



Forest Stewardship Plan

For Tree Farm Licence 41, Forest Licence
A16885, and Forest Licence A16882

2017 - 2022

Amendment 1, February 5, 2019

For operations administered by Skeena Sawmills Ltd.
in the Kalum Timber Supply Area and in the Nass Timber Supply Area
located within the Coast Mountains Resource District

PREAMBLE

Skeena Sawmills Ltd. (Skeena), the Forest Stewardship Plan (FSP) holder, has prepared this Forest Stewardship Plan as required under section 3(2) of the Forest and Range Practices Act (FRPA, 2002) to direct development related to primary forest activities for cutblocks and roads that will be managed under this plan for areas within Tree Farm License 41 (TFL41), and Forest Licences A16882 and A16885 within the Kalum Timber Supply Area (TSA) and the Nass Timber Supply Area.

Forest Stewardship Plans are the key operational plan under the Forest and Range Practices Act (FRPA, 2002). FSPs generally illustrate forest development intentions, indicate how the FSP holder intends to implement strategies to achieve consistency with any applicable objectives for the planning area, provide limits on where timber harvesting and road construction may occur, provide verifiable results for objectives, and identify portions of a planning area on which results and/or strategies will apply. FSPs are subject to public review and comment, and must be approved by government before they take effect. Specified results, strategies, measures, and practice requirements apply to the FSP holder, identified in this FSP as Skeena Sawmills Ltd (Skeena), or the FSP holder.

Explanation of Objectives, Results and Strategies

The British Columbia provincial government has identified a number of resource values to which government may assign objectives. Section 1 of FRPA states that “objectives set by government” include those objectives under Section 93.4 of the *Land Act*. The FRPA defines three types of objectives for managing and protecting the forest and range values. They are ‘land use objectives’ from approved Land Use Plans (LUP), ‘objectives set in regulation’, and ‘objectives enabled by regulation’. Brief introductions to the objective types are included below to provide context for this plan. Additional information about objectives as they apply to FSPs is available in the Administration Guide for Forest Stewardship Plans, Version 1.06, August 2009, prepared by the B.C. Ministry of Forests and Range Resource Tenures & Engineering Branch (BC Ministry of Forests, 2009). Under section 149(1) of the FRPA, the Lieutenant-Governor-in-Council may make regulations prescribing objectives for soils, visual quality, timber, forage and associated plant communities, water, fish, wildlife, biodiversity, recreation resources, cultural heritage resources, and resource features. Agreement-holders preparing an FSP are responsible for recognizing those resource values and any grand-parented objectives that apply to the area they are proposing to cover by a Forest Stewardship Plan.

Three Sources of Objectives in FSP Identified

1) Land-use Objectives

Land-use objectives established under the Land Act guide agreement-holders in preparing results and/or strategies in operational plans and are key to maintaining environmental and economic values. They are also a mechanism for bringing forward existing and new objectives, which are developed under regional and sub-regional planning processes, into the FRPA. For the Kalum TSA, a portion of the land use objectives approved in the Kalum Land and Resources Management Plan (MSRM,

2002) were later incorporated into the Kalum Sustainable Resource Management Plan to provide the government land use objectives (ILMB, 2006). At the time of writing of this FSP, an amendment respecting the Kiteen Area to the Land Use Objectives Regulation Order, 2006 for portions of the Kalum SRMP Area was proposed to incorporate certain elements of the Gitanyow Land Use Plan (MFLNRO, 2016) and (Gitanyow Hereditary Chiefs, 2016). Since the Kiteen area is outside the Kalum FDU (for this Skeena Sawmills FSP), no specific mention of the proposed amendment or the Gitanyow Land Use Plan (Gitanyow Hereditary Chiefs, 2016) in the Kalum FDU were made. An additional amendment concerning conservation of rare plant communities, identified as “Objective 10 of the 2006 Land Use Objectives Regulation (LUOR) Order for the Skeena Islands portion of the Kalum SRMP area” was also proposed with a deadline date for comments of February 28, 2017 (MFLNRO, 2016). See Objective 2.8.5, Biodiversity – rare plant communities from the Kalum SRMP for objectives and strategies related to conservation of rare plants on the Skeena Islands for the address of conservation of rare plant communities on the Skeena Islands.

The Nass South SRMP, approved in 2012, provided the basis for the Land Use Objectives Regulation Order - Nass South Sustainable Resource Management Plan (MFLNRO, 2016) which established land use objectives for the Nass South SRMP Area.

This plan includes land use objectives from the following sources:

- a. Order Establishing Land Use Objectives in the Kalum Sustainable Resource Management Plan (April 2006, Amended 2007, 2008);
- b. Order Establishing Community Watersheds (Ministry of Agriculture and Lands, 2006); and,
- c. Nass South SRMP LUOR Order (MFLNRO, 2016).

These plans can be accessed through the following link: <https://www.for.gov.bc.ca/tasb/slrp/>

2) Objectives Set in Regulation

Objectives set in regulation (enabled under section 149 of the FRPA, and set under sections 5 to 10 of the Forest Planning and Practices Regulations (FPPR, 2004), are intended to provide goalposts for managing and protecting FRPA values. Results and/or strategies in operational plans must address and be consistent with these objectives.

3) Objectives Enabled by Regulation

Objectives enabled by regulation (sections 56, 149.1 to 150.3, and 181 of the FRPA, and Part 1, Division 2 of the Government Actions Regulation) are the third type of objectives set by government (FRPA, 2002). The appropriate minister (as authorized in the legislation) may designate areas, establish objectives for these areas, and establish other things, such as measures or features. In some cases, different ministers are responsible for designating an area and setting objectives within that area. These objectives guide effective forest management for specific resource values at the local level. Objectives enabled by regulation come into effect through government actions outlined in sections 2 to 4 of the Government Actions Regulation

(Province of BC, 2004). Objectives enabled by regulation by a minister must be consistent with any applicable established objectives. When establishing these objectives, the minister must consider the impact of the proposed objective on the provincial timber supply as well as the cumulative impact on rights granted to timber, woodlot, or range agreement holders. Once a new objective has been in place for at least four months, new operational plans (including forest stewardship plans) must contain results and/or strategies to address the new objective if the objective is applicable to the area under the plan. Existing operational plans must be amended within two years, unless a longer timeframe is specified in the order under section 8 of the FRPA, to address the new objective if it is applicable to the area under the plan. Objectives enabled by regulation in this plan are identified in the “*Reference Information for this Objective*” in sections 2 to 4. Several orders related to wildlife are applicable to this plan (U-6-001, U-6-002, U-6-009, U-6-018) and are available online at the following site : http://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html Within the plan links to additional orders are provided.

Results and Strategies

Section 5(1) (b) of FRPA requires FSPs to specify intended results or strategies for “objectives set by government”. Results and/or Strategies are required elements of a Forest Stewardship Plan used to identify commitments made by the FSP holder to ensure achievement of, or consistency with, objectives applicable to the plan. Once approved, the results or strategies become items in the FSP used for compliance and enforcement purposes. For this reason, results and strategies must be measurable or verifiable as defined in the Forest Planning and Practices Regulation (FPPR). In general terms, results and strategies are “measurable” if they can be quantified (i.e., compared to an empirical set of data), or “verifiable” if they can be qualified (i.e., proven through examination or demonstration).

In this FSP, “Result” means a description of:

- a. measurable or verifiable outcomes for a particular established objective; and,
- b. the situations or circumstances that determine where in a FDU the outcomes under (a) will be applied; and,

“Strategy” means a description of:

- a. measurable or verifiable steps or practices that will be carried out to meet a particular established objective; and,
- b. the situations or circumstances that determine where in a FDU the steps or practices will be applied.

Interactions and Inconsistencies Within Objectives

Where there are inconsistencies within objectives that arise from the different legislation, section 149(2) of the *FRPA* sets out an initial hierarchy that deals with which objective shall prevail, “In case of an inconsistency between an objective established or carried forward from (a) *land use objectives* set by Government; and, (b) an *objective set in regulation*, then the objective under *Land Use Objectives* prevails to the extent of the inconsistency”. This inconsistency may come in the form of

providing a refinement of an objective, or completely replacing the *Objective set in Regulation*.

In this FSP the Order Establishing Land Use Objectives in the Kalum Sustainable Resource Management Plan (April 2006, Amended 2007, 2008) prevails for Kalum Forest Development Unit (FDU) and the Nass South SRMP LUOR Order prevails for the Nass South FDU to the extent of any inconsistency with the objectives set in regulation. Inconsistencies are not expected to arise for the Nass North FDU in the short term because without an approved strategic planning process to establish land use objectives, the objectives for this FDU will be either set in regulation under the FPPR or be enabled by regulation under FRPA or a Government Action Regulation (GAR).

Additional Stewardship Elements Outside of the FSP

The required and enforceable elements under the FRPA that fall within the approval tests for this plan include the FSP results, strategies, stocking standards, and measures. The FSP does not address other requirements and expectations that fall outside of the FRPA and FPPR although the FSP holder is responsible for a number of obligations that are imposed outside of the FRPA and FPPR. As examples, Skeena must be compliant with a broader range of legislation, such as the federal Fisheries Act, the Species at Risk Act, the provincial Wildlife Act, and Heritage Conservation Act. Skeena also must address other important expectations of society respecting management of the public forest and range lands in B.C. These expectations may be outside of the legal realm and are equally important, such as the application of current scientific and technical knowledge, and the use of professionals and guidance documents to support management decisions.

This preamble is provided for context and background and does not form part of the legal approved Forest Stewardship Plan.

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1.0 APPLICATION OF THIS FSP

1.1 The Forest Stewardship Plan Holder

The Holder of this Forest Stewardship Plan (FSP) is Skeena Sawmills Ltd (Skeena Sawmills), located at:

5530 Highway 16 W
PO Box 780
Terrace, BC V8G 4R1
Tel. (250) 635-6336
Email. greg.demille@skeenasawmills.com.

All references in the plan to the FSP Holder and Skeena Sawmills activities refer to activities authorized by Skeena Sawmills Ltd.

1.2 Forest Stewardship Plan Approval

Signature of Person Required to Prepare Plan (FRPA s. 5(3))



Greg DeMille, RPF
Skeena Sawmills Ltd.
Authorized Licencee Signatory

February 5th, 2019

Date



Paul Hanna, RPF #2254
Silverwood Consulting Inc.
210-4644 Lazelle Ave, Terrace, BC
V8G 1S6

February 1st, 2019

Date

"I certify that this document is prepared to the standard expected of a member of the Association of British Columbia Forest Professionals."

Barry Dobbin, RPF
Coast Mountains District, MFLNRO
Delegated Decision Maker

Plan Approval Date

1.3 Term of the Plan

The term of this Forest Stewardship Plan is five (5) years, commencing on the date the plan is approved by the Minister in Section 1.2.

1.4 Area to Which This FSP Applies

This FSP applies to all primary forest activities, cutblocks and roads developed and managed by Skeena Sawmills within the FSP plan area during the term of the Plan. The FSP plan area includes Tree Farm Licence #41 (TFL 41), the Kalum Timber Supply area (TSA), and the Nass TSA. This FSP does not apply to cutblocks or roads in cutting authorities approved before the commencement date of this FSP, or to previously harvested areas.

1.5 Forest Development Units

There are three Forest Development Units (FDUs) in this FSP, which correspond to geographic areas for which the combination of (a) objectives set by government according to the FRPA sections 149 and 149.1 or legal land use orders; and, (b) results/strategies to achieve land use objectives, are different. The Kalum FDU includes area subject to the 2006 Order Establishing Land Use Objectives in the Kalum Sustainable Resource Management Plan (SRMP) Area, excluding the Cascadia and Pacific Timber Supply Areas. The Nass South FDU includes the Nass South Sustainable Resource Management Plan area. The Nass North FDU includes the remainder of the Nass TSA outside of the Nass South SRMP Area.

Table 1. Skeena Sawmills Forest Development Units

Forest Development Unit	Source of Land Use Objectives used to define FDU	Applicable Tenure	Spatial Boundaries and Maps
Kalum FDU	2006 Order Establishing Land Use Objectives in the Kalum SRMP Area	TFL 41 and FL A16885	Kalum SRMP Map zonation boundaries (including amended boundaries) as presented in Appendix III apply for the Kalum FDU Coastal Tailed Frog Wildlife Habitat Areas – Order #6-058, #6-060-62 and 6-064-67 Schedule A Maps apply in the Kalum FDU Ungulate Winter Range U-6-001 Schedule A Map applies for Mountain Goat in the Kalum FDU Ungulate Winter Range U-6-009 Schedule A Map applies for Moose in the Kalum FDU
Nass South FDU	Land Use Objectives Regulation Order - Nass South Sustainable Resource Management Plan (February 25, 2016)	FL A16882	Nass South SRMP Map zonation boundaries as presented in Appendix IV apply for the Nass South FDU Ungulate Winter Range U-6-002 Schedule A Map applies for Mountain Goat in the Nass South FDU Ungulate Winter Range U-6-018 Schedule A Map applies for Moose in the Nass South FDU Specified Area 6-282 Schedule A Map applies for Grizzly Bear in the Nass South FDU
Nass North FDU	FRPA Sections 149 and 149.1	FL A16882	Ungulate Winter Range U-6-002 Schedule A Map applies for Mountain Goat in the Nass North FDU Ungulate Winter Range U-6-018 Schedule A Map applies for Moose in the Nass North FDU Specified Area 6-282 Schedule A Map applies for Grizzly Bear in the Nass South FDU

1.6 Maps

Overview maps of the Kalum Forest Development Unit (including TFL 41 and the Kalum TSA), and the Nass South and Nass North Forest Development Units are shown in Figure 1, Figure 2, and Figure 3. Maps from the Kalum SRMP and Nass South SRMP are also included in Appendix III and IV to provide reference and geographic context to this plan.

Maps are also provided separately from the Forest Stewardship Plan text as part of the Supporting Documentation of the FSP at a scale of 1:100,000. These maps include relevant information from the SRMPs, GAR Orders, and Gitanyow Land Use Plan to facilitate effective implementation of the FSP.

1.7 Objectives Results and Strategies

This FSP provides, for each resource value that has an assigned objective, a stand-alone set of results and strategies for Skeena Sawmills primary forest activities that will be undertaken within the Kalum TSA, TFL 41, and the Nass TSA. A number of objectives in this FSP are assigned through the Kalum SRMP LUOR Order and the Nass South SRMP LUOR Order. For these objectives, the companion set of measures, indicators, and targets are adopted as results by Skeena Sawmills. The “Measures/Indicators” set out variables used to track the achievement of an objective; and, the “Targets” provide objective standards to which the FSP holder will be accountable.

Management considerations are also included in the SRMPs. These considerations are intended to provide greater clarity on the implementation of objectives. In instances where the Skeena Sawmills intends to commit to such considerations, they are included as strategies in this FSP. For resource values not addressed in the SRMPs or other orders or direction from government, the FPPR provides objectives and/or results/strategies for those resource values.

Assigned objectives for resource values in the Nass North FDU come from the FPPR. This part of the Nass Timber Supply Area is outside the Nass South SRMP area and it has not had a strategic planning process to further assign objectives for resource values. There are, however, land use designations including Wildlife Habitat Areas (WHA) and Ungulate Winter Ranges (UWR) established for entire TSA which apply to the Nass North FDU. These include UWRs for Moose and Mountain Goats, and WHAs for Grizzly Bears.

1.8 Effect of Approval of the FSP

In accordance with FPPR 14, Appendix II identifies blocks and roads that are declared under the FPPR, Section 14(4) or identified as FRPA Section 196 Areas.

In accordance with FRPA 197(5), the FSP holder specifies that it may choose to amend the stocking standards for silviculture prescriptions or site plans that are already in existence to conform to this FSP.

