) target: timely establishment of new tenures.				
As	sessment or plan: report describing potential for no	ew community and First Nation tenures (CC).			
3	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 North/Central Coast people through, but not exclusive to: (a) forest harvesting, (b) manufacturing and (c) value-added product development initiatives (NC p140, CC p69).  Promote tenure allocations that foster stability for forest development opportunities and that maximize potential benefits for First Nations, communities, forest industry and the province (CC p68)  Support a forest sector that promotes stability and long-term benefits to local communities (NC p180)	Promote timely establishment of First Nation and community tenures (CC p68); [Implementation indicator is] number and success of community tenures (NC p140).  • Province to work with local communities and First Nations to identify area based tenure opportunities (CC p69)  • Government to endorse local initiatives for community forests through joint partnership programs (NC p180).  • Accommodate new tenure and existing holders in a fair and equitable manner (CC p68).  • Adjust Forest tenure and chart allocation as required based on the land use zone map and LRMP resource management recommendations including community forest interests (CC p68).  • Ensure equitable treatment of all participants in the forest economy (NC p180); balance local interests and employment, including First Nations, with business interests (NC p180).	Number of community tenures awarded.		
	arvest rate not exceed sustainable harvest levels (EBMH).				
Im	plementation indicator: amount harvested per deca	nde.			
•	G2G Target: stable or increasing (as bounded by EBMH Target: estimated sustainable harvest lev				
Im	plementation indicator: harvest profile.				
•	EBMH Target: reflects inventory profile.				
As	sessment or plan: updated timber (including species	es and volume) and non-timber inventories (EBMH), updated operability estimates (EBMH); timber supply analysis (EBMH).			
2	See objective under Forest sector growth and diversity (p.145).	Timber harvest stable or increasing (as bounded by AAC) (TP pC4, HFN pC4, KNT pG4, GFN p G4).			
3	Do not exceed sustainable harvest levels	Harvest levels over ten year planning period are sustainable (EBMH p34).	Ten year harvest level.		
	(EBMH p34).	Harvest profile over ten year planning period reflects available inventory profile (EBMH p34).	Ten year harvest profile.		
	Maximize/maintain a sustainable annual harvest and operationally feasible timber supply over the short and long term in a manner consistent with EBM and TEK (NC	<ul> <li>Refine timber and non-timber inventories (EBMH p44)</li> <li>Inventory operable timber landbase, species profile and volume (EBMH p34); refine operable timber land base, species profile, and volume inventories as necessary (EBMH p44); refine operability and harvesting landbase definition (EBMH</li> </ul>			

Ī	S	Objective	Strategy	Implementation indicator
		p139; CC p67).	<ul> <li>p44).</li> <li>Assess current and potential timber supply requirements and options (EBMH p34) considering EBM objectives and targets (EBMH p34); conduct periodic timber supply reviews in a manner consistent [with] the EBM handbook(CC p67)</li> </ul>	

# Forest productivity

Maintain the productivity of harvested sites.

Or Maintain forest productivity (EBMH).

See also Objectives for terrestrial ecological integrity (Tree species composition section, p.107).

Implementation indicator: % of harvested area classified as regenerating (including pre-1987 backlog as separate category).

- EBMH target: existing silvicultural requirements.
- LRMP (CC) target: all recently harvested sites; backlog where practicable.
- LRMP (NC) target: all watersheds harvested pre-1987 (backlog)

Implementation indicator: % of harvested area classified as free growing (including backlog as separate category).

- EBMH target: existing silvicultural requirements.
- LRMP (CC) target: all recently harvested sites; backlog where practicable.
- LRMP (NC) target: all watersheds harvested pre-1987 (backlog)

Implementation indicator: area treated by type of intensive silviculture.

• LRMP (CC) Target: sufficient to enhance timber production.

Implementation indicator: % of degraded sites rehabilitated.

• LRMP (CC) Target: 100% (implied).

Market Control (EDMII 24)		
Maintain forest productivity (EBMH p34);	Meet silvicultural requirements for regeneration, forest health and growth (EBMH p54); sites will be reforested with a mix of	Species, stocking and growth
naintain site productivity and natural species	ecologically appropriate tree species, to minimize risk of quality loss through pest or mechanical damage (CC p68).	rate of regenerating stands
nix (EBMH p54); maintain and enhance the health and productivity of the forest harvesting	Enhance timber production through silviculture and management practices that increase stand yields and values (CC p69).	Area and type of intensive
and base (CC p68)	Rehabilitate or restore areas degraded by past forest activities (CC p69).	silviculture/management.
	Allocate appropriate funding to reforest the backlogged Not Satisfactorily Restocked (NSR) areas where practicable (CC p68); restore developed watersheds which were harvested pre- 1987 and are currently not satisfactorily restocked (NC p140);	Proportion of degraded area treated.
	[restore] all watersheds harvested pre-1987 to satisfactorily restocked (NC p140); [Implementation indicator is] number of	Number of watershed
	watershed restoration programs implemented in the North Coast (NC p140).	backlog reforestation
		programs implemented
r	nix (EBMH p54); maintain and enhance the ealth and productivity of the forest harvesting	Enhance timber production through silviculture and management practices that increase stand yields and values (CC p69).  Rehabilitate or restore areas degraded by past forest activities (CC p69).  Allocate appropriate funding to reforest the backlogged Not Satisfactorily Restocked (NSR) areas where practicable (CC p68); restore developed watersheds which were harvested pre-1987 and are currently not satisfactorily restocked (NC p140); [restore] all watersheds harvested pre-1987 to satisfactorily restocked (NC p140); [Implementation indicator is] number of

S	Objective	Strategy	Implementation indicator
		69	
	esearch and monitoring	forest practices and to provide a broader range of forest products.	
	·		
		l and profitable businesses in the timber sector (EBMH).	
Im	plementation indicator: funding for research related		
•	LRMP (CC) Target: amount needed to address E		
Im	plementation indicator: funding for incentive progr	ram to encourage industrial innovation.	
•	LRMP (CC) Target: sufficient to establish progra	am (implied).	
3	Monitor science-based forestry practices resulting from EBM allowing for continuous improvement and adaptive management (NC p140).  Research and development will be directed towards improving forest practices and providing a broader range of forest products	Allocate appropriate funding to effectively address research needs for implementation of EBM (CC p69); [Implementation indicator is] number of local research programs which are directly related to ecological and economic drivers of EBM; [Target is] number of research programs needed to address targets of EBM (NC p140).  Create incentive programs to encourage investment and innovations by the forest industry (CC p68); encourage innovative technology and planning to increase forest productivity and the operability of the forest land base (CC p69).  Adaptive management, as referred to in Section 6 of the LRMP document, can be used to test and improve forest operations	Research program.  Incentive program.
	(CC p69)  ommunity influence sure that First Nations, communities and the public	c can influence forest development.	
	is is a sub-objective of the core EBM objectives to astal British Columbia, including aboriginal and no	Recognize and accommodate aboriginal rights, title and interests (EBMH p5) and to Ensure a fair distribution of benefits, costs and on-aboriginal people (EBMH p5).	d risks across all parts of
Se	e also Objectives related to general human well-be	ing (Community influence section, p.129).	
No	strategies.		
As	ssessment or plan: pine mushroom inventory (CC).		
3	Ensure that First Nations, communities, and members of the public have opportunities to provide input into forest resource development plans (CC p67).	No strategies.  o Identify pine mushrooms areas with First Nations and local communities and integrate this information into various levels of forest management plans (CC p59).	
	First Nations and local community issues and roles must be addressed in forestry tenuring and allocation, permitting, policy and planning processes (CC p68).		

# Objectives related to mineral and energy resources<sup>151</sup>

S	Objective	Strategy	Implementation indicator		
Mi	lineral and energy sector growth and diversity				
De	evelop viable, diversified and profitable businesses in the mining and energy sector (EBMH).				
See	e also Objectives related to general human well-b	eing (Economic growth and diversity, p.131).			
No	strategies.				
2	Diversify the economies of First Nations' and other communities in the plan area (TP pC4, HFN pC4, KNT pG4, GFN pG4).	No strategies.  • Upward trend in mineral exploration and development expenditures (TP pC4, HFN pC4, KNT pG4, GFN p G4).			
3	Develop viable, diversified and profitable businesses in the mining and energy sectors (EBMH p44, p54); enhance human well-being [through mineral and energy development] (EBMH p44, p54).	No strategies.  • Local communities require the availability of alternative energy sources for subsistence purposes (NC p180).			
	Encourage a variety of mineral, aggregate and energy-based economic opportunities (NC p179); encourage a variety of low-impact energy sources (NC p180)				
	esource extraction opportunity ploration and development is consistent with land	l use plans (EBMH).			
	strategies.				
Ass	sessment or plan: access management plan (CC)-	—see Objectives related to access (p.169).			
3	Allow access for mineral, aggregate or energy activities outside of protected areas (EBMH p34); allow access, for mineral, aggregate or energy activities, across the land base outside of Protection Areas that exclude mineral development (NC p125).  Exploration and development is consistent with land use plans (EBMH p34); develop subsurface [and] aggregate resources [including coastal] while minimizing the negative impacts on other activities, values and interests (CC p64, p65).  allow aggregate and subsurface resource	<ul> <li>No Staking Reserves for mineral and placer tenure will be periodically reviewed to assess the opportunity to change them (CC p64).</li> <li>Provide opportunities for shore-based infrastructure to support approved upland or marine-based subsurface, aggregate and</li> </ul>	d		

exploration and development activities [in areas with formal environmental and wildlife designations] (CC p65)	<ul> <li>access requirements; where other areas exist that can achieve the objectives of the above designations, avoid placing designations over existing aggregate and subsurface tenures and permits (CC p65); utilize co-operative, flexible management approaches including modification of designated boundaries and the deletion or moving of designated areas if required (CC p66).</li> <li>Operations will be permitted [in identified environment and wildlife areas] in a manner consistent with EBM and maintaining long-term biological values (CC p65).</li> </ul>	
Collaboration amongst users		
Promote collaboration amongst developers.		
This sub-objective is part of Diversify the economies	of First Nations' and other communities in the Plan Area (G2G).	
See also Collaboration amongst users sections in Obj	ectives related to harvesting fish and wildlife (p.138), Objectives related to tourism and outdoor recreation (p.157) and Objectives re-	related to scenery (p.166).
No strategies.		
3 No objectives.	No strategies.	
	<ul> <li>Encourage subsurface and commercial recreation tenure holders to advise each other of operational activities, in order to minimize the potential for impacts to their respective businesses (CC p65).</li> <li>Incorporate subsurface and aggregate resource values and interests into landscape and local level planning (CC p65).</li> </ul>	
Community influence		
Ensure that First Nations, communities and the public	c can influence development.	
This is a sub-objective of the core EBM objective to	Ensure a fair distribution of benefits, costs and risks across all parts of coastal British Columbia, including aboriginal and non-abori	iginal people (EBMH).
See also Objectives related to general human well-be	ing (Community influence section, p.129).	
No strategies.		
3 Ensure that affected communities and members of the public have opportunities to provide input into major subsurface resource [and]aggregate development proposals through meaningful public processes (CC p64, p65).	No strategies.	
First Nations influence		1

Ensure First Nations rights and title and interests are respected and accommodated by local, provincial and federal governments, and by industry.

This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests (EBMH).

Implementation indicator: % of development permits reviewed by affected First Nation.

• LRMP (NC) Target: 100% (implied)

Implementation indicator: proportion of development projects with appropriate consultation.

• LRMP (NC) Target: 100% (implied)

3	Ensure First Nations Rights and Title and
	interests are respected and accommodated by
	Ensure First Nations Rights and Title and interests are respected and accommodated by local, provincial and federal governments (NC
	<i>p126)</i>

Ensure that industry obligations related to consultation and accommodation of FN interests are met (NC p126).

[Ensure] First Nation involvement in the permitting of all projects; First Nations should jointly review permit applications for projects within their traditional territories, along with local, provincial and/or federal authorities... (NC p126).

[Ensure an adequate] level of consultation and accommodation (NC p126); [Target is] legal objectives met and positive relationships developed (NC p126).

Proportion of projects jointly reviewed

Level of consultation and accommodation.

#### Local economic benefit

Provide economic benefits to First Nations, and local residents.

This is a sub-objective of the core EBM objectives to Ensure a fair distribution of benefits, costs and risks across all parts of coastal British Columbia, including aboriginal and non-aboriginal people (EBMH p5) and to Recognize and accommodate aboriginal rights and title and interests (EBMH).

See also Objectives related to general human well-being (Local economic benefit section, p.133).

No strategies.

Assessment: a plan proposing legacy projects to be funded by mining (implied; CC).

3 Provide opportunities for First Nations and local residents to benefit from subsurface and aggregate resource development (CC p66); provide for economic benefits for First Nations governments from mineral, aggregate and energy developments (NC p179). Encourage a variety of mineral, aggregate and energy-based economic opportunities that are consistent with ecosystem-based management and that promote stability and long-term benefits to local communities (NC p179).

No strategies.

- o Work with First Nations and local communities to identify legacy opportunities made feasible through mining (CC p66).
- Ensure that mineral, aggregate and energy development recognizes the economic component of First Nations rights and title (NC p180).
- Prior to developing a mineral, aggregate or energy project, a company must work with the [affected] First Nation... to come up with... agreements which address... joint venturing and partnership opportunities (NC p179).
- Prior to developing a mineral, aggregate or energy project, a company must work with the [affected] First Nation... to come up with... agreements which address, employment, contracting... (NC p179).
- Increase the involvement of First Nations and local residents in subsurface and aggregate exploration and development activities (CC p66); maximize the use of First Nation and local facilities and support services in exploration and development (CC p66); increase... employment of First Nations and local residents in subsurface and aggregate resource developments (CC p66).

### Education and training

Provide education opportunities to First Nations and local residents.

This sub-objective is part of the core EBM objective to Achieve the health, wealth and educational status required for a high quality and secure life (EBMH).

See also education and training in Objectives related to general human well-being (p.136).

Implementation indicator: # of trainee positions offered per year.

- LRMP (CC) Target: increase above current level (implied).
- 3 Provide opportunities for First Nations and local residents to benefit from subsurface and aggregate resource development (CC p66).

Increase the training... of First Nations and local residents in subsurface and aggregate resource developments (CC p66).

Training program

## Inventories, research and monitoring

Conduct research and monitoring studies.

This is a sub-objective of Develop viable, diversified and profitable businesses in the mining and energy sector (EBMH).

No strategies.

Assessment or plan: inventories of subsurface and aggregate resources (EBMH/CC); subsurface- and aggregate-resource marketing study (CC); inventory of claims and ownership; inventory of capital assets related to mineral and energy development.

3 Enhance the knowledge of geology (e.g. through scientific research, geological mapping, geophysical and geochemical studies, technical workshops) to support opportunities for geological resource discovery and development, and informed resource management decision-making (CC p66).

No strategies.

- o Estimate resources and reserves (EBMH p34, p44, p54); identify/inventory aggregate resources (CC p65); upgrade and maintain provincial public geo-science databases on subsurface resources for geotechnical, geo-hazard, and resource management needs (CC p66); undertake inventories... of potential aggregate and subsurface resources... (CC p66).
- o Undertake marketing studies of potential aggregate and subsurface resources (CC p66).
- o Inventory claims and ownership (EBMH p34).
- o Inventory capital inventory (roads, infrastructure, processing facilities and abandoned sites) (EBMH p34).
- ... ensure exceptional communication with First Nations and local government regarding [inventory and marketing studies] (CC p66).
- Ensure that provincial public geo-science databases are easily accessible, available to all and cost effective (CC p66).

## Ecological integrity of mine sites

Mining, from exploration to post-closure, maintains ecological integrity (EBMH).

Implementation indicator: % of developments having CEEA screenings and full CEEAs.

• EBMH Target: 100% screened (implied).

Implementation indicator: # of regulation infractions.

• LRMP (NC) Target: no regulation infractions.

3 Mining, from exploration to post-closure, maintains ecological integrity (EBMH p44, p54).

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 (NC p125); develop coastal subsurface and aggregate resources while minimizing impacts on other resources, values and activities (CC p65).

Conduct exploration and development

Perform CEEA screening, full CEAA if necessary (EBMH p44, p54); project permitting complies with EEA and CEEA screening review (EBMH p44, p54).

[Target is] no infractions of regulations (NC p125); 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 (NC p125).

- Comply with industry best practices (EBMH p44, p54)<sup>152</sup>
- Mitigate impacts from projects and utilize environmentally responsible extraction and processing methods (CC p65)
- Minimize noise and dust from aggregate operations (CC p65).
- Promote planned, safe and environmentally responsible production of aggregate resources (CC p65); develop an Aggregate Management Plan where and if practicable (CC p65).
- Operations will be permitted [in identified conservation areas] in a manner consistent with EBM and maintaining long-term biological values (CC p65).

CEEA screenings and full CEEAs.

Number of regulation infractions.

activities in a way that minimizes impacts to critical habitats and wildlife (CC p65).

Prevent pollutants from subsurface resource developments [and] ...from aggregate development from entering watercourses and from negatively impacting groundwater resources (CC p65)

Minimize the risk to values identified by formal environmental and wildlife designations (e.g. Wildlife Habitat Areas, Old Growth Management Areas, Ungulate Winter Range) while allowing aggregate and subsurface resource exploration and development activities (CC p65).

# Ecological integrity—reclamation of mine sites

Restore the ecological integrity of all mineral, aggregate and energy development sites.

This is a sub-objective of Mining, from exploration to post-closure, maintains ecological integrity (EBMH).

Implementation indicator: # of finished mine and aggregate sites needing reclamation (including related infrastructure).