1.9 Cumulative Effects of Multiple Forest Stewardship Plans

There are a number of approved Forest Stewardship Plans that have overlap with the FDUs in the Skeena Sawmills FSP, including:

1. For the Kalum FDU:

- A&A Trading Ltd - FLA16836;
 - BC Timber Sales;
 - Coast Tsimshian Resources - TFL 1 and FL A16835;
 - Haisla Resources LP – FLTC A7551, A86739 and A94428;
 - Kalum Ventures Ltd. – Non-Renewable Forest Licence A73726 and Forestry Licence To Cut A77424 and A91358;
 - Kitselas Forest Products Ltd. - Non-Renewable Forest Licence A73377 and A90733 and Forestry Licences-To-Cut A77426 and A91360; and,
 - Terrace Community Forest.
2. For the Nass North and Nass South FDU:
- BC Timber Sales; and,
 - Canada Resurgence Ltd. - FL A16884.

For a number of objectives that require multi-licencee analysis, similar approaches to management are being taken by licencees. These include landscape level objectives for old growth seral stages, and patch size distribution. To date there is no history of undue constraints requiring the minister to establish targets for the purpose of the FRPA section 9 for sharing the responsibility to obtain results consistent with objectives set by government, and this is expected to continue to be the case.

1.10 Order of the Plan and Supporting Documentation

This plan is designed as a stand-alone document to the extent that is practical. For each resource value that has an assigned objective, the FSP includes, in order:

- reference information for the objective including conditional exemptions, mandatory practice requirements, and practice requirements eligible for exemption;
- introductory or background contextual information where pertinent to the objective;
- citation of the legal objective or, in the case of the Nass South FDU, the elected objective from the objective source (e.g. FPPR, or Nass South SRMP LUOR);
- results, if applicable, which may include tabular listings of Measures, Indicators, and /or targets; and,
- strategies, if applicable.

If the provision of additional information becomes necessary to provide context to the plan such information will be deposited in a supporting document. The supporting document for this FSP is titled *Supporting Document for the Skeena Sawmills – TFL 41, FLA16882 & FL A16885 Forest Stewardship Plan*. It will be a living document used to document the results of referrals and public review of the FSP, provide context for objectives, results and strategies as the plan unfolds, and may also be used as a repository for various analyses required to support the plan during the term of the FSP. The supporting document is not a legal component of the FSP.

1.11 First Nations Consultation and Information Sharing

The FSP holder will consult in accordance with the Treaties, First Nations consultation protocols or agreements that are in effect at the time of consultation. In the absence of such agreements, the FSP holder will be consistent with current provincial consultation and information sharing procedures.

1.12 Acronyms and Definition of Terms

Acronyms and definitions used in this Forest Stewardship Plan are listed below. Additional relevant terms and definitions are included at the beginning of results and strategies sections throughout the FSP where they apply.

Active floodplain	the level area with alluvial soils, adjacent to streams, that is flooded by stream water on a periodic basis and is at the same elevation as areas showing evidence of flood channels free of terrestrial vegetation; rafted debris or fluvial sediments, recently deposited on the surface of the forest floor or suspended on trees or vegetation; or, recent scarring of trees by material moved by flood waters.
Basal Area (BA)	the cross sectional area of a tree bole measured at breast height (1.3 m above the point of germination) and expressed as a ratio of bole area to land area, (e.g. 6 square metres of basal area per hectare)
BCTS	British Columbia Timber Sales.
BEC	Biogeoclimatic Ecosystem Classification.
Community watershed	a drainage basin that is managed to provide a domestic water supply to a particular community of users.
Connectivity	a qualitative term describing the degree to which late-successional ecosystems are linked to one another to form an interconnected network. The degree of interconnectedness and the characteristics of the linkages vary in natural landscapes based on topography and natural disturbance regime. Breaking of these linkages may result in fragmentation. Connectivity also refers to degree to which the condition of a landscape facilitates or impedes wildlife movement.
Cultural Heritage Resource (CHR)	a resource that is the focus of a traditional use by an aboriginal people and is of continuing importance to that people and is not regulated under the Heritage Conservation Act.
Cutblock	<p>“Cutblock” means, for any individual area that has or will be harvested under a cutting permit to which this FSP applies:</p> <ul style="list-style-type: none"> i. the net area to reforest; ii. the area occupied by permanent access structures required to harvest the area; iii. all riparian reserve zones and wildlife tree retention areas associated with the harvest area; and iv. areas that are not harvested as a result of the selected silviculture system.

Delegated Decision Maker (DDM)	the delegated decision maker appointed by the Minister.
EVQO	Established Visual Quality Objective.
Fan destabilization	one or more of the following that occur beyond the naturally occurring range of variability: (a) an increase in the depth of a channel within an alluvial or colluvial fan; (b) water and sediment that overflows the banks of a channel within an alluvial or colluvial fan and spreads out across the surface of the fan; or, (c) the creation of a new channel within an alluvial or colluvial fan.
Forest Development Unit (FDU)	an area identified in this forest stewardship plan where forest development may occur during the term of this plan; and, within which, during the term of the plan, timber to be harvested or roads to be constructed are entirely located.
FPC	the Forest Practices Code of British Columbia Act, RSBC 1996, c.159.
FPPR	the Forest Planning and Practices Regulation, B.C. Reg. 14/2004 (includes amendments up to B.C. Reg. 157/2012, June 25, 2012).
FREP	the Forest and Range Evaluation Program, used by the Government of British Columbia to evaluate the effectiveness of forest and range practices in achieving management objectives, including sustainable resource management.
FRPA	the <i>Forest and Range Practices Act</i> , SBC 2002, c.69 (current to June, 2016).
FSP	Forest Stewardship Plan.
GAR	the <i>Government Action Regulation</i> B.C. Reg. 582/2004.
High bench floodplain ecosystem	an ecosystem that occurs on elevated floodplain sites that have seasonally fluctuating water tables, but generally only flood every few years. Highly productive forests dominated by spruce are typical.
LRMP	Land and Resource Management Plan.
Landscape unit	planning areas established under the Forest Practices Code of British Columbia Act by the district manager up to 100 000 hectares in size, based on topographic or geographic features such as a watershed or series of watersheds.
Legal objective	a land or resource management objective that has been established by Cabinet or an authorized minister (or minister's delegate) for the purpose of guiding subsequent resource management planning and decision making. Making land use plan objectives "legal" (by Cabinet or ministerial Order) is the primary means in British Columbia of ensuring that the plan objectives are implemented consistently over time.
Low bench floodplain ecosystem	an ecosystem usually situated directly streamside or in backchannels that experience prolonged annual flooding and sediment/erosion deposition. This limits tree growth and scours vegetation that is not firmly rooted. Cottonwood is scattered in the units; red alder, willows, and Sitka alder may dominate the shrub and tree layers.
Middle bench floodplain	an ecosystem that experiences prolonged elevated water tables during the

ecosystem	growing season that limit conifer establishment. Forests are dominated by cottonwood with some spruce conifers. Understories are dominated by thickets of salmonberry, red-osier dogwood, and red elderberry.
Minor Salvage Operations	harvesting of timber that is dead, infested with pests or otherwise damaged or that is required to be harvested to facilitate the removal of the dead, infested or damaged timber.
Monumental Cedar	means a large old western redcedar tree or a large old yellow cedar tree that has the attributes necessary to fulfill the Aboriginal Tree Use needs of the Applicable First Nation primarily for totem poles, canoes, or long beams and poles to build longhouses, community halls or similar community structures.
NDT	natural disturbance type.
Natural disturbance types	a term used to characterize areas with different natural disturbance regimes. Five natural disturbance types are recognized as occurring in B.C. as (a) NDT1 Ecosystems with rare stand-initiating events ; (b) NDT2 Ecosystems with infrequent stand-initiating events; (c) NDT3 Ecosystems with frequent stand-initiating events; (d) NDT4 Ecosystems with frequent stand-maintaining fires; and, (e) NDT5 Alpine Tundra and Sub-alpine Parkland ecosystems.
Net Area to Reforest (NAR)	the portion of a cutblock that remains after the following areas have been excluded: (a) areas occupied by permanent access structures; (b) wildlife tree retention areas; (c) riparian reserve zones; (d) contiguous areas that, in their natural state, are not capable of supporting a stand of trees in order to meet the stocking standards for non-excluded areas, and are at least 0.1 ha in size and 10 m wide or are identified under FPPR section 86 (Annual Reports); (e) contiguous areas of noncommercial forest cover that are present on the cutblock at the commencement of harvesting, and are at least 0.1 ha in size and 10 m wide or are identified under FPPR section 86 (Annual Reports); and, (f) areas reserved for purposes other than timber harvesting.
OGMA(s)	old growth management area(s). These are areas that contain or are managed to replace specific structural old-growth attributes and that are mapped out and treated as special management areas (no harvest areas).
Primary Forest Activity	one or more of the following: (a) timber harvesting; (b) silviculture treatments; and, (c) road construction, maintenance and deactivation.
Qualified Person	a person who by experience and/or education is considered knowledgeable and able to provide expert advice on a given subject in a given situation.
Qualified Professional	a person who by education, experience and professional credentials is considered knowledgeable and able to provide expert advice on a given subject in a given situation.
Road Construction	the construction of a road, and includes bridges and major culverts.
Roadside Work Area	the area adjacent to a road where decking, processing, or loading timber;

	and/or piling or disposing of logging slash is/are carried out.
RVQC	Recommended Visual Quality Class (including these classes: preservation, retention, partial retention, modification, and maximum modification).
SRMP	sustainable resource management plan. A SRMP is a landscape-level plan that identifies spatially specific and measurable land/resource objectives for the planning area, and strategies for achieving the objectives. SRMP Planning integrates and replaces the province's former array of landscape and local planning processes under one umbrella (including local resource planning, coastal planning, pre-tenure planning, and recreation management planning).
Scenic area	any visually sensitive area of scenic landscape identified through a visual landscape inventory or planning process carried out or approved by a district manager.
Sustainability	a state or process that can be maintained indefinitely. The principles of sustainability integrate three closely interlinked elements – the environment, the economy and the social system – into a system that can be maintained in a healthy state indefinitely.
TSA	Timber Supply Area.
Timber Sale Licence (TSL)	a Timber Sale Licence entered into under the Forest Act between the BC Timber Sales Manager and its holder.
TSR	Timber Supply Review.
UWR	Ungulate Winter Range.
Visual Quality Objective (VQO)	(a) an objective continued, in respect of a scenic area, under section 181 of the FRPA; (b), an objective established for a scenic area under the Government Actions Regulation; or (c) a visual quality class (<u>VQC</u>) continued, for a scenic area, under section 17 of the Government Actions Regulation.
WHA	Wildlife Habitat Area.
WTP	Wildlife Tree Patch.
WTR	Wildlife Tree Retention.
Watershed	an area of land that collects and discharges water into a single main stream through a series of smaller tributaries.
wildlife trees	a tree or group of trees that (a) provide wildlife habitat, and (b) assist in the conservation of stand level biodiversity.
wildlife tree retention area (WTRA)	an area occupied by wildlife trees that is located (a) in a cutblock; (b) in an area that is contiguous to a cutblock; or, (c) in an area that is sufficiently close to the cutblock that the wildlife trees could directly impact on, or be directly impacted by, a forest practice carried out in the cutblock.

2.0 KALUM FDU RESULTS AND STRATEGIES

The Kalum Forest Development Unit includes TFL 41 and the Kalum TSA. An overview map of the Kalum FDU is shown in Figure 1. Maps from the Kalum SRMP are also included in Appendix II to provide reference and geographic context to this plan.

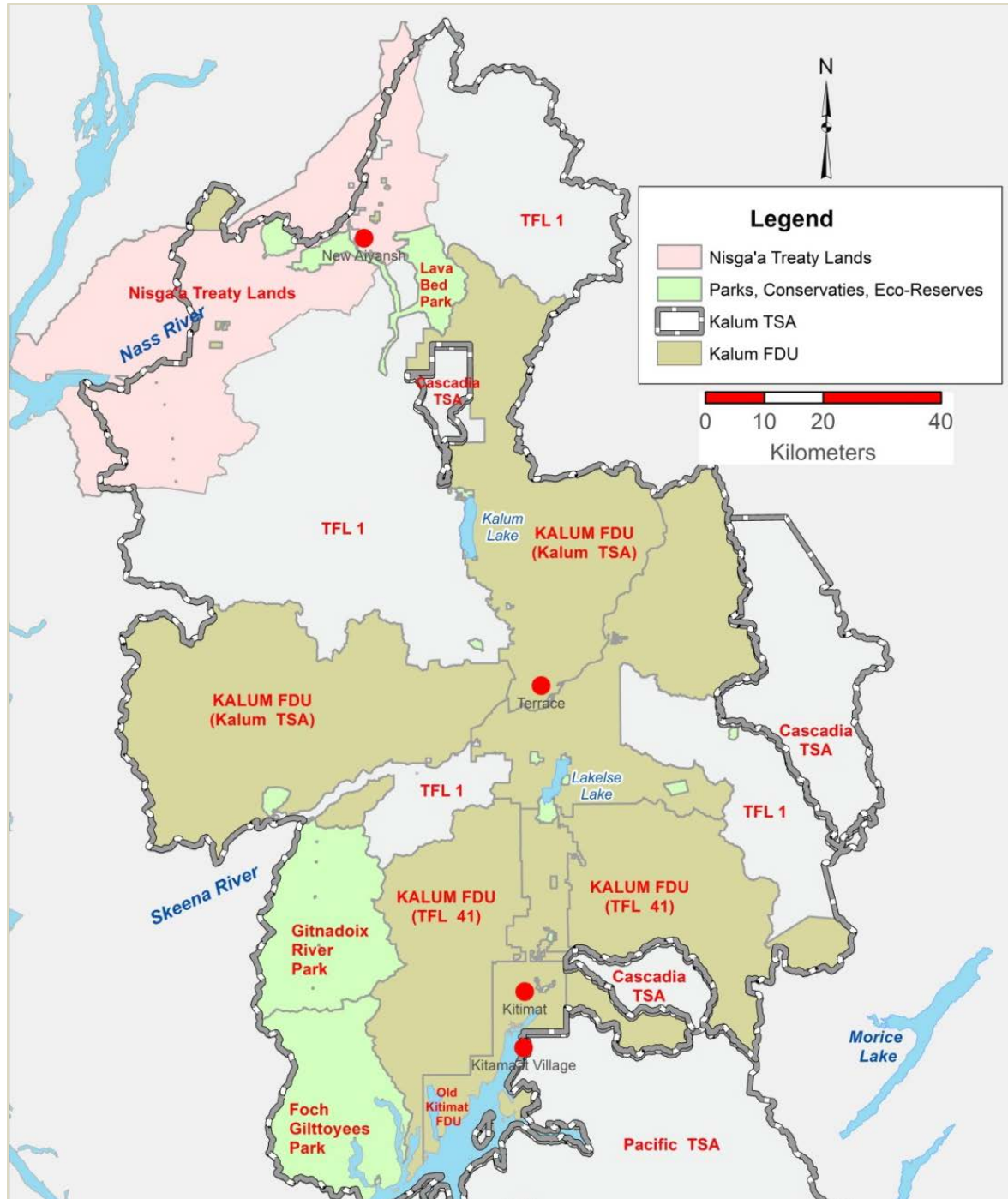


Figure 1. Overview Map of Kalum Forest Development Unit

Assigned objectives for resource values in the Kalum FDU come from sources including:

- Order Establishing Land Use Objectives in the Kalum Sustainable Resource Management Plan (April 2006, Amended 2007, 2008);
- Order Establishing Community Watersheds (2006);
- Scenic Area and Visual Quality Objectives designation via District Manager letters dated January 7, 1998, September 8, 1998, and March 23, 2000;
- Order to Establish Objectives for a Recreation Site, Recreation Trail, or Interpretive Site (July 25, 1997);
- Order to Establish Objectives for a Recreation Site and Recreation Trail or Interpretive Site (November 8, 1996);
- Various GAR orders; and,
- the FPPR (for resource values not addressed in the Kalum SRMP LUOR or other orders).

2.1 Soil in the Kalum FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s. 5, Effective January 31, 2004	
Mandatory Practice Requirements from the FPPR	FPPR ss. 37, 38, 39, & 40	
Practice Requirement(s) Eligible for Exemption	FPPR s.12.2	<u>Decision</u> : Exemption per FPPR s. 12.2 applied as follows - FPPR ss. 35 & 36 adopted as Result, except for Operations in Alwyn Creek Watershed where Result 2.1.1.1 applies.

Objective 2.1.1 For soils set by Government

The objective for soils set by Government is, without unduly reducing the supply of timber from BC's forests, to conserve the productivity and hydrologic function of soils.

2.1.1.1 Result for soils in the Kalum FDU

During the term of this FSP the FSP holder will undertake to comply with sections 35 and 36 of the FPPR.

2.1.1.2 Result for soils in the Alwyn Creek Watershed

Within the Alwyn Creek watershed, during the term of this FSP the FSP holder will:

1. not construct new roads until an equivalent amount of existing road is deactivated; and,
2. prior to submission of new cutting permits for approval, complete a watershed assessment that confirms the locations of road deactivation and new road construction.

* Abbreviated Relevant FPPR sections:

FPPR s.12.2 – conditional exemption for s.35 or 36 possible with inclusion of proposed results for soils

FPPR s.35 – soil disturbance limits must not exceed 5% for sensitive soils, 10% for non-sensitive soils, and 25% for roadside work areas of the net area to be reforested within a standards unit of a cutblock, with exceptions to exceed for ... (see FPPR for full result or strategy).

FPPR s.35 (5)(a)(iii) – Required to rehabilitate an area of compacted soil that is a minimum of 1 hectare in size (see FPPR for full result or strategy).

FPPR s.36 (1) – permanent access structures within a cutblock must not exceed 7% of the cutblock, with exceptions to exceed for ... (see FPPR for full result or strategy).

FPPR s.36 (2) – if permanent access structures exceed limits due to topography, engineering constraints or safety of road users (s.36 [1 (a and b)]), the agreement holder must ensure that the soil disturbance limit is exceeded as little as possible (see FPPR for full practice standard).

FPPR s.37 – primary forest activities must not cause a landslide that has adverse effect on objectives set by government (see FPPR for full practice requirement).

FPPR s.38 – primary forest activities must not cause a gully process that has adverse effect on objectives set by government (see FPPR for full practice requirement).

FPPR s.39 – temporary and permanent access structures must maintain natural surface drainage patterns on the area both during and after construction (see FPPR for full practice requirement).

FPPR s.40 – authorized person who constructs or deactivates a road must ensure that the soil exposed is re-vegetated within two years if erosion of soil will cause sedimentation to enter stream, lake, or wetland; and re-vegetation would materially reduce the likelihood of erosion. (see FPPR for full practice requirement).

2.2 Timber in the Kalum FDU

Reference Information for this Objective

Type of Objective	Land Use Objective – Kalum SRMP Objectives 6 & 13 Objective Set in Regulation – FPPR s. 6 Effective January 31, 2004	
Mandatory Practice Requirements from the FPPR	FPPR ss. 41, 42, 43, 44, 45, & 46	
Practice Requirement(s) Eligible for Exemption	None	

Objective 2.2.1 For timber set by Government

The objective set by government for timber is to:

1. maintain or enhance an economically valuable supply of commercial timber from British Columbia's forests;
2. ensure that delivered wood costs, generally, after taking into account the effect on them of the relevant provisions of this regulation and of the Act, are competitive in relation to equivalent costs in relation to regulated primary forest activities in other jurisdictions; and,
3. ensure that the provisions of this regulation and of the Act that pertain to primary forest activities do not unduly constrain the ability of a holder of an agreement under the *Forest Act* to exercise the holder's rights under the agreement.

Objective 2.2.2 For tree species composition from the Kalum SRMP

The objective for tree species composition as set out in the Kalum SRMP, Objective 6, is to maintain the natural composition of dominant tree species across each landscape unit and throughout the rotation.

2.2.2.1 Result for timber and species composition in the Kalum FDU

During the term of this FSP, the FSP holder will ensure that blocks harvested by the FSP holder are reforested to at least the minimum stocking standards that apply to this FSP.

*** Abbreviated Relevant sections of the FPPR:**

FPPR s.41 – an agreement holder who (modification of insect behaviour) uses trap trees and pheromones to concentrate insect populations must ensure that the insect brood is destroyed before the insects emerge (see FPPR for full practice standard.)

FPPR s.42 – a person who uses livestock for site preparation or brush control must ensure they take measures to: minimize conflict with wildlife that could prey on livestock; prevent the transmission of disease from livestock to wildlife, maintain the health of livestock (see FPPR for full practice standard.)

FPPR s.43 – a person who plants trees to establish a free growing stand must use only seed registered, stored, selected and transferred in accordance with standards established by the chief forester (see FPPR for full practice standard.)

FPPR s.44, 45, 46 – establish a free growing stand that meets the applicable stocking standards and free growing height by a date no more than 20 years from the commencement date of harvest (see FPPR for full practice standards.)

2.3 Cultural Heritage Resources in the Kalum FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s. 10, Effective January 31, 2004
Conditional Exemptions	None
Mandatory Practice Requirements	n/a

Objective 2.3.1 For cultural heritage resources set by Government

The objective set by government for cultural heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people and not regulated under the Heritage Conservation Act.

2.3.1.1 Strategy for First Nations cultural heritage resources in the Kalum FDU

During the term of this FSP, the FSP holder will conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and not regulated under the Heritage Conservation Act by:

1. identifying known sites (location, nature and extent of cultural heritage resources) proximal to proposed harvest blocks and roads by conducting an initial review of known information sources and documenting the results;
2. providing the results of the initial review to potentially affected First Nations identified through the Consultative Areas Database and requesting for the First Nations to provide any additional information related to the cultural heritage resources that may be present and potentially affected by the proposed blocks and roads;
3. carrying out a Cultural Heritage Resource Evaluation¹ before timber harvesting or road construction is authorized in areas:

¹ **Cultural Heritage Resource Evaluation** is defined as a process conducted by a qualified person, consisting of these steps:

1. record the location of the cultural heritage resource;
2. evaluate the direct impact of the planned development on the cultural heritage resource;
3. if necessary, prepare recommendations in order to conserve, mitigate impacts, or, as required, protect the cultural heritage resource at the location, considering:

- a. that have a high archaeological potential as identified in an archaeological overview assessment or a Cultural Heritage and Resource Evaluation (CHRE) for the area; and/or,
 - b. for which site-specific information regarding cultural heritage resources is brought forward or made available to the FSP holder by a First Nation or government.
- 4. providing the results of the Cultural Heritage Resource Evaluation to potentially affected First Nations identified through the Consultative Areas Database prior to conducting operations; and,
- 5. conducting all harvesting, road construction, and mechanical site preparation activities consistent with recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (2) above, that are practicable and are required to conserve or, if necessary, protect a cultural heritage resource if it is valuable and scarce, to the extent of its historical use; including for previously unidentified cultural heritage resources encountered during harvesting, road construction, or mechanical site preparation activities:
 - a. protecting the CHR to the extent necessary until a Cultural Heritage Resource Evaluation is carried out; and,
 - b. continuing operations in a manner that is consistent with recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (a) above that are practicable and are required to conserve or, if necessary, protect the cultural heritage resource if it is valuable and scarce, to the extent of its historical use.

2.3.1.2 Strategy for timber harvesting within proposed treaty settlement lands in the Kalum FDU

The FSP holder will not harvest timber within known proposed treaty settlement lands during the term of this FSP except by agreement with the affected First Nation, and according to Strategy 2.3.1.1.

- a. the relative value or importance of the cultural heritage resource to a traditional use by an aboriginal people;
- b. the relative abundance or scarcity of the cultural heritage resource;
- c. the historical extent of the traditional use of the cultural heritage resource; and,
- d. the impact on the FSP holders government granted timber harvesting rights of conserving or protecting the cultural heritage resource.

2.4 Visual Quality in the Kalum FDU

Reference Information for this Objective

Type of Objective	<p>Land Use Objectives – Kalum SRMP Objectives 15 and 16, Effective April 28, 2006.</p> <p>Objective Enabled by Regulation – FRPA ss. 180 (c) and 181 for grand parenting scenic areas, and GAR s. 17 for grand parenting VQOs – Kalum District Manager letters established VQOs and designated Scenic Areas in the Kalum District, Effective January 7 1997, September 8, 1998 and March 23, 2000.</p> <p>Not Applicable - Objective Set in Regulation – FPPR s. 9.2 (2) visual quality for scenic areas established by October 24, 2002 and for which there is no visual quality objective, Effective January 31, 2004 – Not Applicable because scenic areas in the Kalum FDU have established VQOs.</p>
Scenic Areas with VQOs established at May 31, 2016)	Kalum TSA and Nass TSA

Objective 2.4.1 For visual quality in the Kalum FDU

The objective for visual quality for the Kalum FDU is to ensure that the altered forest landscape² for scenic areas meets the visual quality objective for the scenic area.

2.4.1.1 Result for visual quality in the Kalum FDU

During the term of this FSP, for scenic areas identified on the Kalum SRMP Visual Quality Map (see Appendix III, Figure 14. Kalum SRMP Map – Visual Quality), the FSP holder will, with the support of visual design techniques, carry out forest activities in scenic areas in a manner that is consistent with the visual quality objective, except:

1. in those circumstances where the results of a catastrophic event (windthrow, landslide, etc.) exceed the scale criteria (percent alteration guideline) for a VQO , road construction and/or harvesting activities will be:
 - a. planned to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,

² **Altered forest landscape categories** – are defined in this FSP according to the FPPR s.1 as:

Preservation means consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is very small in scale, and not easily distinguishable from the pre-harvest landscape;

Retention means consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is difficult to see, small in scale, and natural in appearance;

Partial Retention means consisting of an altered forest landscape in which the alteration, when assessed from a significant viewpoint, is easy to see, small to medium in scale, and natural and not rectilinear or geometric in shape;

Modification means consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is very easy to see, is large in scale and natural in its appearance, or small to medium in scale but with some angular characteristics; and,

Maximum Modification means consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is very easy to see, and is either very large in scale, rectilinear and geometric in shape, or both.

- b. only carried out upon approval of the Delegated Decision Maker;
2. in those circumstances where a cutblock or road borders a previously existing cutblock, road, structure or other disturbance or natural feature that is rectilinear, geometric in shape, or otherwise does not appear natural in the landscape, road construction and/or harvesting activities will be carried out to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,
3. in those circumstances where the results of a forest health impact exceeds the scale criteria (percent alteration guideline) for a VQO and harvesting or road construction is required to address the threat from insects, disease, or decay, road construction and /or harvesting activities will be:
 - a. planned to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,
 - b. only carried out upon approval of the Delegated Decision Maker.

Objective 2.4.2 For visual quality from the Sue Channel / Hawkesbury Island Protected Area from the Kalum SRMP

Objective 16 from the Kalum SRMP is to maintain the visual quality of the area visible from the Sue Channel/Hawkesbury Island protected area as identified on the Kalum SRMP Map 8 (see Appendix III, Figure 11), by applying single tree or group selection silviculture system, and limiting the maximum opening size to 1-2 tree lengths.

2.4.2.1 Result for visual quality from the Sue Channel / Hawkesbury Island Protected Area

During the term of this FSP, within the area visible from the Sue Channel/Hawkesbury Island protected area, the FSP holder will apply either:

1. single tree selection silviculture systems; or,
2. group selection silviculture systems where the maximum individual opening size of harvest areas (referenced in the SRMP as 1-2 tree lengths) will be 2 tree lengths in length and width, measured as a maximum 80 metres of length by 80 m of width.

2.5 Recreation in the Kalum FDU

Reference Information for this Objective

Type of Objective	Objective Enabled by Regulation – FRPA s. 56, 180 (j), (k), 181 and GAR s.5(f), (g) through the: <ol style="list-style-type: none"> 1. Order to Establish Objectives for a Recreation Site, Recreation Trail, or Interpretive Site (July 25, 1997); and, 2. Order to Establish Objectives for a Recreation Site, Recreation Trail, or Interpretive Site (November 8, 1996)
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Objective 2.5.1 For recreation in the Kalum FDU

The objectives for Recreation Sites and Trails are as described in Appendix V – Applicable Government Action Regulation Orders .

2.5.1.1 Result for recreation sites and trails in the Kalum FDU

During the term of this FSP the FSP holder will:

1. for Recreation Sites with established objectives in Table 2:
 - a. conduct primary forest activities according to the established objectives;
 - b. address potential losses due to fire, wind, or forest health factors in consultation with the Coast Mountains Resource District Manager; and,
 - c. at the cessation of primary forest activities to sites affected by primary forest activities of the FSP holder, re-establish access consistent with the objective for the site;
2. for Recreation Trails with established objectives in Table 3:
 - a. conduct primary forest activities according to the established objectives;
 - b. address potential losses due to fire, wind, or forest health factors in consultation with the Coast Mountains Resource District Manager;
 - c. construct a crossing of the trail if the crossing is required to access productive forest land that would otherwise be isolated;
 - d. deactivate each trail crossing once it is no longer required; and,
 - e. re-establish or alternatively re-locate the trail in instances where a trail crossing disturbs it, at a time mutually agreeable to the FSP holder and the Ministry responsible for the trail; and,
3. for Recreation Trails With Motorized Restrictions in Table 4:
 - a. not conduct motorized activity from July 1 to October 31 on the Big Cedar, Robinson Ridge, and Sterling Mountain trails except by written exemption from the Delegated Decision Maker for the Ministry responsible for Recreation Trails for the purpose of carrying out silviculture or planning activities (or for access to silviculture or planning activities); and,
 - b. not conduct motorized activity on the Onion Lakes Recreational Ski Trails during the winter months under snow conditions while the trails are being actively used for recreational skiing.

Table 2. Recreation Sites with Established Objectives in the Kalum FDU

Site or Trail Feature Type	Feature Name / Order or File # (Date)
Recreation Sites with Established Objectives	<ul style="list-style-type: none"> • Clearwater Lakes Recreation Site / 3506 (March 24, 1999) • Deception Lake Recreation Site / Decommissioned Site • Glory Hole Recreation Site / 0603 (May 10, 1996) • Pine Lake Recreation Site / 3525 (May 10, 1995) • Red Sand Lake Interpretive Forest Site / 6449 01-06 (May 21, 1999) • West Lake Recreation Site / 6418 (May 1, 1997)

Table 3. Recreation Trails with established Objectives in the Kalum FDU

Site or Trail Feature Type	Feature Name / Order or File # (Date)
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Site or Trail Feature Type	Feature Name / Order or File # (Date)
Recreation Trails with Established Objectives	<ul style="list-style-type: none"> • Big Cedar Recreation Trail / 6459 (January 31, 1998) • Hai Lake Recreation Trail / (Part of Hai Lake Provincial Park) • Maroon Mountain Recreation Trail / 0627 (January 15, 1996) • Mt. Elizabeth Recreation Trail / 0604 (May 10, 1996) • Onion Lake Recreation Ski Trails and Stadium / 6409 (May 21, 1999) & 16186 (October 18, 2010) • Pine Lake Recreation Trail / 3525 (May 10, 1995) • Robinson Lake and Ridge Recreation Trail / 0992 & 6596 (January 28, 1999) • Sterling Mountain Recreation Trail / 6321 (June 21, 1995) • Thornhill Mountain Recreation Trail and Bike Trails / 135988 (May 7, 2011) & 135986 (May 1, 2007)

Table 4. Recreation Trails with Motorized Restrictions

Site or Trail Feature Type	Feature Name / Order or File # (Date)
Recreation Trails with Motorized Restrictions	<ul style="list-style-type: none"> • Big Cedar Recreation Trail / 6459 (January 31, 1998) • Onion Lake Recreation Ski Trails 6409 / (May 21, 1999) • Robinson Ridge Recreation Trail / 6596 (January 28, 1999) • Sterling Mountain Recreation Trail / 6321 (June 21, 1995)

2.6 Water Resources and Riparian Areas in the Kalum FDU

Reference Information for this Objective

Type of Objective	<p>Land Use Objectives – Kalum SRMP Objective 17</p> <p>Objective Set in Regulation – FPPR s. 8 (for riparian areas) & 8.2 (for community watersheds)</p> <p>Objective Enabled by Regulation – FRPA ss. 180 (e) and 181 for grand parenting community watersheds</p>
Conditional Exemptions	FPPR ss. 12.3, 12.31, 12.32
Mandatory Practice Requirements	FPPR ss. 54, 58, 62, & 63
Practice Requirement(s) Eligible for Exemption	<p>Exemption per FPPR ss.12.3, 12.31, and 12.32 applied as follows:</p> <p><u>Decision:</u> per FPPR s. 12.3, the FSP holder commits to comply with FPPR ss. 47, 48, 49, 50, 51, 52(2) and 53</p> <p>Per FPPR s. 12.31, the FSP holder adopts FPPR ss. 55, 56, and 57 as results or strategies in fisheries sensitive watersheds.</p> <p>Per FPPR s. 12.32, the FSP holder adopts FPPR ss. 59, 60 & 61 as results or strategies in Community Watersheds.</p>

Objective 2.6.1 For water, fish, wildlife, and biodiversity within riparian areas set by Government

The objective set by government for water, fish, wildlife and biodiversity within riparian areas is, without unduly reducing the supply of timber from British Columbia's forests, to conserve at the landscape level the water quality, fish habitat, wildlife habitat, and biodiversity associated with those riparian areas.