- LRMP (NC) Target: no sites requiring reclamation.
- LRMP (CC) Target: follow approved closure plans for existing sites; remediate abandoned sites if feasible
- B 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) (NC p126); mining, from exploration to post-closure, maintains ecological integrity (EBMH p44, p54)

[Minimize] the number of sites needing to be reclaimed (NC p126); [Target is] no closed or orphaned sites remaining that require reclamation (NC p126); ensure that lands disturbed by mining are reclaimed in accordance with an approved closure plan (CC p64); abandoned mine sites (sites where there is no owner or existing liability) will be remediated by industry and government, when and if feasible, where environmental or human health hazards are identified (CC p64); Ensure that lands disturbed by aggregate operations are reclaimed to safe and publicly acceptable end land uses that are consistent with local government bylaws and land use priorities (CC p65); ensure that performance bonds are commensurate with projected reclamation costs (CC p65).

- Ensure appropriate design, maintenance and reclamation of roads to minimize impacts on other values in accordance with best practices and mining specific legislation and regulation (CC p64); reclaim areas disturbed by exploration activities (e.g., exploration trails, trenches) and remove structures as soon as practicable after the work is completed (CC p64).
- Consider incentives for industry (e.g. financial, legal liability relief), to undertake reclamation of past activity, including 'orphaned' sites, when working in the vicinity (NC p.126).

Number of closed sites requiring reclamation.

## Visual impacts of mine sites

Minimize impacts to scenery.

This sub-objective is part of Conserve and/or enhance recreation resources (EBMH).

No strategies.

3	Minimize negative impacts to visual resources
	from subsurface and aggregate exploration
	and development in areas of high visual
	importance (CC p66). maintain natural
	scenic quality (EBMH p34)
	1 2 1

Develop coastal subsurface and aggregate resources while minimizing impacts on other resources, values and activities (CC p65).

No strategies.

- Employ exploration methods that have low impacts on visual resources where practicable.
- Incorporate visual resource management principles in mine review and approval processes (e.g., Regional Mine Development Review Committee and Environmental Assessment Office processes).
- Employ operational practices and techniques that maintain visual quality and that implement visual site management, where practicable, in an efficient and cost-effective manner.
- Restore visual quality to natural appearance upon cessation of operations.

# Objectives related to tourism and outdoor recreation<sup>153</sup>

S Objective	Strategy	Implementation indicator			
Tourism sector growth and diversity	ourism sector growth and diversity				
Develop and support viable tourism business opportu	unities (EBMH).				
See also Objectives related to general human well-be	eing (Economic growth and diversity, p.131).				
No strategies.					
Assessment or plan: study examining potential for bu	usinesses to serve recreating public (CC); mechanism for resolving conflicts between tourism and other sectors (CC).				
2 Diversify the economies of First Nations' and other communities in the Plan Area(s) <sup>154</sup> (TP pC4, HFN pC4, KNT pG4, GFN pG4).	No strategies.  • Upward trend in [tourism] room revenue (TP pC4, HFN pC4, KNT pG4, GFN pG4).  • Upward trend in tourism revenues (TP pC4, HFN pC4, KNT pG4, GFN pG4);  • [Indicator is] First Nation and local community tourism revenues and employment (4FN pC4)				
3 Develop and support viable tourism business opportunities (EBMH p34); develop and sustain tourism enterprises that support both business and cultural objectives (EBMH p53).  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 (NC p181).	<ul> <li>No strategies.</li> <li>Carry out an opportunities assessment study for establishment of commercial services businesses to serve the recreating public (CC p58).</li> <li> establish conflict resolution mechanism between operators and sectors (CC p58)</li> <li>Implementation and Management Committee to ensure the interests of other stakeholders are considered (CC p56). implementation and Monitoring committee (I&amp;M) to ensure that the tourism and recreation issues are addressed (CC p58).</li> <li> address and help resolve visual zoning and other management issues; recommend management strategies to government (CC p58).</li> <li>Encourage the development of facilities for providing food, fuel, beverages, supplies, repairs and related services at suitable locations on marine cruising routes (CC p57).</li> <li>Need to consider economic and environmental carrying capacity (NC p181).</li> </ul>				
Investment Promote investment in tourism. This sub-objective is part of Develop and support via	able tourism business opportunities (EBMH).				
See also Objectives related to general human well-be	eing (Investment section, p.132).				
No strategies.					
3 Attract investment and promote local ownership in the tourism industry (NC p182).  Encourage local employment opportunities in tourism by creating a positive and stable.	Promote partnerships and collaborative agreements between large and small [tourism] businesses (NC p182).				
tourism by creating a positive and stable investment climate (NC p182);					

# Collaboration amongst users

Facilitate communication amongst developers.

This sub-objective is part of Develop and support viable tourism business opportunities (EBMH)

See also Collaboration amongst users sections in Objectives related to harvesting fish and wildlife (p.138), Objectives related to mineral and energy resources (p.151) and Objectives related to scenery (p.166).

No strategies.

Assessment or plan: Directory of businesses and their geographic interests (NC; see indicator for consolidated, geo-referenced land-rights and interests in Industry consultation section of Objectives related to human well-being, p.129).

3 Industrial developers to engage in consultation with tourism operators and tenure holders to increase effectiveness of planning... (NC p182)

No strategies.

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 (NC p182).

# Tourism opportunity

Provide access to natural and cultural resources that support tourism.

This sub-objective is part of Develop and support viable tourism business opportunities (EBMH)

See also Objectives related to access (p.169).

No strategies.

Assessment or plan: site plans for tourist sites (NC); wildlife viewing site inventory (CC); resort site inventory (CC).

- 2 Promote cultural tourism (MA pC6)
- ... maintain and enhance opportunities for access to Tourism areas (NC p146); respect existing tenure commitments while providing opportunities for qualified new operators... (CC p56);

Ensure opportunities for air, water and land access for fixed-wing and rotary aircraft within all zoning designations in the plan area except ecological reserves and those designated as no-fly/prohibited areas (CC p56).

Maintain and enhance commercial and recreational sport fishing opportunities and experiences (CC p57).

... maintain opportunities for commercial bear viewing...(NC p 147).

• Include concept in application for National Historic Site Designation [for Port Essington] (MA pC6).

No strategies

- o ... site specific planning [will determine targets for] availability of access to tourism sites/areas, where this is consistent with objectives for other resource values (NC p146); ensure access is available to showcase special features, where appropriate (CC p55).
- o Identify sites with high wildlife viewing potential (CC p57).
- o Identify, classify and inventory potential resort sites (CC p56).
- encourage and promote establishment of new tourism operations in areas zoned with tourism and recreation priority (CC p56).
- Give priority for extensions to established commercial tourism operators where it can be demonstrated that the operators are in compliance with the terms of permits and approvals (CC p56).
- For guidance [about aircraft access] refer to the MWLAP Interim Wildlife Guidelines for Commercial Backcountry Recreation (CC p56); in those areas where conflicts between aircraft operators and other sectors occur, consult with stakeholders to develop solutions (CC p56).
- Encourage governments to work together to improve data collection management [regarding sport fishing] (CC p57).

## Recreation opportunity

Provide access to natural and cultural resources that support outdoor recreation.

No objectives in EBMH, G2G or MO.

See also Objectives related to access (p.169)

Implementation indicator: #, type and condition of recreation facilities.

• LRMP (NC) Target: maintain and increase.

Implementation indicator: accessibility of recreation sites, by access type (e.g., summer, winter, road, water) and site type (e.g., backcountry skiing trails, snow machining areas).

- LRMP (NC) Target: maintain and increase accessibility.
- LRMP (CC) Target: do not block access; provide access to special features.

Assessment or plan: site plans for recreation sites (NC)

- 3 ... promote and maintain opportunities for recreational access (NC p 130); ... ensuring public access to all recreation areas (CC p56); government to support infrastructure and services to maintain and enhance noncommercial recreation opportunities (NC p182).
  - ... promote recreation opportunities and access along Highway 16 corridor (NC p132).

maintain existing and increase new... 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. (NC p132); ensure access is available to showcase special features, where appropriate (CC p55); ensure boundaries and/or terms of land tenure do not block public access to recreational and industrial resources (CC p56).

- Recreation facilities and access to recreation sites.
- o ... site specific planning [will determine targets for] 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 (NC p130)
- Publicly-maintained facilities contribute positive perceptions and well-being of local recreationists and visitors to the area (NC p182).
- Through EBM supposed to leave as little footprint as possible—e.g., users take out own garbage (NC p 183).

# Diversity of outdoor experience

Manage land-based conditions to support a wide range of outdoor recreational and tourism activities and experiences.

This sub-objective is part of Develop and support viable tourism business opportunities (EBMH).

Implementation indicator: level of use and type of experience

- LRMP (NC) Target: see Table 24 (NC p148) for target levels and examples of appropriate types of use.
- Manage land-based conditions to support a wide range of outdoor recreational activities and experiences (NC p129)... [and] a wide range of culturally and ecologically appropriate tourism (NC p144); ensure that Parks, Protection Areas and other Crown lands with recreation and tourism values are managed ... for a range of recreational activities (CC p57).

[Maintain a] level of use and type of experience within Tourism areas [that is consistent with] Table 24 and Map 8 (NC p144).

- land use designations and associated regulations and guidelines... [should] ensure a spectrum of tourism/recreation opportunities, including the support of First Nations-led cultural and nature-based tourism [that is consistent] with Table 24 (NC p144).
- Maintain a diverse range of recreational fishing opportunities and develop new sports fishing opportunities (CC p57).