2.6.1.1 Result for riparian areas in the Kalum FDU

During the term of this FSP, for primary forest activities in riparian management areas, riparian reserve zones, and riparian management zones (RMZ) described in FPPR Sections 47, 48, and 49, the FSP holder will:

1. undertake to comply with FPPR Sections 50, 51, 52(2), and 53 for primary forest activities; and,
2. retain basal area within riparian management zones (RMZ) at levels in accordance with Table 5 where the retained basal area may be distributed in a non-uniform manner along the stream resulting in clumps of retained trees interspersed with areas that have no retention.

Table 5. Summary of Riparian and Basal Area Retention Levels by Riparian Class – Kalum FDU

Riparian Class	Area or Stream Width	Riparian Management Area Width ¹	Riparian Reserve Zone Width ¹	Riparian Management Zone Width ¹	Basal Area Retention within RMZ
Fish Streams: FPPR s. 47					
S1-A	> 100 m	100 m	0 m	100 m	>= 20 %
S1-B	20-100 m	70 m	50 m	20 m	>= 20 %
S2	5 – 20 m	50 m	30 m	20 m	>= 20 %
S3	1.5-5 m	40 m	20 m	20 m	>= 20 %
S4	< 1.5 m	30 m	0 m	30 m	>= 10 %
Non-Fish Streams: FPPR s. 47					
S5	> 3 m	30 m	0 m	30 m	>= 10 %
S6	< 3 m	20 m	0 m	20 m	N/A
Wetlands: FPPR s. 48					
W1	> 5 ha	50 m	10 m	40 m	>= 10 %
W3	1 - 5 ha	30 m	0 m	30 m	>= 10 %
W4	0.5 - 1 ha	30 m	0 m	30 m	>= 10 %
W5	Complex > 5 ha	50 m	10 m	40 m	>= 10 %
Lakes: FPPR s. 49					
L1-A	> 1000 ha, or designated	0 m	0 m	0 m	>= 10 %
L1-B	5 - 1000 ha	10 m	10 m	0 m	>= 10 %
L3	1 – 5 ha	30 m	0 m	30 m	>= 10 %
L4	0.5 – 1 ha	30 m	0 m	30 m	>= 10 %

¹ width measured in slope distance.

Objective 2.6.2 For water in community watersheds set by Government

Without unduly reducing the supply of timber from BC's forests, the objective for water in community watersheds is, where water is being diverted for human consumption through a licenced waterworks in a community watershed, to prevent cumulative hydrological effects of primary forest activities from resulting in a material adverse impact on either:

1. the quantity or timing of flow of the water from the waterworks; or,
2. human health that cannot be addressed by water treatment required under an enactment or the waterworks licence.

Objective 2.6.3 For water in community watersheds from the Kalum SRMP

The objective for water in Community Watersheds as set out in the Kalum SRMP (Objective 17) is to maintain the quality, quantity, and natural flow regimes of water in watersheds identified on the Kalum SRMP Map 9 (see Appendix III, Figure 12), as newly established Community Watersheds. Ensure a clear-cut equivalency of less than 20% of the watershed area in sub-basins larger than 250 hectares, unless a different threshold is determined as being more appropriate as a measure of maintenance of natural flow regimes.

2.6.3.1 Result for water in Kalum FDU community watersheds

For the purposes of section 8.2 of the FPPR, during the term of this FSP the FSP holder will comply with FPPR sections 58, 62, and 63, and adopts FPPR sections 59, 60, 61, and 62 as results for Objective 2.6.2 and Objective 2.6.3 for the following established community watersheds:

1. Deep Creek;
2. Drake Creek;
3. Eneeksagilaguaw Creek;
4. Gitzyon Creek;
5. Gossen (Gossen Creek);
6. Hatchery Creek;
7. Kleanza (Singlehurst Creek) Wathl Creek;
8. Ksa Miintl Am Hawak Creek;
9. Rosswood (Clear Creek); and,
10. Usk (Skovens Brook).

2.6.3.2 Strategy for water in community watersheds in the Kalum FDU

The FSP holder will, in addition to complying with Results 2.6.1.1, and 2.6.3.1, during the term of this FSP:

1. design cutblocks and roads in a manner that is consistent with the objective of ensuring a clear-cut equivalency area (ECA) of less than 20% of the watershed area in sub-basins larger than 250 hectares; or,
2. design cutblocks and roads, in consultation with a qualified person, to a different ECA threshold than 20% if a different ECA is determined to be more appropriate as a measure of maintenance of natural flow regimes.

*** Abbreviated Relevant FPPR sections:**

FPPR s.8.2 – For community watersheds... prevent the cumulative effects of primary forest activities ... resulting in a material adverse impact on the quantity or timing of the flow of water... or the water having a material adverse impact on human health (see FPPR for full objective)

FPPR s.12.3 – Conditional Exemption (subject to the minister's approval) from one or more of FPPR sections 47-53 respecting objectives set by government in FPPR section 8 for water, fish, wildlife, and biodiversity.

FPPR s.12.31 – Conditional Exemption (subject to the minister's approval) from one or more of FPPR sections 55-57 respecting objectives set by government in FPPR section 8.1 pertaining to cumulative hydrological effects on fish habitat fisheries sensitive watersheds.

FPPR s.47 (4-6) – stream riparian classes, minimum widths on each side of the stream for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.48 (3-5) – wetland riparian classes, minimum widths on each side of the wetland for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.49 (2-3) – lake riparian classes, minimum widths on each side of the lake for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.50 (1) – a person must not construct a road in a RMA unless there is a higher risk of sediment delivery outside of the RMA, there is no other option for road location or it is a stream crossing (see FPPR for full results or strategies).

FPPR s.50 (2) – if a road is constructed within a riparian management area (RMA) road maintenance activities must not occur beyond the clearing width of the road (see FPPR for full practice standard).

FPPR s.50 (3) – a person must not remove gravel or fill from within a RMA unless it is within the road prism, at a stream crossing or there is no other practical option (see FPPR for full practice standard).

FPPR s.51 (1) – a person must not cut, modify or remove trees in a RRZ unless... (see FPPR for full results or strategies).

FPPR s.51 (1-3) – no silviculture treatments within a RRZ (see FPPR for full practice standards).

FPPR s.52 (2) – maintain enough trees in the RMZ to maintain stream channel and bank stability (see FPPR for full result or strategy).

FPPR s.53 – must maintain tree and vegetation cover in the RMA of temperature sensitive streams to prevent an increase in stream temperature and impacts to fish (see FPPR for full result or strategy).

FPPR s.54 – a primary forest activity on the coast must not cause a fan destabilization that has adverse effects on objectives set by government (see FPPR for full practice standard).

FPPR s.55 – temporary access stream crossings must protect stream channel and stream banks and remove crossing when it is no longer required (see FPPR for full practice standards).

FPPR s.56 – ensure that primary forest activity does not adversely affect fish passage (see FPPR for full practice standard).

FPPR s.57 – conduct primary forest activities at a time and in a manner that is unlikely to harm fish or fish habitat (see FPPR for full practice standard).

FPPR s.58 – agreement holder must not use livestock or construct a corral within a RMA (see FPPR for full practice standard).

FPPR s.59 – agreement holder must ensure that primary forest activity does not cause material that is harmful to human health to be deposited in, or transported to water diverted for human consumption (see FPPR for full practice standard).

FPPR s.60 – agreement holder must ensure that primary forest activity does not damage a licenced waterworks; and must not harvest timber or construct a road within 100m upslope of a licenced waterworks... unless sediment delivery to the intake is not increased (see FPPR for full practice standard).

FPPR s.61 – agreement holder must ensure that timber harvesting or construction of excavated or bladed trails in a community watershed does not cause sediment harmful ... to enter a stream ... diverted for human consumption (see FPPR for full practice standard).

FPPR s.62 – to prevent interference with the subsurface flow path of a drainage area that contributes to a spring that is the source of water for a licenced waterworks...(and identified by the minister), agreement holder must not construct a road closer than 100m upslope of the spring unless construction does not interfere with subsurface flow... or as approved by the minister (see FPPR for full practice standard).

FPPR s.63 – for fertilizer applications besides spot applications, agreement holder must not apply fertilizer closer than 100m upslope of a licenced waterworks, or within 10 m of a perennial stream observable from an aircraft... if application results in elevated nitrate nitrogen and chlorophyll levels above specified limits (see FPPR for full practice standard).

2.7 Wildlife in the Kalum FDU

Reference Information for this Objective

Type of Objective	Land Use Objectives – Kalum SRMP Objectives 5 (wildlife tree patches), 8 (wildlife movement – Kiteen/Cedar), 9 (wildlife movement Williams/ Thomas-Clore), 11 (forage supply for Grizzly), 12 (Lakelse wildlife habitat) Objectives Set in Regulation – FPPR s7(2) SAR Notice Objectives Enabled by Regulation – GAR s. 9 (general wildlife measures), 10 (wildlife habitat areas & objectives), 11 (wildlife habitat features) & 12(1) (Ungulate winter range)
Decisions Creating	FPPR s7(2) Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Kalum Forest District: December 30, 2004 (includes marbled murrelet, coastal tailed frog, grizzly bear) GAR Order: Ungulate Winter Range – Order #U-6-001 Mountain goat (Kalum TSA) November 24, 2005 GAR Order: Coastal Tailed Frog Wildlife Habitat Area – Order #6-058, #6-059, and #6-060 to #6-067: March 28, 2006 GAR Order: Ungulate Winter Range – Order #6-009 Moose (Kalum TSA, Cascadia TSA, Pacific TSA, TFL 1 and TFL41): April 21, 2015
Mandatory Practice Requirements	FPPR ss. 69 & 70
Practice Requirement(s) Eligible for Exemption	None

Objective 2.7.1 For wildlife set by Government

In respect of the FPPR section 7(1), the objective set by government for wildlife is, without unduly reducing the supply of timber from British Columbia's forests, to conserve sufficient wildlife habitat in terms of amount of area, distribution of areas and attributes of those areas, for:

1. the survival of species at risk;
2. the survival of regionally important wildlife; and,
3. the winter survival of specified ungulate species.

2.7.1.1 Result for the conservation of wildlife habitat per Objective 2.7.1

In respect of Objective 2.7.1 and FPPR s. 7 (2) Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Kalum Forest District, during the term of this FSP the FSP holder will:

1. with respect to marbled murrelet, adopt biodiversity Strategies 2.8.2.1 (Seral Stage and Patch Size), and 2.8.4.1 (Old Seral Forest);
2. with respect to coastal tailed frog, comply with GAR Orders #6-058, #6-059, and #6-060 to #6-067;
3. with respect to Grizzly bear, adopt Result 2.7.2.1, Strategy 2.7.2.2 and Result 2.7.2.3;
4. with respect to mountain goat, comply with GAR Order: Ungulate Winter Range – Order #U-6-001;

5. with respect to moose, comply with GAR Order: Ungulate Winter Range – Order #6-009; and,
6. generally, adopt biodiversity results and strategies in sections 2.8.2.1 - Strategy for seral stage and patch size distribution in the Kalum FDU, 2.8.3.1 - Strategy for disturbance in OGMAs in the Kalum FDU, 2.8.4.1 - Strategy for old seral forest retention in identified undeveloped watersheds in the Kalum FDU, 2.8.5.1 - Result for rare plant communities on the Skeena Islands in the Kalum FDU, and 2.8.6.1- Result for wildlife tree retention in the Kalum FDU as results and strategies for the conservation of regionally important wildlife habitat.

Objective 2.7.2 For grizzly bear from the Kalum SRMP

The objective for grizzly bear as set out in the Kalum SRMP (Objective 11) is to maintain the natural level of forage supply for grizzly bears in the watersheds identified on the Kalum SRMP Map 7 (see Appendix III, Figure 10), by:

1. providing an adequate supply of berry feeding (*habitat*);
2. maintaining natural levels of forage supply as present in old growth forests;
3. on the rich and wetter sites³ implementing regeneration and free (*growing*) standards consistent with Kalum SRMP Table 8 (included below as Table 6), accepting variance from these standards based on site-specific factors provided parts a) and b) in this objective will be achieved; and,
4. ensuring that within McKay-Davies and Copper watersheds, no more than 30% of the forested land base, excluding hardwood, will be between 25 and 100 years old.

2.7.2.1 Result for grizzly bear wildlife habitat areas in the Kalum FDU

In respect of Objective 2.7.2 (1), (2) and (3):

1. where Grizzly Bear wildlife habitat areas (WHA)s are established through an Order under the Government Actions Regulation, the General Wildlife Measures stated in the Order will be adhered to and the FSP holder is exempt from the Results stated in point 3 below;
2. despite (1) above, where the FSP holder has been granted an exemption under FPPR section 92(1) from the General Wildlife Measures stated in the Order, the FSP holder will apply wildlife measures and any conditions set out in the exemption approval; and,
3. where Grizzly Bear Wildlife Habitat Areas have not been designated through an Order under the Land Act, for those WHA's in draft GAR Order #6-287, during the period of the FSP the FSP holder will ensure that primary forest activities will maintain mature and old-growth conditions within the WHA polygons and will only harvest timber and/or construct road within the WHA polygon under the following circumstances:

³ The rich and wetter sites are defined in CWHws1&2 as site series 06, 07, 08, 09, and 11; in CWHvm1 as site series 07, 08, 09, 10, and 14; and in CWHvm2 as site series 08, and 11.

- a. a field assessment completed by a QP determines the WHA has been inaccurately mapped;
- b. the road and/or harvest serves operational or safety requirements including guyline or tailholds or limits impacts on adjacent environmental values and cumulative impacts will not exceed:
 - i. 1 hectare of productive forest area in WHA's with >10 ha and <50 ha productive forests area;
 - ii. 2 hectares of productive forest area in WHA's with >50 ha and <100 ha productive forests area; or,
 - iii. the greater of 3 ha or 1% of productive forest area in WHA's with > 100 ha of productive forest area;
- c. Skeena Sawmills operations will follow the recommendations from a report prepared by a qualified professional who has determined the conditions under which the WHA's ability to provide adequate levels of forage supply will not be compromised by harvest; and,
- d. no pesticides will be applied within a WHA.

2.7.2.2 Strategy for maintaining grizzly bear foraging habitat in the Kalum FDU

In respect of Objective 2.7.2, the FSP holder will ensure that stocking standards for the site associations in Table 6 and Appendix I – Stocking Standards are met when the free growing milestone is declared for harvested areas within Grizzly bear identified watersheds identified on Kalum SRMP Map 7 (see Appendix III, Figure 10 and Appendix I – Stocking Standards).

Table 6. Identified high value Grizzly bear forested habitat site series in the Coastal Western Hemlock Zone of the Kalum TSA

Site Association	Subzone Variants of the CWH Zone	Free Growing Stocking Standards (Stems per ha)		
		Target	Minimum	Maximum
BaSs-Devil's club	vm1 and vm2	600	400	660
BaCw-Devil's club	ws1 and ws2	600	400	660
Cwss-Skunk cabbage	vm1 and vm2; ws1 and ws2	400	200	440
Ss-salmonberry and Act-Red-osier dogwood	vm1 and vm2; ws1 and ws2	500	200	550

Source: Kalum SRMP – 2006, Table 8.

2.7.2.3 Result for Grizzly Bear wildlife habitat areas in the Kalum FDU

In respect of Objective 2.7.2 (4), to maintain the natural level of forage supply for grizzly bears, the FSP holder will not carry out or authorize harvesting operations within the Copper or the McKay-Davies Grizzly Bear Watersheds if more than 30% of the forested land base, excluding hardwoods, is between 25 and 100 years old unless an analysis of the Grizzly Watershed Unit indicates that having more than 30% of the area within the Skeena Sawmills portion will not result in the 30% threshold being exceeded for the entire Grizzly Bear watershed and other tenure holders will not be unduly impacted.

Objective 2.7.3 For landscape connectivity (for wildlife movement) from the Kalum SRMP

The objective for landscape connectivity as set out in Kalum SRMP objectives 8 & 9 is to:

1. to maintain forest stand structure and function for continued wildlife movement through the level pass between the Kiteen (Ksi Gahl't'in) and Cedar drainages identified on Kalum SRMP Map 5, retaining 100 % of forested area within polygon "A", and limiting timber harvesting to partial cutting systems within polygon "B"; and,
2. to maintain forest stand structure and function to facilitate wildlife movement, in the level pass between the Williams and Thomas/Clore watersheds identified on Kalum SRMP Map 5.

2.7.3.1 Result for landscape connectivity in the Kalum FDU

During the term of this FSP the FSP holder will ensure that:

1. within the identified area through the level pass between the Kiteen and Cedar drainages as shown on Kalum SRMP Map 5 (see Appendix III, Figure 8):
 - a. within polygon "A", 100% of the forested area is retained; and,
 - b. within polygon "B", timber harvesting is limited to partial cutting systems.
2. activities within the "Williams and Thomas/Clore SRM" wildlife connectivity corridor identified on Kalum SRMP Map 5 (see Appendix III, Figure 8) for the maintenance of wildlife movement options in the low level pass between the Williams and Thomas/Clore are limited to:
 - a. providing or maintaining access to timber that would be otherwise isolated; or,
 - b. removal of trees threatened or infested by insects, disease, or fire where there is a risk to forests or forested land outside of the corridor, as agreed by the Coast Mountains Resource District Manager (or his/her delegate); or,
 - c. activities related to fire control.

Objective 2.7.4 For wildlife in the Lakelse SRMZ from the Kalum SRMP

The objective for the Lakelse Special Resource Management Zone (SRMZ) (objectives 12) as set out in the Kalum SRMP is to maintain wildlife habitat and biodiversity within the Lakelse River Special Resource Management Zone identified on Kalum SRMP Map 8 (see Appendix III, Figure 11), [specifically]:

1. in Subzone 1 - no harvesting of timber or blowdown salvage will occur; and,
2. in Subzone 2 - early seral stage target is a maximum of 27%; the maximum opening size is 15 hectares; a minimum 15 % retention within the cut blocks is required to add structural diversity; and, in any five year planning cycle at least 50% of the volume harvested is to be harvested by using a selection silviculture system.

2.7.4.1 Result for wildlife in the Lakelse SRMZ

During the term of this FSP, the FSP holder will ensure that within the Lakelse SRMZ subzones:

1. in Subzone 1, no harvesting or road construction will be carried out unless the Coast Mountains Resource District Manager agrees that harvesting or road construction is necessary for control of insects, disease, or fire.
2. in Subzone 2, primary forest activities will result in:
 - a. early seral stage (i.e. less than 40 years) of less than 27% of the subzone area; and,
 - b. a maximum opening size of less than 15 hectares (net), with a minimum retention level (WTRA and other reserves) of 15% of gross block area.
3. at least 50% of the volume harvested will be harvested by using a selection silviculture system.

*** Abbreviated Relevant FPPR sections:**

FPPR s.69 – An authorized person who carries out primary forest activities on an area must comply with each general wildlife measure that applies to the area.

FPPR s.70 (2) – An authorized person who carries out a primary forest activity must ensure that the primary forest activity does not damage or render ineffective a wildlife habitat feature.

FPPR s. 92(1) – Subject to subsection (2), if the minister responsible for the Forest Act approves a result or strategy in a forest stewardship plan in respect of an established objective that conflicts with a requirement of Part 4 or 5, the minister must exempt the holder of the plan from the requirement that conflicts with the established objective.

FPPR s. 92(2) – if an exemption referred to in subsection (1) is

(a) in relation to section 69 or 70 (2), the minister responsible for the Wildlife Act may attach conditions to the exemption he or she considers necessary to address the conflict, and

(b) in relation to a provision of this regulation other than section 69 or 70 (2), the minister responsible for the Forest Act may attach conditions to the exemption that he or she considers necessary to address the conflict.

2.8 Biodiversity in the Kalum FDU

Reference Information for this Objective

Type of Objective	Land Use Objectives – Kalum SRMP Objective 1 (seral stage), 2 (old seral stage), 3 (old seral stage recruitment), 4 (OGMA), 5 (wildlife trees), 7 (landscape), 10 (rare plants), 13 (Upper Kitsumkalum), & 14 (Upper Copper River). Objectives Set in Regulation – FPPR s. 8 (see also Section 2.6) and 9.1 (wildlife trees)
Conditional Exemptions	FPPR ss. 12.4 & 12.5
Mandatory Practice Requirements	FPPR s. 68 (Coarse woody debris)
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR ss.12.4, 12.5 applied as follows: <u>Decision:</u> For Biodiversity resources and wildlife trees in the Kalum FDU, the FSP holder adopts the Objectives with conditions (as Results and Strategies) as set out in the Kalum SRMP. <u>Decision:</u> The FSP holder also adopts FPPR s. 67 (restriction on harvesting wildlife trees).

Objective 2.8.1 Biodiversity – seral stage distribution from the Kalum SRMP

The objective for Seral Stage Distribution set out in the Kalum SRMP (Objective 1) is to maintain a range of forest seral stages by Biogeoclimatic variant, within each landscape

unit, consistent with Tables 1, 2, and 3 of the Kalum SRMP (see Appendix III, Table 21, Table 22, and Table 23).

Objective 2.8.2 Biodiversity – patch size distribution from the Kalum SRMP

The objective for Patch Size Distribution set out in the Kalum SRMP (Objective 7) is to attain a landscape pattern of patchiness that, over a long term, reflects the natural disturbance patterns as per Table 7 of the Kalum SRMP (see Appendix III, Table 27).

2.8.2.1 Strategy for seral stage and patch size distribution in the Kalum FDU

In respect of Objective 2.8.1 and Objective 2.8.2, during the term of this FSP the FSP holder will ensure that:

1. areas harvested by the FSP holder will be of a size and distribution that emulates the historical temporal and spatial distribution of the Natural Disturbance Types (NDTs) for the forests within the Kalum FDU area;
2. areas harvested by the FSP holder will move towards the patch size and seral stage distribution targets that are in place for the Natural Disturbance Types;
3. in respect of Objective 2.8.1, a seral stage analysis is conducted by landscape unit and natural disturbance type to determine:
 - a. the proportional representation of the landscape units within the Kalum FDU;
 - b. the representation with respect to sensitive areas;
 - c. the need for actions to address seral stage imbalances based on the applicable land use objectives from the Kalum SRMP (Tables 1, 2, and 3).
4. an action plan is prepared to address seral stage imbalances identified in section 3 above;
5. in respect of Objective 2.8.2, a patch size distribution analysis is conducted by landscape unit and natural disturbance type to determine:
 - a. the proportional representation of existing patch sizes within the Kalum FDU;
 - b. the target patch size distribution for the Kalum FDU; and,
 - c. the need for actions to address patch size imbalances, based on the applicable land use objective from the Kalum SRMP (Table 7);
6. an action plan is prepared to address patch size distribution imbalances identified in section 5 above;
7. the action plans to address seral stage and patch size distribution imbalances are carried out; and,
8. a summary of the seral stage and allowable patch size distribution analysis results is completed for the Kalum FDU.

2.8.2.2 Result for seral stage and patch size distribution in the Kalum FDU

During the period of this FSP the FSP holder will ensure that:

1. Every three years, by June 1st, a report summarizing the status of the patch and seral distribution within the Kalum FDU area will be completed. The report will reflect

projected changes (i.e. planned harvest) for at least the upcoming five year period. Where this report indicates movement away from the target levels identified in the Kalum SRMP Objective 1 (Seral Stage targets) and Objective 7 (Patch Size Distribution targets), a rationale will be prepared that describes management strategies for moving towards the target levels; and,

- 2) Within a specified period after the approval of this FSP, harvest activities under this FSP are shown to be static or moving toward the target levels for these areas; this specified period shall be five (5) years for each Landscape Unit, unless otherwise determined by mutual agreement between the FSP holder and the CMR District Manager.

Objective 2.8.3 Biodiversity – Old Growth Management Areas (OGMA) from the Kalum SRMP

The objective for Old Growth Management Areas (OGMA) as set out in the Kalum SRMP is:

1. in respect of the Kalum SRMP Objective 3, to maintain or recruit old seral stage forest, reflective of the full range of ecosystems, including some with interior forest conditions, throughout each rotation within the OGMA's shown on Kalum SRMP Map 4 (see Appendix III, Figure 7). Forest harvesting activities in the OGMA's are limited to insect or disease control measures that are necessary to mitigate severe damage to the habitat attributes in the OGMA's, or other forest values in the landscape; and,
2. in respect of the Kalum SRMP Objective 4, to provide operational flexibility in managing OGMA's by allowing up to 10 hectares or 10% of the individual OGMA area, whichever is less, to be disturbed for one or more of the following purposes:
 - a. for allowing road development where no practicable alternative exist;
 - b. to better reflect physical features that were intended to form the actual boundaries of the OGMA;
 - c. to improve harvest boundary alignment in a way that will contribute to the maintenance of the OGMA;
 - d. to address a compelling forest health issue; or,
 - e. to shift the location of the contiguous area of the OGMA to improve the retention of old forest attributes as identified through field assessment; where,

The allowable disturbance described in (2) above is conditional upon a forest agreement holder identifying and reserving from harvesting an alternative area(s) within the same BEC variant within a landscape unit, provided the alternative area:

3. is of equal or greater extent in total than the area to be disturbed; and,
4. will result in equal or greater retention of key old forest attributes that are understood to be important for biodiversity conservation.

2.8.3.1 Strategy for disturbance in OGMA's in the Kalum FDU

In respect of Objective 2.8.3, during the term of this FSP The FSP holder will ensure that disturbance to OGMA's will not exceed 10 hectares or 10% of an individual Old Growth Management Area (OGMA), whichever is less, as a result of one or more of the following purposes:

- a. to allow for road development where no practicable alternative exist;
- b. to better reflect physical features that were intended to form the actual boundaries of the OGMA;
- c. to improve harvest boundary alignment in a way that will contribute to the maintenance of the OGMA;
- d. to address a compelling forest health issue; or,
- e. to shift the location of the contiguous area of the OGMA to improve the retention of old forest attributes as identified through field assessment.

2.8.3.2 Result for amendment of OGMAs in the Kalum FDU

In respect of Objective 2.8.3, during the term of this FSP The FSP holder will ensure that OGMA Amendments will be in accordance with the approved *Old Growth Management Area (OGMA) Amendment Policy – Skeena Region (February 9, 2011)*.

Objective 2.8.4 Biodiversity – Old seral forest retention in undeveloped watersheds from the Kalum SRMP

The objective for “Old” seral stage forest retention in undeveloped watersheds as set out in the Kalum SRMP, Objective 2, is to maintain old seral stage forest within each undeveloped watershed⁴ listed in Table 4 of the Kalum SRMP and shown on Kalum SRMP Map 3 (see Appendix III, Table 24 and Figure 6), consistent with Table 5 of the Kalum SRMP (see Appendix III, Table 25).

2.8.4.1 Strategy for old seral forest retention in identified undeveloped watersheds in the Kalum FDU

In respect of Objective 2.8.4, during the term of this FSP, the following strategy will apply:

1. prior to harvesting within an undeveloped watershed, the FSP holder will determine the amount of “Old” seral stage forest that exists by Biogeoclimatic Ecological Classification (BEC) site series unit within the portion of the undeveloped watershed that falls within the FDU using Predictive Ecosystem Mapping (PEM) or other surrogate as agreed to by the agency responsible for administering the Kalum SRMP;
2. for the determination of “Old” Forest area:
 - a. BEC site series that amount to less than 10 ha in an undeveloped watershed, the minimum “Old” Seral Forest Targets described in Table 5 of the Kalum SRMP (see Appendix III, Table 25) will not apply; and,
 - b. if the undeveloped watershed includes a conservancy area, then the entire undeveloped watershed area will be assessed for old growth, including the conservancy area;
3. subject to section (1) and (2), for the BEC site series described in Table 5 of the Kalum SRMP (see Appendix III, Table 25):

⁴ Identified undeveloped watersheds in the Kalum SRMP Area include the Jesse, Emsley, Wathlsto, Hugh, Brim, Wahoo, and Owyacumish watersheds.

- a. if the amount of “Old” seral stage forest is at least 95% of the Old Seral Forest target, no action will be undertaken; and,
 - b. if the amount “Old” seral stage forest is below 95% of the Old Seral Forest target, and if there is insufficient old growth, younger forests (prefer Mature) will be designated as “Old” forest recruitment areas to capture the BEC site series; and,
4. section (3) does not apply to the construction of a road if:
- a. the road is necessary to access timber beyond the occurrence of a BEC site series that is below the 95% threshold if that timber would otherwise be isolated from harvest; and,
 - b. terrain conditions such as slope, gradient or terrain stability constrain road locations and dictate that sections of road enter and leave a BEC site series that is below the 95% threshold to access timber that otherwise would be isolated from harvest.

Objective 2.8.5 Biodiversity – rare plant communities from the Kalum SRMP

The objective for rare plant communities as set out in the Kalum SRMP, Objective 10, is to conserve rare plant communities⁵ on the Skeena Islands identified on Kalum SRMP Map 6 (see Appendix III, Figure 9).

2.8.5.1 Result for rare plant communities on the Skeena Islands in the Kalum FDU

In respect of Objective 2.8.5, during the term of this FSP, the FSP holder will ensure that within identified rare plant community complexes on the Skeena Islands Area, harvest operations will:

- 1. where rare plant communities are established through a Ministerial Order, comply with the measures stated in the Order, and the FSP holder is exempt from the Results stated in point 2 below; or,
- 2. be conducted as follows:
 - a. for forest types in rare plant communities (identified as “High” conservation value on the Kalum SRMP Map 6 (see Appendix III, Figure 9)), no harvesting will occur, other than for road construction necessary to access other areas;
 - b. for forest types identified as “Medium” conservation value on Kalum SRMP Map 6, harvesting will be for deciduous trees only (other than incidental harvest of coniferous trees for road construction or safety purposes), employing small-patch harvesting (openings less than 5 ha), with at least 70% of the area maintained at a mid-seral (or older) stage and at least 30% of the areas retained at a mature or older seral stage; and,
 - c. for forest types identified as “Low” conservation value on Kalum SRMP Map 6, at least 30% of the area will be maintained at a mid-seral (or older) stage.