#### Semi-primitive experience

Maintain the quality of the recreation experience in identified areas (G2G).

Implementation indicator: road density.

G2G (MA) Target: zero on Kinahan, Lawyer and Rachael islands and in the Kennedy Island Protection Area.

Implementation indicator: area harvested or salvaged.

• G2G (MA) Target: zero on Kinahan, Lawyer and Rachael islands.

Implementation indicator: # of permanent, overnight, commercial, recreation facilities

G2G (MA) Target: zero in Kennedy Island and Lucy Islands Protection Areas; zero land-based in the Khutzeymateen Protection Area; one in Kinahan, Lawyer and Rachael Islands.

Implementation indicator: maximum size of commercial recreation groups.

• G2G (MA) Target: ten on Kinahan, Lawyer and Rachael Islands.

Implementation indicator: areas with sanitation facilities.

• G2G (MA) Target: establish facilities in Lucy Islands Protection Area.

Maintain the quality of the recreation experience [in Sommerville] (MA pC1), [on Kinahan, Lawyer and Rachael islands] (MA pC3) [and in Lucy Islands Protection Area] (MA pC5).

Maintain a semi-primitive recreation experience [on Kinahan, Lawyer and Rachael islands] (MA pC3).

Maintain... recreation... values within the [Khutzeymateen and Kennedy Island] Protection Area (MA pC5, pC7).

[Allow] zero... roads [on Kinahan, Lawyer and Rachael islands] (MA pC3)

Existing roads to be permanently deactivated upon completion of harvest [in the Kennedy Island Protection Area] (MA pC7).

[Allow] zero... commercial timber harvesting or salvage [on Kinahan, Lawyer and Rachael islands] (MA pC3)

[Allow] zero... permanent, land-based overnight commercial recreation facilities [in the Khutzeymateen Protection Area] (MA pC5); [Allow] zero... permanent overnight commercial recreation facilities [in the Kennedy Island Protection Area] (MA pC7); [For the interim, allow] zero... permanent overnight commercial recreation facilities [in the Lucy Islands Protection Area] (MA pC8); [Allow a] maximum of one... permanent overnight commercial recreation facility [on Kinahan, Lawyer and Rachael islands] (MA pC3)

Commercial recreation activities are to be limited to small groups (less than ten) [on Kinahan, Lawyer and Rachael islands] (MA pC3).

Establish sanitation facilities [in Lucy Islands Protection Area] (MA pC5).

- Implement guidelines for sanitation for all commercial recreation users [in Lucy Islands Protection Area] (MA pC5).
- [Allow] zero occurrence of unsanitary public waste [in the Lucy Islands Protection Area] (MA pC8)
- Rare... occurrence of conflict among users [in Sommerville, on Kinahan, Lawyer and Rachael islands, and in Lucy Islands Protection Area] (MA pC1, pC3, pC5).

Road length.

Road length.

Harvesting activity.

Number of recreation facilities.

Size of commercial recreation groups

Number of sanitation facilities.

#### Bear viewing

Maintain high quality bear viewing opportunities (G2G).

Implementation indicator: # of land-based bear viewing sites in Khutzeymateen

• G2G (MA) Target: one.

Implementation indicator: harvesting and log transportation activity between May 15 and October 15

• G2G (MA) Target: none within 2 km of Khutzeymateen Inlet, extending to Crow Inlet; none in Mouse Creek.

...minimize disturbance to... bear viewing activities [in] Somerville (MA pC1)

...maintain a high quality opportunity for bear viewing [in the Khutzeymateen Inlet Protection Area] (MA pC5).

[allow] one... land based bear viewing site [in Khutzeymateen](MA pC5).

No active logging or log transport... within 2 km of Khutzeymateen Inlet, extending to Crow Inlet, between May 15 and Oct 15; road construction permitted (MA pC1).

Logging in Mouse creek only acceptable when bears are not present at the estuary (October 15 to May 15) (MA pC5).

- Implement... bear viewing carrying capacity guidelines... by 2006 [in Khutzeymateen] (MA pC5).
- No noticeable impact... of logging in Mouse creek on bears (MA pC5).

#### Scenery

Maintain natural scenic quality (EBMH).

See also Objectives related to scenery (p.165)

No strategies here.

Assessment or plan: scenery plan with visual quality zones (EBMH); report on scenery management for air-based tourism (CC).

3 Conserve and/or enhance recreation resources (EBMH p34, p44); manage extractive resource developments near tourism resorts, and tourism and recreation sites... (CC p56).

Maintain natural scenic quality (EBMH p 34); ... maintain, enhance and protect... visual quality... (NC p129); maintain, enhance and protect the quality of experience in tourism areas (NC p145).

See strategies in Objectives related to scenery (p. 165).

- Establish visual quality zones...(territory scale; EBMH p 34); Scenic quality is addressed under Section 5.16: Visual Quality (NC p 129, p145).
- Use the Implementation and Monitoring committee to identify, classify, and update the visual management requirements pertaining to air-based tourism and recreation as use and social values change over time (CC p57).
- Establish effective visual buffers around tenured lodges, resorts and recreation sites through mutual cooperation of the tourism operator, or site manager and the resource extraction operator...(CC p56). [Resource development] proponents consult with communities, First Nations and the Province on resource development proposals near tourism and recreation sites (CC p56); inform tenured lodge and resort owners of proposed extractive resource developments, including forest development plans that will be visible or audible from their resorts (CC p56).

#### Acoustics

Maintain natural acoustic quality.

This is a sub-objective of Conserve and/or enhance recreation resources (EBMH).

Implementation indicator: % of developments, affecting fixed-location tourism operators, having adequate consultation.

• LRMP (CC) Target: 100% (implied)

Assessment or plan: acoustic quality plan (CC).

Manage extractive resource developments near tourism resorts, and tourism and recreation sites... (CC p56)

Manage the intensity, production and timing of industrial and other noise to minimize conflicts

No strategies

 Develop measurable acoustic quality standards and objectives for recreation, tourism, industrial, transportation and other activities through a collaborative process with the assistance and facilitation of the Implementation and Monitoring committee (CC p56).

Until standards and objectives are developed: require development proponents and operators to consult fixed-location tourism

with tourism and/or recreation users in priority areas identified. Refer to overlapping areas on Map 9 (Recreation and Tourism Special Features) and Map 13 (Visual Management) (CC p55).

... maintain, enhance and protect the quality of recreational experiences... (NC p129); maintain, enhance and protect the quality of experience in tourism areas (NC p145); conserve and/or enhance recreation resources (EBMH p34, p44)

operators and work out mutually acceptable agreements on acoustic issues for the tourism season with consideration for established operator; and require operators to strive to not operate noisy equipment in provincial specified Boat Havens and other identified anchorages used frequently by tourists and recreationists between 2100 and 0700 hours from June 15 to September 15 (CC p56); Inform tenured lodge and resort owners of proposed extractive resource developments, including forest development plans that will be... audible from their resorts (CC p56).

### Waterways

Maintain and restore scenic and acoustic quality on waterways.

This sub-objective is part of Conserve and/or enhance recreation resources (EBMH).

Implementation indicator: forest buffers around identified anchorages.

• LRMP (CC) target: maintain.

Implementation indicator: % of potential industrial developments in identified anchorages that undertake consultation.

• LRMP (CC) target; 100% (implied).

Assessment or plan: inventory of anchorages, campsites and destination areas (CC).

Maintain and restore the visual and acoustic qualities on marine cruising and kayaking routes and at anchorages, camp-sites and destination areas, including recreation facilities such as hiking trails in accordance with zoning map (Map 13, Appendix 1) (CC p57).

Maintain wind-firm forest buffers around identified anchorages (combine with visual buffers) (CC p57).

- Update inventories of anchorages, campsites and destination areas (CC p57); ... identify special anchorages and special features requiring specific management considerations (CC p58);
- Establish rustic campsites and trails as and when required by levels of use, within the carrying capacity of the area if operations and maintenance can be funded (CC p57).

Consult with affected stakeholders prior to the installation of new on-shore and floating industrial structures in identified anchorages (CC p57).

- ...require[industrial] operators to strive to not operate noisy equipment in provincial specified Boat Havens and other identified anchorages used frequently by tourists and recreationists between 2100 and 0700 hours from June 15 to September 15 (CC p56);
- Refer unresolved issues and disputes to the Implementation and Monitoring committee for resolution (CC p57).

Buffers around anchorages.

Consult stakeholders.

#### Integrity of natural and cultural features

Ensure that tourism and recreation minimizes impacts to cultural and ecological values.

Or Ensure that tourism development minimizes impacts to cultural and ecological values (EBMH).

See also Objectives related to access (p.169)

Implementation indicator: application for National Historic Site Designation for Port Essington.

G2G (MA) Target: complete by June 2006.

Assessment or plan: inventories of physical and cultural features (CC); studies to identify carrying capacity levels(NC). strategic tourism plan that addresses access to, use of and conservation of recreation and cultural resources/features (EBMH/NC/CC); regulations and protocols for conserving the integrity of sensitive cultural and heritage and traditional harvesting sites and resources (NC).