⁵ Rare plant communities identified in the Kalum SRMP for the Skeena Islands include: high bench Sitka Spruce-Salmonberry (CWHws1/07, CWHvm1/09) and middle bench Black Cottonwood-Red-osier Dogwood (CWHws1/08, CWHvm1/10)

Objective 2.8.6 Biodiversity – wildlife tree retention from the Kalum SRMP

The objective for wildlife tree retention as set out in the Kalum SRMP, Objective 5, is to maintain structural diversity in managed stands by retaining wildlife tree patches⁶ in each cut block⁷, over the rotation, consistent with the targets in Table 6 of the Kalum SRMP (see Appendix III, Table 26). Shift or vary targets shown in Table 6 of the Kalum SRMP among cut blocks within a cut block aggregate⁸ based on risks to biodiversity.

2.8.6.1 Result for wildlife tree retention in the Kalum FDU

During the term of this FSP, the FSP holder will:

1. maintain structural diversity in managed stands by retaining wildlife tree retention areas (WTRA) within each cut block, over the rotation, consistent with the targets in Table 6 (see Appendix III, Table 26). Shifting or varying WTRA targets shown in Table 6 among cut blocks within a cut block aggregate will be based on the risk to biodiversity; and,
2. allow natural processes (insect, diseases, blowdown) to occur within WTRA's unless infestation or infection in the WTRA threatens to spread to adjacent forested areas. Where intervention is required, treatment will retain a diversity of structural attributes consistent with (1) above or a suitable replacement WTRA will be located.

* Abbreviated Relevant FPPR sections:

FPPR s. 68 (1) – "... must retain at least the following logs on a cutblock: (a) if the area is on the Coast, a minimum of 4 logs per hectare, each being a minimum of 5 m in length and 30 cm in diameter at one end; (b) if the area is in the Interior, a minimum of 4 logs per hectare, each being a minimum of 2 m in length and 7.5 cm in diameter at one end.

⁶ Wildlife Tree Patch: an area specifically identified for the retention and recruitment of suitable wildlife trees. It can contain a single tree or a group reserve.

⁷ The wildlife tree patches may be external or internal to the cut block.

⁸ Cut block aggregate: A group of cut blocks which are within 10 kilometers radius of each other and where the site plan or cutting permit for these blocks refers to the fact that they are a cut block aggregate.

3.0 NASS SOUTH FDU RESULTS AND STRATEGIES

The Nass South Forest Development Unit is comprised of the same area as the Nass South SRMP Area. An overview map of the Nass South FDU is shown in Figure 2. The Nass South SRMP, provided the basis for the Land Use Objectives Regulation Order - Nass South Sustainable Resource Management Plan (MFLNRO, 2016) which established land use

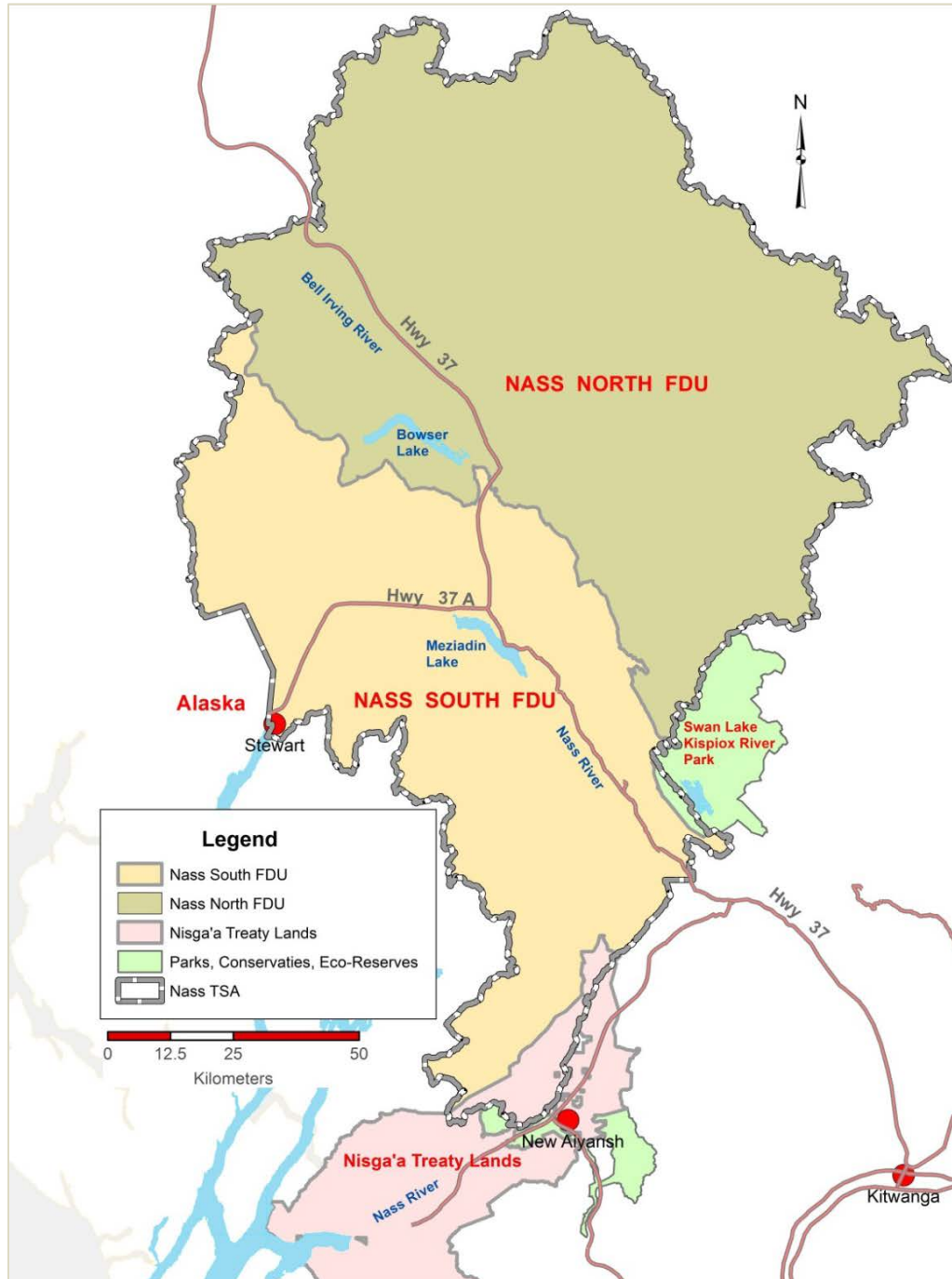


Figure 2. Overview Map of Nass South Forest Development Unit

objectives for the Nass South SRMP Area. Contributions made to the Nass South SRMP by Gitanyow and its representatives and the Nisga'a Nation as represented by Nisga'a Lisims Government (NLG) are acknowledged.

Objectives for the Nass South FDU are derived from:

- a. the Nass South SRMP LUOR Order (February 25, 2016);
- b. the FPPR (for resource values not addressed in the Nass South SRMP LUOR);
- c. Scenic Area and Visual Quality Objectives designation via District Manager letters dated January 7, 1998, September 8, 1998, and March 23, 2000; and,
- d. various GAR orders.

Relevant maps from the Nass South SRMP are included in Appendix IV to provide reference and geographic context to this plan.

3.1 Soil in the Nass South FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s. 5 Objective for Soils	
Mandatory Practice Requirements from the FPPR	FPPR ss. 37, 38, 39, & 40	
Practice Requirement(s) Eligible for Exemption	FPPR s.12.2	Decision: No Exemption per FPPR s. 12.2 sought
	FPPR ss. 35 & 36	Decision: Adopt FPPR ss. 35 & 36 as Results

Objective 3.1.1 For soils set by Government

The objective for soils set by Government is, without unduly reducing the supply of timber from BC's forests, to conserve the productivity and hydrologic function of soils.

3.1.1.1 Result for soils in the Nass South FDU

For the purpose of sections 5 and 12.2 of the FPPR, the holder of this FSP adopts sections 35 and 36 of the FPPR as a result during the term of this FSP.

* Abbreviated Relevant FPPR sections:

FPPR s.12.2 – conditional exemption for s.35 or 36

FPPR s.35 – soil disturbance limits must not exceed 5% for sensitive soils, 10% for non-sensitive soils, and 25% for roadside work areas of the net area to be reforested within a standards unit of a cutblock, with exceptions to exceed for ... (see FPPR for full result or strategy).

FPPR s.35 (5) (a) (iii) – Required to rehabilitate an area of compacted soil that is a minimum of 1 hectare in size (see FPPR for full result or strategy).

FPPR s.36 (1) – permanent access structures within a cutblock must not exceed 7% of the cutblock, with exceptions to exceed for ... (see FPPR for full result or strategy).

FPPR s.36 (2) – if permanent access structures exceed limits due to topography, engineering constraints or safety of road users (s.36 [1 (a and b)]), the agreement holder must ensure that the soil disturbance limit is exceeded as little as possible (see FPPR for full practice standard).

FPPR s.37 – primary forest activities must not cause a landslide that has adverse effect on objectives set by government (see FPPR for full practice requirement).

FPPR s.38 – primary forest activities must not cause a gully process that has adverse effect on objectives set by government (see FPPR for full practice requirement).

FPPR s.39 – temporary and permanent access structures must maintain natural surface drainage patterns on the area both during and after construction (see FPPR for full practice requirement).

FPPR s.40 – authorized person who constructs or deactivates a road must ensure that the soil exposed is re-vegetated within two years if erosion of soil will cause sedimentation to enter stream, lake, or wetland; and re-vegetation would materially reduce the likelihood of erosion. (see FPPR for full practice requirement).

3.2 Timber in the Nass South FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s. 6, Effective January 31, 2004 Non-legal Objective – Nass South SRMP s. 2.7.2, section 2 – June 2012
Mandatory Practice Requirements from the FPPR	FPPR ss. 41, 42, 43, 44, 45, & 46
Practice Requirement(s) Eligible for Exemption	None

Objective 3.2.1 For timber set by Government

The objectives set by government for timber are to:

1. maintain or enhance an economically valuable supply of commercial timber from British Columbia's forests;
2. ensure that delivered wood costs, generally, after taking into account the effect on them of the relevant provisions of this regulation and of the Act, are competitive in relation to equivalent costs in relation to regulated primary forest activities in other jurisdictions; and,
3. ensure that the provisions of this regulation and of the Act that pertain to primary forest activities do not unduly constrain the ability of a holder of an agreement under the *Forest Act* to exercise the holder's rights under the agreement.

3.2.1.1 Result for timber and species composition in the Nass South FDU

During the term of this FSP the FSP holder will ensure that harvested blocks are reforested:

1. with at least the minimum required stocking using species identified in the stocking standards that apply to this FSP;
2. including deciduous species identified through the species acceptability and the biodiversity objectives for the Nass South FDU as suitable species; and,
3. to meet the regeneration delay, free growing heights, and free growing dates as described in the stocking standards that apply to this FSP.

Objective 3.2.2 For Timber Harvesting on treaty settlement lands

The objectives for the timber harvesting on Gitanyow treaty settlement lands (described in the Nass South SRMP s. 2.7.2, section 2) are to avoid timber harvesting within proposed treaty settlement lands (refer to Map 17: Nass South SRMP - Gitanyow Treaty Settlement Lands Offer (2002)).

3.2.2.1 Result for timber harvesting within proposed treaty settlement lands in the Nass South FDU

In respect of the Nass South SRMP objective 2.7.2 (2)⁹, the FSP holder will not harvest timber within proposed treaty settlement lands during the term of this FSP.

* Abbreviated relevant sections of the FPPR:

FPPR s.41 – an agreement holder who (modification of insect behaviour) uses trap trees and pheromones to concentrate insect populations must ensure that the insect brood is destroyed before the insects emerge (see FPPR for full practice standard.)

FPPR s.42 – a person who uses livestock for site preparation or brush control must ensure they take measures to: minimize conflict with wildlife that could prey on livestock; prevent the transmission of disease from livestock to wildlife, maintain the health of livestock (see FPPR for full practice standard.)

FPPR s.43 – a person who plants trees to establish a free growing stand must use only seed registered, stored, selected and transferred in accordance with standards established by the chief forester (see FPPR for full practice standard.)

FPPR s.44, 45, 46 – establish a free growing stand that meets the applicable stocking standards and free growing height by a date no more than 20 years from the commencement date of harvest (see FPPR for full practice standards.)

3.3 Special Resource Management Zones – Protected Areas in the Nass South FDU

Reference Information for this Objective

Type of Objective	No legal Objective – the Nass South SRMP Objective 2.8.1.4 identified an Area to be Protected (Hanna-Tintina), recommended the establishment of a formal Protected Area under the Environment and Land Use Act, and provided Objectives for the area.
Mandatory Practice Requirements from the FPPR	None
Practice Requirement(s) Eligible for Exemption	None

Objective 3.3.1 For the Hanna-Tintina proposed area to be protected from the Nass South SRMP LUOR Order

The objectives for the Hanna-Tintina area to be protected as set out in the Nass South SRMP (described in the Nass South SRMP s. 2.8.1.4) are adopted as objectives by the FSP holder during the term of this FSP.

3.3.1.1 Result for the Hanna-Tintina proposed area to be protected in the Nass South FDU

The FSP holder will not carry out any primary forest activities in the Hanna-Tintina proposed area to be protected during the term of this FSP, except:

1. road maintenance will be carried out on roads that provide access to areas beyond the Hanna – Tintina proposed area to be protected.

⁹ Avoid timber harvesting within proposed treaty settlement lands (refer to Figure 28, Map 17 Gitanyow Treaty Settlement Lands Offer (2002))

2. road construction will be carried out to the extent required to access timber beyond the Hanna – Tintina proposed area to be protected that would otherwise be isolated from harvesting.

3.4 Botanical Forest Products

Type of Objective	Land Use Objectives – Nass South SRMP LUOR Order Objective 21 (Pine Mushrooms) (February 25, 2016)
Conditional Exemptions	N/A
Practice Requirement(s) Eligible for Exemption	<u>Decision</u> : The FSP holder adopts the Nass South SRMP LUOR Order Objective 21.

Objective 3.4.1 For pine mushroom resources from the Nass South SRMP LUOR Order

The objective for pine mushroom resources as set out in the Nass South SRMP LUOR Order, is to maintain at least 50% of the productive pine mushroom (*Tricholoma magnivelare*) sites¹⁰ in forest ages ranging from 80 to 200 years¹¹ during the term of this FSP.

3.4.1.1 Strategy for pine mushroom resources in the Nass South FDU

During the term of this FSP, the FSP holder will ensure that productive pine mushroom sites associated with the Licencee's operations are maintained by:

1. identifying and mapping productive pine mushroom sites at the stand level during the ecological site mapping stage of operational planning; and,
2. if harvesting or road construction is proposed within the identified and mapped productive pine mushroom sites, 100% of the identified productive pine mushroom area will be addressed through the Site Plan to ensure that, at a minimum, 50% of the identified productive pine mushroom area will be maintained.

3.5 Cultural Heritage Resources in the Nass South FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s.10, Objectives for Cultural Heritage Resources Land Use Objective - Nass South SRMP LUOR Objective 35 (Cultural Resources Sites) & Objective 36 (Sustainable Cedar Supply) (February 25, 2016)
Conditional Exemptions	N/A

¹⁰ Productive pine mushroom sites means those sites that can best produce pine mushrooms, i.e. sites that currently produce pine mushrooms and those sites undisturbed, previously logged or burned that can produce pine mushrooms. These sites are generally pine or hemlock leading stands below 800 metres elevation in the following site series: ICHmc1/01b, ICHmc2/01b and CWHws2/03. The minimum size of area to be considered is 0.3 ha for homogeneous site series and 1 ha for site series complexes.

¹¹ If future research shows that silviculture systems (other than clearcut harvesting) can perpetuate pine mushroom production, the areas having these silviculture systems will contribute to meeting the objective.