- 2 Maintain cultural heritage values [within Port Essington] (MA pC6, KM pC11).
- Apply for National Historic Site Designation... by June 2006 (MA pC6, KM pC11).
- Ensure that tourism development minimizes impacts to cultural and ecological values (EBMH p34); conserve and/or enhance recreation resources (EBMH p34, p44); ... ensure recreation does not degrade the integrity of ecological values and physical features in areas used for recreational activities (NC p 131); ... preserve the integrity of ecological values... and physical features in... tourism ... tenured areas (NC p147); ensure that Parks, Protection Areas and other Crown lands with recreation and tourism values are managed to protect these values... (CC p57); identify, classify and protect special features (CC p55). maintain the integrity of... ecological sites (CC p55); no negative impact to ecosystem values and physical features through recreation use... (NC p 131); no negative impact from tourism use to associated ecosystems... (NC p147).

... establish and maintain appropriate levels of use within recreation areas according to their carrying capacity (NC p130); ... establish and maintain appropriate levels of tourism use (NC p 145); do not exceed the carrying capacity of... ecological sites (CC p55)

Ensure that tourism (and recreation; CC p55) development minimizes impacts to cultural... values (EBMH p34; CC p55); ... preserve and protect the integrity of registered and unregistered First Nations [and] non-First Nations cultural heritage sites... and features (NC p 131); ... preserve the integrity of First Nations [and] non-First Nations cultural heritage sites... (NC p146).

No strategies.

- Systematically survey and collect information [about special features] from tour operators, recreationists, First Nations and local residents. Provide means for the public to submit information electronically (CC p55); update maps and data bases as new information comes in and make this available to planners, tourism operators, recreationists and the public (CC p55).... identify special ... special features requiring specific management considerations (CC p58);
- 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 (NC p183); requires consultation with user groups (NC p183); involve local people in projects (NC p183).
- Develop a comprehensive, strategic plan for sustainable tourism and recreation for the Central Coast plan area, including specific direction on management, monitoring and enforcement (CC p58); establish... recreation resource and visitor management strategies, and protocols for cultural heritage access, wildlife viewing, etc (territory scale; EBMH p 34); ... assess...[the] need and feasibility of establishing acceptable levels of use (NC p130, p145), including carrying capacities... as required on site specific basis (NC p145); need to consider economic and environmental carrying capacity (NC p181); once carrying capacity studies have been determined for priority areas, allocations re types, timing and intensity of use can be made among First Nations, recreation and tourism users (NC p183); develop access management strategies that minimize impacts to ecological and cultural resources (landscape and watershed scale; EBMH p44; CC p55).
- [Ensure] 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 (NC p146).
- Maintain site integrity (site scale; EBMH p 53); Maintain the integrity of cultural... sites (CC p55);, no negative impact... to... physical features through recreation use; improvement for recreation... is allowed (NC p 131); No negative impact to non-First Nations cultural heritage sites through recreational use...[or] tourism use (NC p131; p146); no negative impact... to First Nations cultural heritage sites and features through recreational use (NC p131); no negative impact... to cultural heritage sites in areas of tourism use (NC p146); [Provide] appropriate protection for... identified areas that are sensitive to intensive tourism development (NC p 146).
- Do not exceed the carrying capacity of the cultural... sites (CC p55); do not exceed site carrying capacity (site scale; EBMH p53)
- Establish as required, commercial harvesting / industrial development buffers around known special features (CC p55).
- Restore and protect special areas near resorts (e.g. beaches trails, wild flower, berry and special nature areas, viewing spots; CC p56)

### Community influence

Provide opportunities for First Nations and local communities to participate in influence tourism development.

This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests (EBMH) and to Ensure a fair distribution of benefits, costs and risks across all parts of coastal British Columbia, including aboriginal and non-aboriginal people (EBMH).

See also Objectives related to general human well-being (Community Influence section, p.129). Note that objectives and strategies in this section could also fall under Local economic benefit below.

Implementation indicator: # and scope of cooperative management agreements/partnerships with First Nations, relating to recreation management.

• LRMP Target: more than zero (implied).

Implementation indicator: amount of funding of government agencies and First Nations for assessment, management and enforcement of recreation.

- LRMP (CC) Target: sufficient.
- 3 Provide opportunities for First Nations and local communities to participate in and benefit from developing tourism businesses (CC p58).

Develop and sustain tourism enterprises that support... cultural objectives (EBMH p53).

Promote and increase First Nations participation in tourism... (NC p181)

Government, local and First Nations to create partnerships with other stakeholders to assist in the monitoring, enforcement, management, and preservation of recreational values (CC p58); develop cooperative management agreements with First Nations (CC p58).

Provide sufficient resources to enable government (BC Parks, WLAP, MOF, Regional Districts) and First Nations to assess and manage recreation values and to improve and enforce recreational use guidelines (CC p58);

- 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 (NC p182).
- Encourage initiatives that will enhance communication with First Nations and local communities (CC p58); consult with the First Nations and local communities prior to new resort development (CC p56).
- Respect First Nations land use plans in tourism development and operations (NC p182).

Cooperative management agreements / partnerships.

Funding for management.

#### Local economic benefit

Provide opportunities for First Nations and local communities to benefit from tourism development.

This is a sub-objective of the core EBM objectives to Ensure a fair distribution of benefits, costs and risks across all parts of coastal British Columbia, including aboriginal and non-aboriginal people (EBMH) and to Recognize and accommodate aboriginal rights and title and interests (EBMH).

See also Objectives related to general human well-being (Local economic benefit section, p.133).

Implementation indicator: # and scope of protocols with First Nations, relating to tourism.

- LRMP Target: more than current number.
- 3 Provide opportunities for First Nations and local communities to participate in and benefit from developing tourism businesses (CC p58).

[Increase] flow of economic benefits [from tourism] to First Nations (NC p147).

Encourage a variety of... tourism development opportunities... that promote stability and

[create] protocols between industry and First Nations, and governments and First Nations, addressing employment, training, capacity building, tenure and revenue sharing (NC p147); increase... the number of protocol agreements [regarding tourism] (NC p181); protocol agreements may... include economic benefits and revenue sharing, amongst other items (NC p182); encourage proponents of tourism developments to sign First Nation's protocols (CC p58);

- Seek to provide [tourism] tenure awards to First Nations (NC p181).
- Encourage partnerships with First Nations and local residents (CC p58).
- Provide First Nations with assistance and opportunities to participate in the tourism sector and to also own their own

Protocols.

long-term benefits to local communities (NC	tourism-related business (NC p181).	
p181)promote local ownership in the	• [Indicators include] revenue streams to First Nations established; tenure awards to First Nations; increased employment of	
tourism industry (NC p182); promote and	First Nations in tourism sector to reflect per capita representation in NC population provided employees have necessary	
increase First Nations participation in tourism	skills or opportunity to acquire them (NC p147).	
and ownership of tourism businesses (NC		
p181). provide First Nations with assistance		
and opportunities to participate in the tourism		
sector and to also own their own tourism-		
related business (NC p181).		
Encourage local employment opportunities in		
tourism (NC p182)		

# Objectives related to scenery<sup>155</sup>

S Objective		Strategy		Implementation indicator
Alteration of scenery				
Maintain scenery that meets the obj	Maintain scenery that meets the objectives for a zone (Table below)			
Table. Summary of Visual Manager	ment Zones/Classe	s, Objectives and Prescriptions (NC p168, Table 28, CC p73 Table 4).		
Zones/Classes O	bjective for view		Maximum alteration	
Class I: wild ve	ery high proportion	of landscape appears wild	2% of perspective view	
Class II: natural variability high	gh proportion of la	indscape appears natural	5% of perspective view	
Class III: landscaped forestry ma	ajority of landscap	e appears natural	8% of perspective view	
Class IV: special viewscape ma	aintain or improve	visual quality; forestry and tourism interests will plan alterations collaboratively	based on collaborative plan	
This sub-objective is part of Mainta	nin natural scenic q	uality (EBMH).		
Implementation indicator: maximur	n % of each perspe	ective view visibly altered in each visual quality zone.		
• G2G (MA) Target: same target	s as NC LRMP in	Sommerville; 5% in travel route to Khutzeymateen inlet; 8% in Work Channel.		
• LRMP Target: 2% in Class I; 5	5% in Class II; 8%	in Class III; agreed target in Class IV		
Implementation indicator: maximur	n % of shoreline b	uffer visibly altered in each visual quality zone.		
` '		occurrence of shoreline forest (in all zones).		
, , ,		tion (except for infrastructure) in Wild Zone; minor gaps visible in remaining three	e visual zones.	
Assessment or plan: visual manager	ment plan for signi	ficant non-commercial facilities and sites (CC).		
2 Maintain scenic quality consist		[In Sommerville] implement Management Objectives, Targets and Indicators from	m March draft of NCLRMP (MA pC1).	
scenic experience where visual landscapes predominate [in Sopp C1).		Manage [travel route to Khutzeymateen inlet] to Class 2 Visual Management Zor pC2).	ne as described in recommended LRMP (MA	
[In Union/Work Channel] main	ntain scenic	Manage [Work Channel] to Class 3 Visual Management Zone as described in red	commended LRMP (MA pC2).	
quality along the travel route to	9	< 50% deviation from natural occurrence of shoreline forest (MA pC2).		
Khutzeymateen inlet consistent visual experience, where activity				
landscape and do not readily as experience (MA pC2).				
[In Union/Work Channel] main				
quality along the Work Channe aesthetically pleasing scenic ex				
activities are evident but subord				

pC2).		
Maintain functional integrity of shoreline		
forests [in Union/Work Channel] (MA pC2).		
Ensure that management maintains the quality of visual experiences according to the visual classes described in Table 28 (NC p170); to achieve the required visual quality of visually important areas, four visual management zones will be established as described in Table 4 below; these will replace in the Plan area the current Visual Quality Class (VQO) system used by the province (CC p70).  Minimize negative impacts to visual resources [from timber harvesting] (CC p69).  Maintain natural scenic quality (EBMH p34).	[Limit alteration to] 2% of perspective view [in Class II: landscape forestry]; [to target agreed to by forestry and tourism interests in Class IV: special] (NC p168, p169; CC p73)  Continuous buffer strips, with minor gaps, will be maintained along all marine shorelines and some freshwater and brackish water shorelines in the four visual zones shown on Map 13 (CC p71); in the Wild zone, 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 (CC p70); in the Natural Variability and Landscape Forestry zone, continuous shoreline buffer with minor gaps maintained; low impact selection hand logging and limited, water based highlead logging permitted along shoreline (CC p70).  Implementation and monitoring committee to develop visual prescriptions for significant non-commercial facilities and sites, such as cultural sites, high use anchorages and campsites and special features in keeping with the objectives of visual management zone (CC p71).  Visual design principles, including visually effective green up periods will be applied in visual zones; forestry infrastructure will be designed to achieve minimal impact on visual quality using, where necessary, innovative designed to be as windfirm as possible (CC p71).  Emphasize the minimizing of foreground impacts while accepting greater alteration in background viewscapes (CC p71).  The exact location of visual zone boundaries to be determined as per visible area of the viewscape (CC p71).  Visual management requirements do not apply in areas outside the visual zones (CC p71).  In the Broughton Wild Zone: no operating windows are imposed on Interfor's Scott Cove and Viner sound logging operations; existing 'category A' blocks in Weyerhaeuser's operations can proceed according to plan; wild zone standards will be applied to new planning; a	Landscape Alteration, by zone (CC, NC).  Shoreline alteration, by zone (CC).

# Collaboration amongst users

Settle disputes over resource development fairly and effectively.

This sub-objective is part of Diversify the economies of First Nations' and other communities in the Plan Area (G2G).

See also Collaboration amongst users sections in Objectives related to harvesting fish and wildlife (p.138), Objectives related to mineral and energy resources (p.151) and Objectives related to tourism and outdoor recreation (p.157).

Implementation indicator: % of forest development plans reviewed by tourism stakeholders.

• LRMP (NC) Target: 100%

Implementation indicator: joint forestry-tourism committee.

• LRMP (CC) Target: established.

Assessment or plan: access management plan (CC)—see Objectives related to access (p.169).

3 ... any disputes that may arise will be settled effectively by the Implementation and Monitoring Committee taking full account of the zoning and the needs and interests of all affected stakeholders (CC p71).

100% of forest development plans [should be] reviewed by tourism stakeholders (NC p171); ensure that tourism stakeholders are involved in reviewing forest development plans (NC p171;)

Tourism and forestry sector to establish a joint committee that would... manage the successful implementation of both the visual management regime, and... development of a joint marketing support effort to customers of both sectors (CC p70).

- Implementation and Monitoring committee will oversee and ensure implementation of visual management in accordance with spirit and intent of Visual Management Agreement (CC p70); the Implementation and Monitoring committee strive to resolve disputes that may arise among stakeholders to the satisfaction of the stakeholders and the statutory decision makers; disputes that cannot be resolved at this level will be referred to the higher level dispute resolution authority (CC p71).
- The extent and location of Visual zone areas may be modified, in accordance with the zoning categories depending on changing tourism, recreation and forest use in the future (CC p71); the Implementation and Monitoring committee (section 6.2) may recommend the addition, reduction or extension of Visual Zone areas that meet the criteria for such zones, in consultation with affected stakeholders. Revision to the visual zones requires a sound rationale and thorough vetting with stakeholders through a process specified by the Implementation and Monitoring Committee (CC p71).
- Efforts will be made to encourage and promote new tourism and recreation developments in areas zoned with tourism and recreation priority (CC p71); Land and Water BC to inform new tourism tenure applicants of the visual zoning system and how this system applies in the visual and non visual zone areas (CC p70).

Plans reviewed.

Joint forestry-tourism committee established.

## Restoration of scenery

Restore visual quality in high priority, degraded areas.

This sub-objective is part of Maintain natural scenic quality (EBMH).

No strategies.

Assessment or plan: inventory of degraded sites (ranked by priority for restoration; CC).

3 Restore visual quality in priority areas within zones... which have been degraded by past development activity... (CC p71).

Maintain natural scenic quality (EBMH p 34).

No strategies

- Identify those areas or sites where the existing visual condition, due to past development activity is not consistent with the visual prescription shown in Table 4 for that zone (CC p71); prioritize these areas based on the severity of the impact and the significance of the area to tourism and recreation and target these for restoration over time according to their priority rankings (CC p71).
- Conduct restoration in association with new development or alteration proposals where practical (CC p71).

F	Research and monitoring		
R	Refine objectives for visual quality zones and monitor visual quality.		
T	This sub-objective is part of Maintain natural scenic quality (EBMH).		
Ir	mplementation indicator: funding (and in-kind comm	mitments) for adaptive management study examining perceptions of altered scenery.	
•	• LRMP (NC) Target: sufficient for three operational trials.		
3	Establish adaptive management trials to further define the overall experience intended by each of three [visual] zones (NC p170)	[Develop] three operational trial area projects within one year of plan approval (NC p170)	Operational trials
3	Ensure that implementation of the Visual Management Zones will be monitored by the LRMP Implementation and Monitoring Committee (CC p71)	No strategies.  • report on the status of the visual quality in the zones identified on Map 13 on a regular basis to affected stakeholders and to the public; .the implementation of the Visual Management Zones will be monitored by the LRMP Implementation Committee (CC p71).	

# Objectives related to access.

S Objective Strategy Indicator

#### Access restrictions

Commercial and public access and facilities minimize impacts to cultural and ecological values (EBMH)

Implementation indicator: % of significant cultural and ecological features protected by no-access/no-facility zones.

EBMH Target: 100% (implied).

Assessment or plan: inventory of values placed at risk by access and facilities (NC/CC); access management plan (NC/CC).

3 Commercial and...public access and facilities minimize impacts to cultural and ecological values... (EBMH p33, p43, p53)

Cultural, environmental, economic, recreational, and nature-based tourism values are maintained when planning for or implementing access and facilities development (NC p70, CC p53). development and use of current and planned public access and facilities, including construction, maintenance, and deactivation activities, maintains environmental, recreational, and cultural heritage values (CC p53).

Control access where hunting, trapping and guide outfitting activities are a concern to wildlife populations or in order to protect community safety standards, environmental, and cultural values (CC p53).

Establish no-access and facility development zones around significant cultural and ecological features (EBMH p33).

- o 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 public access and facilities (CC p53, NC p70); assess potential impacts of access and facility development to identified cultural and ecological values and develop appropriate access strategies (EBMH p43); [see "Effective access and facilities plans..." under Access requirements].
- Commercial and public access and facilities development and use minimizes detrimental impacts to identified cultural and ecological values (EBMH p43); 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 (NC p70); consider concerns for safety, the environment, social and economic viability when determining appropriate access (NC p70); consider access options that reflect other resource values during review and approval processes (NC p70).
- Appropriate access and facilities management strategies should be in place prior to development (NC p70).
- Maintain best management practices in locating infrastructure (NC p70, CC p53, EBMH p53)
- [Use] site engineering assessments (EBMH p53).
- Encourage the use of mitigation measures to maintain environmental, recreational, and cultural heritage values during and after development of permanent public access and facilities (CC p53, NC p70).
- In consultation with First Nations, local communities and user groups, government to ensure risks to environmental, [tourism in NC], recreational, and cultural heritage values are mitigated when approving a road restoration plan (CC p53, NC p70).
- As an alternative to permanent deactivation, consider the use of temporary access restrictions, where appropriate (CC p54).
- Research is directed towards improving access management systems, and to the development of alternatives to roads for access to resources; direct research and development to improve access management systems; direct research to develop innovative alternative methods for access to resources (CC p54).
- [Indicators include] number of critical incidents... (mass wasting, slides, events that would harm or risk...values)... to environmental, recreational, and cultural heritage values caused by access and facilities development (NC p70).
- [Indicators include] area of site disturbance (NC p70).

#### Access requirements

Provide access for resource development and management.

This sub-objective is part of Diversify the economies of First Nations' and other communities in the Plan Area (G2G).