Practice Requirement(s) Eligible for Exemption	None
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Objective 3.5.1 For cultural heritage resources set by Government

The objective set by government for Cultural Heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are:

1. the focus of a traditional use by an aboriginal people that is of continuing importance to that people; and,
2. not regulated under the Heritage Conservation Act.

Objective 3.5.2 For cultural heritage resources sites from the Nass South SRMP LUOR Order

The objective for cultural heritage resources as set out in the Nass South SRMP LUOR order is to preserve cultural heritage resources and cultural sites, including culturally modified trees, trails, cache pits, house pits, grave sites, fishing sites, pictograph sites, smoke houses, cabins, and camping sites.

3.5.2.1 Strategy for cultural heritage resources in the Nass South FDU

During the term of this FSP, the FSP holder will conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and not regulated under the Heritage Conservation Act by:

1. identifying known sites (location, nature and extent of cultural heritage resources) proximal to proposed harvest blocks and roads by conducting an initial review of known information sources and documenting the results;
2. providing the results of the initial review to potentially affected First Nations identified through the Consultative Areas Database and requesting for the First Nations to provide any additional information related to the cultural heritage resources that may be present and potentially affected by the proposed blocks and roads;
3. carrying out a Cultural Heritage Resource Evaluation¹² before timber harvesting or road construction is authorized in areas:

¹² **Cultural Heritage Resource Evaluation** is defined as a process conducted by a qualified person, consisting of these steps:

1. record the location of the cultural heritage resource;
2. evaluate the direct impact of the planned development on the cultural heritage resource;
3. if necessary, prepare recommendations in order to conserve, mitigate impacts, or, as required, protect the cultural heritage resource at the location, considering:
 - a. the relative value or importance of the cultural heritage resource to a traditional use by an aboriginal people;
 - b. the relative abundance or scarcity of the cultural heritage resource;
 - c. the historical extent of the traditional use of the cultural heritage resource; and,
 - d. the impact on the FSP holders government granted timber harvesting rights of conserving or protecting the cultural heritage resource.

- a. that have a high archaeological potential as identified in an archaeological overview assessment or a Cultural Heritage and Resource Evaluation (CHRE) for the area; and/or,
 - b. for which site-specific information regarding cultural heritage resources is brought forward or made available to the FSP holder by a First Nation or government.
- 4. providing the results of the Cultural Heritage Resource Evaluation to potentially affected First Nations identified through the Consultative Areas Database prior to conducting operations; and,
- 5. conducting all harvesting, road construction, and mechanical site preparation activities consistent with recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (2) above, that are practicable and are required to conserve or, if necessary, protect a cultural heritage resource if it is valuable and scarce, to the extent of its historical use; including for previously unidentified cultural heritage resources encountered during harvesting, road construction, or mechanical site preparation activities:
 - a. protecting the CHR to the extent necessary until a Cultural Heritage Resource Evaluation is carried out; and,
 - b. continuing operations in a manner that is consistent with recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (a) above that are practicable and are required to conserve or, if necessary, protect the cultural heritage resource if it is valuable and scarce, to the extent of its historical use.

Objective 3.5.3 For cedar from the Nass South SRMP LUOR Order

Nass South SRMP LUOR Order, Objective 36 is to maintain a sustainable source of cedar for the applicable First Nation to practice their traditional, cultural and subsistence uses.

3.5.3.1 Strategy for cedar in the Nass South FDU

For the purpose of Objective 3.5.3, during the term of this FSP, minor removal of western red cedar and cypress in Wildlife Tree Retention Areas and Riparian Management Zones will be facilitated by the FSP holder to support a sustainable source of these species for First Nations traditional use.¹³ The FSP holder will:

- 1. communicate with First Nations identified through strategy 3.5.2.1 (2) cutblocks with a component of cedar prior to the start of harvesting operations, including the location of any Monumental Cedar trees;
- 2. at the request of a First Nation Council, and prior to the lapsing of the cutting permit for any particular harvest area, authorize by letter of agreement between the First Nation Council and the FSP holder the removal of western red cedar or cypress for

¹³ Traditional uses including bark stripping, root harvesting, and whole tree removal for various purposes. Uses that do not require the harvesting of whole trees will not be administered by the FSP holder.

cultural purposes from retention areas, including Wildlife Tree Retention Areas (WTRA) or Riparian Management Zones¹⁴ (RMZ), within active cutting authorities as follows:

- a. harvesting of western red cedar and cypress from wildlife tree retention areas and riparian management zones will be limited to:
 - i. no more than 5% of the co-dominant/ dominant stems within a WTRA, with no more than 10% of the stems within a given hectare, unless the Site Plan describes how the WTRA is able to retain its function; and,
 - ii. removal of co-dominant/dominant stems only from within a RMZ area consistent with the RMZ retention described in Result 3.8.4.1, unless the Site Plan describes how the RMZ is able to retain its function; and,
3. provide a copy of agreement(s) resulting from section (2) above to the Coast Mountains Resource District Manager.

3.6 Visual Quality in the Nass South FDU

Reference Information for this Objective

Type of Objective	Objectives enabled in regulation - FRPA ss. 180 and 181 for scenic areas and GAR s. 17 for VQOs according to Kalum District Manager's letters dated January 7 1997, September 8 1998 and March 23 2000 established VQOs and designated Scenic Areas in the Kalum District. Not Applicable - Objective Set in Regulation – FPPR s. 9.2 (2) visual quality for scenic areas established by October 24, 2002 and for which there is no visual quality objective, Effective January 31, 2004 – Not Applicable because scenic areas in the Nass FDU have established VQOs.
Scenic Areas with VQOs established at May 31, 2016)	As of May 31, 2016, Visual Quality Objectives are established in the Nass South FDU for the following areas: <ul style="list-style-type: none"> ▪ Highway 37 (Stewart -Cassiar) through the Nass TSAs; and, ▪ Highway 37A from Meziadin Junction to Stewart

Objective 3.6.1 For visual quality set by Government

The objective for visual quality for the Nass South FDU is to ensure that the altered forest landscape for scenic areas meets the visual quality objective for the scenic area.

3.6.1.1 Result for visual quality in the Nass South FDU

During the term of this FSP, for scenic areas identified on Appendix IV, Figure 17. Nass South SRMP Map 6 – Visual Quality Objectives, the FSP holder will, with the support of visual design techniques, carry out forest activities in scenic areas in a manner that is consistent with the visual quality objective, except:

¹⁴ Removal of stems from within Riparian Reserve Zones will be as per the Forest Planning and Practices Regulation- currently, removal for cultural purposes is not an allowed activity with RRZs

1. in those circumstances where the results of a catastrophic event (windthrow, landslide, etc.) exceed the scale criteria (percent alteration guideline) for a VQO, road construction and/or harvesting activities will be:
 - a. planned to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,
 - b. only carried out upon approval of the Delegated Decision Maker;
2. in those circumstances where a cutblock or road borders a previously existing cutblock, road, structure or other disturbance or natural feature that is rectilinear, geometric in shape, or otherwise does not appear natural in the landscape, road construction and/or harvesting activities will be carried out to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,
3. in those circumstances where the results of a forest health impact exceeds the scale criteria (percent alteration guideline) for a VQO and harvesting or road construction is required to address the threat from insects, disease, or decay, road construction and/or harvesting activities will be:
 - a. planned to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,
 - b. only carried out upon approval of the Delegated Decision Maker.

3.7 Recreation in the Nass South FDU

Reference Information for this Objective

Type of Objective	<p>Objective Enabled by Regulation – FRPA s. 56, 180 (j), (k), 181 and GAR s.5(f), (g) through the:</p> <ol style="list-style-type: none"> 1. Order to Establish Objectives for a Recreation Site, Recreation Trail, or Interpretive Site (July 25, 1997); and, 2. Order to Establish Objectives for a Recreation Site, Recreation Trail, or Interpretive Site (November 8, 1996)
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Objective 3.7.1 For recreation in the Nass South FDU

The objectives for Recreation Sites and Trails are as described in Appendix V – Applicable Government Action Regulation Orders for sites and trails listed in Table 7 and Table 8.

3.7.1.1 Result for recreation sites in the Nass South FDU

During the term of this FSP the FSP holder will ensure that for the Recreation Sites with established objectives identified in Table 7 that there will be no disturbance related to road construction, harvesting, or silviculture activities by Skeena Sawmills to areas within 10 m of lake shorelines, river-banks, stream-banks, or creek-banks, or marine foreshore. This only applies to sites where an RRZ is not in existence. The remainder of the area within the recreation sites will be reserved from disturbance other than where Skeena Sawmills and the Delegated Decision Maker (e.g. Recreation Officer) for the Ministry responsible for the

site agree the disturbance will be for the improvement of the recreation experience, or where action or access is required to prevent or address potential losses due to fire, wind, or forest health factors.

3.7.1.2 Result for recreation trails in the Nass South FDU

During the period of this FSP the FSP holder will ensure that on the Recreation Trails with established objectives identified in Table 8:

1. no disturbance by Skeena Sawmills harvesting, road construction, or silviculture activities to natural vegetation occurs within 10 m of trail centerline other than for a required crossing unless the Delegated Decision Maker (e.g. Recreation Officer) for the Ministry responsible for the trail grants an exemption for that activity;
2. development activities that occur from 10 meters to 50 meters either side of trail centerline:
 - a. will only occur after the planned activity has been approved by the Delegated Decision Maker (e.g. Recreation Officer) for the Ministry responsible for the trail; and,
 - b. the authorized development activities comply with the conditions of the approval;
3. a crossing of the trail is permitted if the crossing is required to access productive forest land that would otherwise be isolated; and,
4. the trail location is re-established if the crossing disturbs it; or alternatively, the trail can be relocated away from the crossing. The timing of the trail crossing, re-establishment, or trail relocation will require approval by the Delegated Decision Maker (e.g. Recreation Officer) for the Ministry responsible for the trail; and,
5. a trail crossing is deactivated once it is no longer required.

Table 7. Recreation Sites with Established Objectives in the Nass South FDU

Site or Trail Feature Type	Feature Name / Order or File # (Date)
Recreation Sites with Established Objectives	• Bonney Lake Recreation Site / 0622 (May 1, 1997)
	• Jigsaw Lake Recreation Site / 3522 (May 10, 1996)

Table 8. Recreation Trails with established Objectives in the Nass South FDU

Site or Trail Feature Type	Feature Name / Order or File # (Date)
Recreation Trails with Established Objectives	• Bonney Lake Portage Recreational Trails / 0623 (May 1, 1997)

3.8 Water Resources, Riparian Areas, and Fish in the Nass South FDU

Reference Information for this Objective

Type of Objective	Land Use Objective - Nass South SRMP LUOR Order Objectives 1-8 (Water), 33 (fish habitat), 34 (integrity of fish-bearing streams, rivers and lakes), and Objective 37 and 38 (Water Management Units) Objective Set in Regulation – FPPR s. 8 (water, fish, wildlife and biodiversity within riparian areas), and FPPR s. 8.2 (Water in Community Watersheds)
Conditional Exemptions	FPPR ss. 12.3, 12.31, 12.32
Mandatory Practice Requirements	FPPR ss. 54, 58
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR ss.12.3, 12.31, and 12.32 applied as follows: Decision: per FPPR s. 12.3, the FSP holder commits to comply with FPPR ss. 47 – 49 for the classification of riparian features and ss. 50 51, and 53 consistent with Result 3.8.4.1, Result 3.8.5.1, and Strategy 3.8.8.1. Decision: per FPPR s. 12.31, the FSP holder adopts Result 3.8.4.1, Result 3.8.5.1, and Strategy 3.8.8.1. Decision: per FPPR s. 12.32, the FSP holder adopts FPPR ss. 59 – 63 as results or strategies in Community Watersheds.

Objective 3.8.1 Hydrologic stability of watersheds from the Nass South SRMP LUOR Order

Nass South SRMP LUOR Order Objective 1 is to maintain the hydrologic stability of watersheds so that the thresholds identified in Schedule B1 (Equivalent Clearcut Area Thresholds for Watersheds) are not exceeded, except where a hydrologic assessment is completed by a qualified professional prior to any harvesting that would cause the thresholds to be exceeded and that subsequent activities are conducted in a manner that is consistent with the results of the assessment.

3.8.1.1 Strategy for hydrologic stability of watersheds in the Nass South FDU

During the term of this FSP the FSP holder will not exceed the ECA threshold for watersheds in Table 9 unless forest activities above the ECA are consistent with recommendations of a qualified professional for forest activities that would cause the thresholds identified in Table 9 to be exceeded.

Table 9. Nass South SRMP Equivalent Clearcut Area (ECA) Thresholds for Watersheds

Map ID	Base Watershed (WSD) Unit Code and Order	Unit Name	ECA Threshold %
1	KINRWSD000020 - 3	Meziadin River tributary (contains Yaakin Lk)	25
2	KINRWSD000025 - 3	White River tributary 1 (west of Femur Lk)	35
3	KINRWSD000030 - 3	White River tributary 2 (west of Scrub Lk)	35
4	KINRWSD000033 - 3	Niska Creek	25
5	KINRWSD000035 - 4	Kinskuch River	25 (in ICHmc1/in Plan area)

Map ID	Base Watershed (WSD) Unit Code and Order	Unit Name	ECA Threshold %
6	KINRWSD000036 - 3	Outlet of Arbor Lake	25
7	KSHRWSD000010 - 3	Bear River tributary (east of Le Sueur Crk)	25 (in CWHwm)
8	KSHRWSD000011 - 3	Le Sueur Creek	25 (in CWHwm)
9	KSHRWSD000012 - 3	grouped(1) Bitter Creek	25 (in CWHwm)
9	KSHRWSD000013 - 4	grouped(1) Bitter Creek	25 (in CWHwm)
9	KSHRWSD000014 - 3	grouped(1) Bitter Creek	25 (in CWHwm)
9	KSHRWSD000015 - 3	grouped(1) Bitter Creek	25 (in CWHwm)
10	KSHRWSD000016 - 3	Glacier Creek	25 (in CWHwm and MHun separately)
11	LBIRWSD000112 - 3	Bell-Irving River tributary 4 (east flank on Mt. Bell-Irving)	30 (in ICH)
12	LBIRWSD000113 - 3	Bell-Irving River tributary 3 (east flank on Mt. Bell-Irving)	30 (in ICH)
13	LBIRWSD000122 - 3	Bell-Irving River tributary 2 (east flank on Mt. Bell-Irving)	30 (in ICH)
14	LBIRWSD000125 - 3	Bell-Irving River tributary 1 (east flank on Mt. Bell-Irving)	30 (in ICH)
15	LNARWSD000008 - 4	Tchitin River	30 (in ICHmc1 and CWHws2 separately in Plan area)
16	LNARWSD000010 - 8	Nass River tributary 1 (east of Kinskuch confluence)	30 (in ICHmc1/in Plan area)
17	LNARWSD000020 - 3	Kshadin Creek tributary (west of Taylor Lk)	25 (in ICHmc1 and CWHws2 collectively in Plan area)
18	NASRWSD000040 - 5	Kwinageese River	20 (in Plan area)
19	NASRWSD000049 - 3	Nass River tributary 5 (across river from Meziadin Junction)	30
20	NASRWSD000066 - 4	grouped (2) Bonney Creek (unit also contains Alpha Lk)	25 (in Plan area)
20	NASRWSD000069 - 3	grouped (2) Bonney Creek (unit also contains Alpha Lk)	25 (in Plan area)
21	NASRWSD000072 - 3	Wolverine Creek	30
22	NASRWSD000073 - 4	grouped(3) Axnegrelga Creek (unit also contains Hughan and Jigsaw Lks)	20 (in Plan area)
22	NASRWSD000074 - 3	grouped(3) Axnegrelga Creek (unit also contains Hughan and Jigsaw Lks)	20 (in Plan area)
22	NASRWSD000076 - 4	grouped(3) Axnegrelga Creek (unit also contains Hughan and Jigsaw Lks)	20 (in Plan area)
23	NASRWSD000075 - 3	Kitanweliks Creek	30
24	NASRWSD000077 - 5	Paw Creek	30
25	NASRWSD000078 - 3	Van Dyke Creek	30
26	NASRWSD000079 - 3	Brown Bear Creek	20 (in Plan area)
27	NASRWSD000081 - 4	Little Paw Creek	30
28	NASRWSD000082 - 3	Axnegrelga Creek tributary (west of Brown Bear Lk)	20
29	NASRWSD000083 - 3	Outlet of Noordam Lake	35
30	NASRWSD000084 - 3	Nass River tributary 4 (east of Kinskuch Peak)	35
31	NASRWSD000086 - 4	Nass River tributary 2 (contains Abbi Lk)	35
32	NASRWSD000088 - 3	Nass River tributary 3 (across river from Sideslip Lk)	35

Objective 3.8.2 For water, fish, wildlife and biodiversity within riparian areas set by Government

The objective set by government for water, fish, wildlife and biodiversity within riparian areas is, without unduly reducing the supply of timber from British Columbia's forests, to conserve at the landscape level the water quality, fish habitat, wildlife habitat, and biodiversity associated with those riparian areas.