No strategies.

Assessment or plan: inventory of access and infrastructure (EBMH); access management plan (CC/NC).

- Maintain access for ongoing resource management requirements (e.g. silvicultural activities...) and other long-term resource development needs (e.g. mining and mineral exploration) (CC p54, NC p71).
  - Effective access and facilities plans may be developed for long term resource management and development needs; access and facilities are planned and managed for a range of land use activities.... (NC p71)
- o Refine access and infrastructure inventories (EBMH p43).
- o Effective access and facilities plans are developed for long term resource management and development needs (CC p54); complete access management plans<sup>156</sup> with First Nations, communities and user groups that provide for... the full range of resource development and user needs including the maintenance of roads for recreation and tourism and other appropriate needs (CC p54, NC p71); public access and facilities are planned and managed for a range of land use activities through access management plans (CC p54). appropriate access and facilities management strategies... in place prior to development (EBMH p33, CC p53); develop... options for access and facility needs that benefit all user groups; [coordinate]... access and facilities development amongst users so that future development utilizes existing or shared access whenever possible (CC p54, NC p71).
- [Indicator is] Number of access management plans (NC p71)
- First Nations Land Use Plans are available, subject to FN desires, for use in access planning (NC p71).
- 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 (CC p54, NC p71).
- 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 (CC p54, NC p71).
- Monitor and assess access management plans, including road development (CC p54, NC p71).
- As an alternative to permanent deactivation, consider the use of temporary access restrictions, where appropriate.

# **Section 5: List of effectiveness indicators**

Objective	Effectiveness indicator
First Nations	
Traditional forest resources	• Identification of First Nations cultural/traditional resources (KNT pG3, TP pC3, GFN pG3, HFN pC3).
Identify and maintain traditional forest resources.	• Percentage of known cultural sites protected (EBMH p33); percentage of known and identified cultural areas and heritage sites protected (EBMH p43).
	• First Nations' harvest levels of cultural/traditional resources (KNT pG3, TP pC3, GFN pG3, HFN pC3); known inventory and harvest levels of cultural resources (EBMH p33, 43).
Traditional heritage resources	Identification of First Nations cultural/traditional resources (KNT pG3, TP pC3, GFN pG3, HFN pC3).
Identify and protect traditional heritage features.	• Implementation of First Nations cultural heritage policies (EBMH p33).
	• Percentage of known cultural sites protected (EBMH p33); percentage of known and identified cultural areas and heritage sites protected (EBMH p43).
Hydroriparian ecological integrity	
Water quantity	ECA in watershed and initiation zone (EBMH p42).
Maintain streamflow within range of natural variability	• Index of road density/ECA in initiation zone (EBMH p42).
Water quality and stream morphology	• % riparian forest harvested in process zones (EBMH p42); process zone retention (p52).
Maintain channel characteristics (including stream morphology,	• % deviation from natural riparian forest by hydroriparian ecosystem (EBMH p42).
bank stability and downed wood) and water quality within range of natural variability.	• Streamflow, channel morphology, and water quality (EBMH p42, 52).
	Aquatic invertebrate diversity and abundance (EBMH p42).
Hydroriparian biodiversity and productivity: coarse filter	Aquatic invertebrate diversity and abundance (EBMH p42).
Maintain ecological function of hydroriparian (i.e. aquatic and terrestrial riparian) ecosystems	
Fine filter hydroriparian biodiversity: Fish and high-value fish habitat	• Salmon escapement (EBMH p32)
Protect and sustain high-value fish habitat.	
Terrestrial ecological integrity	
Ecosystem representation  Maintain the natural diversity of species ecosystems and seral	• Species, ecosystem and seral stage representation within reserves and outside reserves (EBMH p32); Ecosystem type/seral stage distribution within and outside of reserves (EBMH p41).

Objective	Effectiveness indicator
stages.	Site series/old forest retention [at site scale] (EBMH p52).
Rare ecosystems  Protect known red- and blue-listed and regionally rare ecosystems.	Distribution of red- and blue-listed ecosystems (EBMH p42).
Habitat for rare and focal species  Maintain adequate and sufficiently distributed habitat to maintain healthy populations and individuals of red- and bluelisted and focal species.	<ul> <li>Amount and distribution of critical habitat protected for red- and blue-listed species (EBMH p32).</li> <li>Amount of highly suitable habitat by subpopulation area (EBMH p42).</li> <li>Species representation within reserves and outside reserves (EBMH p32).</li> <li>Abundance and distribution of focal and red and blue-listed species (EBMH p42); Red- and blue-listed &amp; focal species population trends &amp; distributions (EBMH p32).</li> <li>Number and abundance of habitat elements and features (EBMH p52).</li> <li>Site use by species (EBMH p52).</li> </ul>
Stand structure  Retain forest structure and diversity at the stand level.	CWD species, size and abundance (site scale; EBMH p 52).
Soils and terrain  Conserve soil productivity and protect unstable slopes.	<ul> <li>Area of forest cleared in class IV and V terrain (EBMH p42)</li> <li>Number, size, origin and consequence of natural and development induced landslides (EBMH p33,42).</li> <li>Area of detrimental soil disturbance (EBMH p52).</li> </ul>
Grizzly bears	
Grizzly bear—population conservation  This is a sub-objective of Protect known red- and blue-listed/regionally rare species and their habitats.	Estimated density of grizzly bears in each GBPU sub-population (NC p109).
Human well-being	
Human well-being Achieve high levels of human well-being.	<ul> <li>Population demographics (EBMH p33).</li> <li>Violent crime rate (EBMH p33).</li> <li>Clean water and air [by community] (NC p176).</li> <li>Lower crime rates [by community] (NC p176).</li> </ul>
Health services  This is a sub-objective of the core EBM objective of Achieve the health, wealth and educational status required for a high quality and secure life for both aboriginal and non-aboriginal	<ul> <li>Life expectancy at birth (EBMH p33).</li> <li>Access to medical services [by community] (NC p176).</li> </ul>

Objective	Effectiveness indicator
people.	
Cultural and social activity  This is a sub-objective of the core EBM objective of Create a strong and diverse mix of non-profit and voluntary organizations and a vibrant set of traditional, cultural, and non-market activities within communities and across the region.	Diverse recreation opportunities [by community] (NC p176).
Physical infrastructure This is a sub-objective of the core EBM objective of Build stable, resilient, well-serviced, and peaceful communities in coastal British Columbia.	<ul> <li>Revenues coming into and remaining in the community for infrastructure and community development [by community] (NC p176).</li> <li>Maintained or increased recreational infrastructure and publicly-owned services, e.g., boat launches, recreational campsites, public roads to recreational sites, garbage removal, public toilets (NC p182).</li> </ul>
Community influence  This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks	<ul> <li>Local involvement in resource decisions (EBMH p33).</li> <li>Number of successful projects that used effective collaboration or partnerships to problem solve and balance social, economic and environmental interests (NC p178).</li> <li>Increase in the level of decision-making required by First Nations for the management of forestry, fishery and other natural resources (NC p178)</li> <li>Existence of co-management agreements (EBMH p33).</li> </ul>
Industry consultation  This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks	<ul> <li>First Nations approval of resource development and management plans (EBMH p43)and site plans (EBMH p 53).</li> <li>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 (NC p182).</li> </ul>
Meeting needs Provide adequate opportunities for individuals and households to meet their needs.  Annual income Community members meet their financial needs and maintain a	<ul> <li>Low income population as a % of total population (EBMH p33).</li> <li>Individual/family dependence on social assistance (EBMH p33).</li> <li>Individual/family income; employment by sector (EBMH p33); Average income per tax filer and average family income (KNT pG5, TP pC5, GFN pG5, HFN pC5); increasing standard of living (e.g., mean per capita income) [by community] (NC p176);</li> </ul>
basic lifestyle as defined by community members themselves.  Economic growth and diversity  Diversify the economies of First Nations' and other communities in the Plan Area.	<ul> <li>Increase in the number and range of economic activities across sectors [by community] (NC p177); increase in the number and diversity of forest-related businesses in the North Coast, including value-added and remanufacturing (NC p181); range of large and small businesses [by community] (NC p177).</li> <li>Economic diversity index (KNT pG4, TP pC4, GFN pG4, HFN pC4).</li> <li>Shell fish aquaculture expenditures and/or number of tenures (KNT pG4, TP pC4, GFN pG4, HFN pC4).</li> <li>Assessed property values for Plan Area(s) and by municipality (KNT pG4, TP pC4, GFN pG4, HFN pC4).</li> </ul>

Objective	Effectiveness indicator
	Annual gross and net revenues (EBMH p43).
	• Annual resource (stumpage, etc.) revenues to BC (KNT pG3, TP pC3, GFN pG3, HFN pC3).
Value added  This is a sub-objective of Diversify the economies of First Nations' and other communities in the Plan Area.	Increase in value-added and remanufacturing (NC p181); number of value-added, niche market and specialty products produced out of the North Coast [by community] (NC p177).
Waste wood  This is a sub-objective of Diversify the economies of First Nations' and other communities in the Plan Area.	Number of conventional and alternative energy types explored and projects initiated (NC p180).
Bureaucracy	No increase in processing time and where appropriate, decrease in processing time. (NC p179)
This is a sub-objective of Diversify the economies of First Nations' and other communities in the Plan Area.	
Local economic benefit.	Local income diversity (EBMH p43).
Promote Plan Area resource development by local individuals	• Local share of access to resources (EBMH p33).
and communities, to contribute to local and provincial economies.	• Number of programs that assist community members in starting businesses, including assistance with financing, business planning and marketing [by community] (NC p177)
	• First Nation and local community tourism revenues and employment (KNT pG4, TP pC4, GFN pG4, HFN pC4); First Nation and community forest sector revenues and employment (KNT pG4, TP pC4, GFN pG4, HFN pC4); First Nation and local community shellfish revenues and employment (KNT pG4, TP pC4, GFN pG4, HFN pC4).
	• Increase in the number of locally-owned businesses [by community] (NC p177)
	• Increase in the number of locally owned businesses in the tourism industry (NC p182)
	• Local manufacturing (EBMH p43).
	• Flow of revenue in and out of the community (NC p177); flow of revenue in and out of the North Coast (NC p177).
	• The amount of First Nations participation in all facets of the mineral, aggregate and energy industry and associated services [by community] (NC p180).
Resource rent	• Existence of co-management agreements [with First Nations] (EBMH p33).
This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to	<ul> <li>Protocols between industry and First Nations and the provincial government and First Nations, addressing employment, training, capacity building, tenure and revenue sharing (NC p178).</li> </ul>
contribute to local and provincial economies.	• Increase in the number of protocols that provide revenue-sharing with First Nations [by community] (NC p180).
	• Annual resource revenues to First Nations (KNT pG3, TP pC3, GFN pG3, HFN pC3).
Joint ventures	• Increase in the number of businesses, partnerships, and joint ventures involving First Nations (NC p178).

Objective	Effectiveness indicator
This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to contribute to local and provincial economies.	<ul> <li>Increase in the number of joint management agreements between the provincial government and First Nations and between third parties and First Nations (NC p178).</li> <li>Increase in the number of tourism businesses owned by or involving First Nations [by community] (NC p181)</li> </ul>
	Increase in the number of protocol agreements [by community] (NC p181).
Resource/tenure allocation  This is a sub-objective of Promote Plan Area resource development by local individuals and communities, to contribute to local and provincial economies.	• # and % of tenures held by: Plan Area(s) communities, First Nations and individuals who live and work in the Plan Area(s) (KNT pG3, TP pC3, GFN pG3, HFN pC3).; First Nations-Tenure Holder Agreements (EBMH p33).
Employment Improve prospects for employment in the Plan Area.	• Individual/family income; employment by sector (EBMH p33); increasing local employment [by community] (NC p176); local employment in resource development (EBMH p43). stable or increasing number of local people employed in the forest industry [by community] (NC p180); number of long-term jobs directly and indirectly linked with mineral aggregate and energy activities [by community] (NC p179); growth in tourism related employment [by community] (NC p181); increase in local employment in the tourism industry (NC p182); contribution of NTFP to human well-being including local jobs (NC p181).
	• Increased employment of First Nations in all sectors of the economy to reflect the per capita representation in the North Coast population (NC p178); First Nations benefits including jobs and contracts (NC p179); employment of First Nations in mining sector to reflect per capita representation in North Coast population (NC p179).
	• Employment levels and unemployment rates in the Plan Area(s) and communities in the Plan Area(s) (KNT pG5, TP pC5, GFN pG5, HFN pC5); EI claimants as % of Pop. Aged 19-64 vs. BC overall rates (KNT pG5, TP pC5, GFN pG5, HFN pC5); "Long-Term" EI claimants as % of Pop. Aged 19-64 vs. BC overall rates (KNT pG5, TP pC5, GFN pG5, HFN pC5)
	• Measures could include the number of local jobs per 1000 cubic metres of wood harvested (NC p180).
Education and training. This is part of the core EBM objective to Achieve the health,	• Access to educational services [by community] (NC p176); [Forestry] education programs established (NC p181); increase in the number of programs that provide capacity building for First Nations (NC p178)
wealth and educational status required for a high quality and secure life for both aboriginal and non-aboriginal people.	• First Nations benefits including training (NC p179).
Population growth Promote a stable or growing population.	Population Changes: in Plan Area(s) and local Plan Area(s) communities (KNT pG3, TP pC3, GFN pG3, HFN pC3).
Harvesting fish and wildlife	
Harvesting opportunity	• Fish and wildlife harvest/trapping levels (EBMH p34, p44).
Maintain sustenance, commercial and recreational, hunting, fishing and trapping opportunities.	• Sport-fish catch levels in lakes and streams (EBMH p53).
Sustainable populations	Fish and wildlife population censuses (EBMH p34).
Maintain healthy sub-populations and populations of harvested	• Amount and distribution of highly suitable habitat or winter range for wildlife (EBMH p44)

Objective	Effectiveness indicator
fish and wildlife.	
Non-timber forest products	
Non-timber forest product sector growth and diversity  Maintain viable, diversified and profitable businesses in the non-timber harvest sector.	Sector and business profitability (EBMH p34).
Harvest rate	• Volume, species, grade and area of timber and non-timber forest products harvested (EBMH p34, p44, p54).
Do not exceed sustainable harvest levels.	
Forestry and timber	
Forest sector growth and diversity	• Sector and business profitability (EBMH p34).
Maintain viable, diversified and profitable businesses in the	• Timber Harvest by species and grade (KNT pG4, TP pC4, GFN pG4, HFN pC4).
timber sector.	• Continuity and stability of local wood supply for small and large manufacturing (NC p180).
Resource/tenure allocation	• Increase in the number of renewable forest tenures awarded to First Nations (NC p180).
This is a sub-objective of Promote Plan Area resource development by local individuals and communities.	• Establishment of community forests within the LRMP area (NC p180)
Harvest rate  Do not exceed sustainable harvest levels.	• Volume, species, grade and area of timber and non-timber forest products harvested (EBMH p34, p44, p54).
Forest productivity Maintain forest productivity.	• Species, stocking and growth rate of regenerating stands (EBMH p34, p44, p54).
Mining and energy resources	
Mineral and energy sector growth and diversity	• Business profitability (EBMH p34, 44, 54)
Develop viable, diversified and profitable businesses in the	• Mineral exploration expenditures (KNT pG4, TP pC4, GFN pG4, HFN pC4).
mining and energy sector	<ul> <li>Number of dollars and other benefits accruing to local, provincial and national economies from mineral aggregate and energy industry and associated services (NC p180).</li> </ul>
	• Production levels (EBMH p34); volume, type and grade of extraction (EBMH p44, 54)

Objective	Effectiveness indicator
Resource extraction opportunity Exploration and development is consistent with land use plans.	<ul> <li>Resource estimates (EBMH p34)</li> <li>Number of claims (EBMH p34).</li> </ul>
	Active prospects (EBMH p34).
Community influence This is a sub-objective of the core EBM objective to Ensure a fair distribution of benefits, costs and risks	Proportion of projects jointly reviewed
Ecological integrity of mine sites	Proportion of developments having CEEA screenings and full CEEAs (EBMH).
Mining, from exploration to post-closure, maintains ecological integrity.	Number of regulation infractions (NC p125)
Ecological integrity—reclamation of mine sites This is a sub-objective of Mining, from exploration to post- closure, maintains ecological integrity.	Number of industrial sites prioritized for reclamation (NC p179).
Tourism and recreation	
Tourism sector growth and diversity	Sector and business profitability (EBMH p34)
Develop and support viable tourism business opportunities.	• Visitor number and recreation use days (EBMH p34, 44, 53).
	Tourism room revenue (KNT pG4, TP pC4, GFN pG4, HFN pC4).
Diversity of outdoor experience  This sub-objective is part of Develop and support viable tourism business opportunities.	Carrying capacity projects initiated and carrying capacities established for identified high use areas (NC p183).
Integrity of natural and cultural features Ensure that tourism development minimizes impacts to cultural and ecological values.	• Integrity of areas used for recreation (EBMH p34, 44, 53).
Community influence	Community support for tourism (EBMH p34)
This is a sub-objective of the core EBM objectives to Recognize and accommodate aboriginal rights, title and interests and to Ensure a fair distribution of benefits, costs and risks	• 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 (NC p182).
Local economic benefit  This is a sub-objective of the core EBM objectives to Ensure a fair distribution of benefits, costs and risks and to Recognize and accommodate aboriginal rights and title and interests.	Growth in the number of local tourism operations [by community](NC p181).

Objective	Effectiveness indicator
Access and facilities	
Access restrictions  Commercial and public access and facilities minimize impacts to cultural and ecological values.	<ul> <li>% of landbase occupied by access structures inside and outside the timber harvesting land base (EBMH p33. 43).</li> <li>Area of site disturbance (EBMH p53).</li> </ul>
Access requirements  This sub-objective is part of Diversify the economies of First Nations' and other communities in the Plan Area.	• % of landbase occupied by access structures inside and outside the timber harvesting land base (EBMH p33. 43).