Objective 3.8.3 For water – ecological function from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objective 2 is to maintain the ecological functioning of streams, rivers, wetland complexes and lakes, including those that do not support populations of fish.

Objective 3.8.4 For riparian features from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objective 4 is to maintain reserve zones and management zones around riparian features identified in the Nass South SRMP LUOR Order, Schedule C (included here as Table 10) for all rivers, streams, lakes and wetlands.

3.8.4.1 Result for water and riparian in the Nass South FDU

During the term of this FSP the holder of this FSP will comply with the Basal Area Retention targets in Table 10 for areas of primary forest activity authorized or carried out by the FSP holder.

Table 10. Basal Area Retention Targets in Riparian Reserve Zones (RRZ) and Riparian Management Zones (RMZ) –Nass South FDU

Riparian Class	Area or Stream Width	Riparian Reserve Zone (RRZ) Width ¹	Basal Area Retention ² Minimum ³ within RRZ	Riparian Management Zone Width – Minimum ³	Basal Area Retention ² Minimum within RMZ ³
Fish Streams: FPPR s. 47					
S1 ⁴	>20 m	50	100%	20	<=20%
S2 ⁴	5 – 20 m	30	100%	20	<=20%
S3 ⁴	1.5-5 m	20	100%	20	<=20%
S4	< 1.5 m	0	n/a	30	<=10%
Non-Fish Streams: FPPR s. 47					
S5	> 3 m	0	n/a	30	<=10%
S6	< 3 m	0	n/a	20	0%
Wetlands: FPPR s. 48					
W1 ⁵	> 5 ha	10	100%	40	>10%
W2	1 – 5 ha	Not applicable: no W2s in the plan area			
W3 ⁵	1 - 5 ha	0	n/a	30	>10%
W4	0.5 - 1 ha	Not applicable: no W4s in the plan area			
W5 ⁵	Complex > 5 ha	10	100%	40	>10%
Lakes: FPPR s. 49					
L1	>5 ha	10	100%	20	≥10%
L2	1 – 5 ha	Not applicable: no L2s in the plan area			
L3	1 – 5 ha	n/a	n/a	30	≥10%
L4	0.5 – 1 ha	Not applicable: no L4s in the plan area			

Footnotes:

¹ Width measured in slope distance.

² Reserve and Management Zone percentage means the percentage of naturally occurring pre-harvest forest basal area and structure of mature and old forest that occupies (or historically occupied) the site.

³ Reserves and Management Zones around all riparian features may be increased in size and % retention to meet management objectives for other resources.

⁴Excluding these specific rivers and creeks where Ecosystem Networks have been applied: Kinskuch River – Ksi Ginsgox, Nass River – K’alii Aksim Lisims, Bell-Irving River, White River, Paw Creek, Axnegrelga Creek, Brown Bear Creek, Bear River, American Creek, Bitter Creek and Upper Hoan Creek (see Ecosystem Network in Nass South SRMP LUOR Order Schedule I).

⁵Excluding those wetlands identified in Nass South SRMP LUOR Order as Special Habitat for General Wildlife in Schedule J.

Objective 3.8.5 For ground water from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objective 7 is to ensure that when new roads and trails are built, ground water is allowed to reach natural ground water receiving sites.

3.8.5.1 Result for ground water in the Nass South FDU

During the term of this FSP the holder of this FSP will:

1. install sufficient drainage structures in new roads and trails to:
 - a. conduct groundwater towards natural groundwater receiving sites;
 - b. minimize groundwater accumulation into surface water; and,
 - c. minimize the diversion of water from one natural drainage to another.
2. upon completion of primary forest activities, comply with FPPR ss. 39 and 40.

Objective 3.8.6 For community watersheds set by Government

Consistent with FPPR s.8.2 and without unduly reducing the supply of timber from BC’s forests, the objective set by government for water in community watersheds is, where water is being diverted for human consumption through a licenced waterworks in a community watershed, to prevent cumulative hydrological effects of primary forest activities from resulting in a material adverse impact on either:

1. the quantity or timing of flow of the water from the waterworks; or,
2. human health that cannot be addressed by water treatment required under an enactment or the waterworks licence.

Objective 3.8.7 For water and riparian – fish habitat and human water consumption from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objective 3 is to ensure that industrial forestry activity on all rivers and streams does not cause significant consequences for fish habitat or human water consumption due to (a) channel bank erosion; (b) channel aggradation, degradation or dewatering; or, (c) change in channel morphology.

3.8.7.1 Result for water in community watersheds in the Nass South FDU

For the purposes of sections 8.2 of the FPPR, the FSP holder will comply with FPPR sections 58, 62, and 63, and adopts FPPR sections 59, 60, 61, and 62 as results for water in community watersheds during the term of this FSP.

Objective 3.8.8 For large woody debris from the Nass South SRMP LUOR Order

Objectives in respect of large woody debris from the Nass South SRMP LUOR Order are to:

1. (Objective 5) retain blowdown within riparian reserve zones and/or riparian management zones as large woody debris for all rivers, streams, lakes, and wetlands; and,
2. (Objective 6) maintain naturally deposited large woody debris in rivers and streams in riparian classes S1 to S4, except where necessary to satisfy safety considerations.

3.8.8.1 Strategy for large woody debris in the Nass South FDU

Consistent with the intent of Objective 3.8.7 respecting (not) changing channel morphology, Objective 3.8.8, and FPPR s. 51(1) (g) and 51 (2) respecting (not causing) material adverse impacts on the riparian reserve zone, during the term of this FSP the holder of this FSP will:

1. retain blowdown within riparian reserve zones and/or riparian management zones as large woody debris, except where necessary to satisfy safety considerations; and,
2. maintain naturally deposited large woody debris in rivers and streams in riparian classes S1 to S4, except where necessary to satisfy safety considerations or to mitigate potential material adverse effects on the riparian reserve zone or stream morphology.

Objective 3.8.9 For floodplains and alluvial fans from the Nass South SRMP LUOR Order

Nass South SRMP LUOR Order Objective 8 is to maintain the functional integrity of all floodplains and alluvial fans.

3.8.9.1 Strategy for operations on alluvial fans and floodplains in the Nass South FDU

Primary forest activities planned on alluvial fans and floodplains will be:

1. designed to maintain the functional integrity of these geomorphic processes in consultation with a qualified professional using available guidance documents and experience to:
 - a. identify fans/floodplains in an operating area;
 - b. determine potential hydrogeomorphic hazards through pre-typing watersheds and review of aerial photographs;
 - c. recognize and identify key features in the field;
 - d. develop prescriptions that deal with hydrogeomorphic hazards; and,
 - e. develop and implement a process to monitor results and mitigate/minimize impacts on functional integrity.
2. designed to provide wildlife habitat using GAR Order-Specified Area #6-282 Grizzly Bear (Nass TSA), October 20, 2014, Schedule 1; and,
3. carried out according to the design in (1) and (2) above, ensuring that all people involved in the logging or road-building operations:
 - a. are made aware of the hazards of undertaking forestry activities on fans and floodplains;

- b. follow prescriptions and designs;
- c. report to the FSP holder any observed hazards; and,
- d. do not deviate from prescriptions or designs without the approval of the FSP holder.

Objective 3.8.10 For water management units from the Nass South SRMP LUOR Order

The objective for water management units from the Nass South SRMP LUOR Order Objective 37 and 38 is:

1. Objective 37: to ensure proper hydrological functioning¹⁵ of:
 - a. each stream, wetland and lake within a Water Management Unit identified on Schedule K; and,
 - b. each local and downstream stream receiving water from a cutblock within a Water Management Unit identified on Schedule K; and,
2. Objective 38: to retain 100% of the forested area of the hydriparian zone¹⁶ of each stream, wetland and lake within a Water Management Unit identified in the Nass South SRMP LUOR Order Schedule K (included in Appendix IV) unless harvesting is required to address compelling forest health issues; and, cutblocks may overlap a Water Management Unit as shown on Nass South SRMP LUOR Order Schedule K, Map by no more than 200 metres or 50% of any individual cutblock area, whichever is less, provided that the riparian management practices applicable to the forest land base outside a Water Management Unit are maintained.

3.8.10.1 Result for water management units in the Nass South FDU

In respect of Objective 3.8.10, to ensure proper hydrological functioning within water management units, during the term of this FSP, the FSP holder:

1. will retain 100% of the forested area of the hydriparian zone of each stream, wetland and lake within a Water Management Unit identified in the Nass South SRMP LUOR Order Schedule K, unless harvesting is required to address *compelling forest health issues*¹⁷ or as set out in (b) below; and,

¹⁵ “proper hydrological functioning” means the ability of a stream, river, wetland or lake and its riparian area to: withstand normal peak flood events without experiencing accelerated soil loss, channel movement or bank movement; filter runoff; and store and safely release water. It also means the ability of riparian habitat to: maintain an adequate root network or large woody debris supply; provide shade; and reduce bank microclimate change, and have fish habitat in streams and riparian areas that are fully connected so that fish habitat is not lost or isolated as a result of some management activity.

¹⁶ The hydriparian zone is defined as the area that extends to the edge of the influence of water on land, or land on water, as defined by plant communities (including high bench or dry floodplain communities) or landforms, plus one and one-half site specific tree heights horizontal distance as per the Hydriparian Planning Guide (Coast Information Team Management Committee, 2004, p. 2). Landforms include: (a) The stream channel, lake or wetland and adjacent riparian ecosystem, where no floodplain exists; (b) The full width of the floodplain for streams; (c) Adjacent active fluvial units; (d) Up to the top of the inner gorge or where slopes become less than 50% for reaches of streams that are gullied, or are in a ravine or canyon; and, (e) Immediately adjacent unstable slopes (class IV and V terrain) where it is located such that a surcharge of sediment may be delivered to the stream, lake or wetland.

¹⁷ ‘Compelling forest health issue’ described in the Nass South LUOR Order Schedule 1 – Rationale for amending the ecosystem network, section 3 as, “e.g. a forest pest or disease is established in the Ecosystem Network and spreads to the point where it threatens adjacent values and resources outside the Ecosystem Network”.

2. may overlap a Water Management Unit as shown on the Nass South SRMP LUOR Order Schedule K, Map by no more than 200 metres, or 50% of any individual cutblock area, whichever is less, provided that the riparian management practices applicable to the forest land base outside a Water Management Unit are maintained.

Objective 3.8.11 For fisheries from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objectives for fisheries is to:

1. maintain habitat for indigenous fish populations (Objective 33) ; and,
2. maintain the functional integrity of fish-bearing streams, rivers and lakes (Objective 34).

3.8.11.1 Strategy for fisheries resources in the Nass South FDU

During the term of this FSP the FSP holder will address the potential impacts of harvesting and road construction activities to fish bearing streams through the adoption of:

1. Result 3.8.4.1 and Result 3.8.5.1(Riparian management);
2. Strategy 3.8.8.1 (Large Woody Debris management);
3. Strategy 3.8.9.1 (Alluvial Fan management)
4. Result 3.8.10.1 (Water Management Unit management); and,
5. Result 3.10.2.7 and Strategies 3.10.2.8 and 3.10.2.9 (Hydroriparian zones and Forest Ecosystem Networks management)

*** Abbreviated Relevant FPPR sections:**

FPPR s.12.3 – Conditional Exemption (subject to the minister’s approval) from one or more of FPPR sections 47-53 respecting objectives set by government in FPPR section 8 for water, fish, wildlife, and biodiversity.

FPPR s.12.31 – Conditional Exemption (subject to the minister’s approval) from one or more of FPPR sections 55-57 respecting objectives set by government in FPPR section 8.1 pertaining to cumulative hydrological effects on fish habitat fisheries sensitive watersheds.

FPPR s.47 (4-6) – stream riparian classes, minimum widths on each side of the stream for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.48 (3-5) – wetland riparian classes, minimum widths on each side of the wetland for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.49 (2-3) – lake riparian classes, minimum widths on each side of the lake for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.50 (1) – a person must not construct a road in a RMA unless locating the road outside the RMA would create a higher risk of sediment delivery, there is no other option for road location or it is a stream crossing (see FPPR for full results or strategies).

FPPR s.50 (2) – if a road is constructed within a riparian management area (RMA) road maintenance activities must not occur beyond the clearing width of the road except as necessary to maintain a stream crossing (see FPPR for full practice standard).

FPPR s.50 (3) – a person must not remove gravel or fill from within a RMA unless it is within the road prism, at a stream crossing or there is no other practical option (see FPPR for full practice standard).

FPPR s.51 (1) – a person must not cut, modify or remove trees in a RRZ unless...(see FPPR for full results or strategies).

FPPR s.51 (1-3) – no silviculture treatments within a RRZ (see FPPR for full practice standards).

FPPR s.52 (2) – maintain enough trees in the RMZ to maintain stream channel and bank stability (see FPPR for full result or strategy).

FPPR s.53 – must maintain tree and vegetation cover in the RMA of temperature sensitive streams to prevent an increase in stream temperature and impacts to fish (see FPPR for full result or strategy).

FPPR s.54 – a primary forest activity on the coast must not cause a fan destabilization that has adverse effects on objectives set by government (see FPPR for full practice standard).

FPPR s.55 – temporary access stream crossings must protect stream channel and stream banks and remove crossing when it is no longer required (see FPPR for full practice standards).

FPPR s.56 – ensure that primary forest activity does not adversely affect fish passage (see FPPR for full practice standard).

FPPR s.57 – conduct primary forest activities at a time and in a manner that is unlikely to harm fish or fish habitat (see FPPR for full practice standard).

FPPR s.58 – agreement holder must not use livestock or construct a corral within a RMA (see FPPR for full practice standard).

FPPR s.59 – agreement holder must ensure that primary forest activity does not cause material that is harmful to human health to be deposited in, or transported to water diverted for human consumption (see FPPR for full practice standard).

FPPR s.60 – agreement holder must ensure that primary forest activity does not damage a licenced waterworks; and must not harvest timber or construct a road within 100m upslope of a licenced waterworks... unless sediment delivery to the intake is not increased (see FPPR for full practice standard).

FPPR s.61 – agreement holder must ensure that timber harvesting or construction of excavated or bladed trails in a community watershed does not cause sediment harmful ... to enter a stream ... diverted for human consumption (see FPPR for full practice standard).

FPPR s.62 – to prevent interference with the subsurface flow path of a drainage area that contributes to a spring that is the source of water for a licenced waterworks...(and identified by the minister), agreement holder must not construct a road closer than 100m upslope of the spring unless construction does not interfere with subsurface flow... or as approved by the minister (see FPPR for full practice standard).

FPPR s.63 – for fertilizer applications besides spot applications, agreement holder must not apply fertilizer closer than 100m upslope of a licenced waterworks, or within 10 m of a perennial stream observable from an aircraft... if application results in elevated nitrate nitrogen and chlorophyll levels above specified limits (see FPPR for full practice standard).

3.9 Wildlife in the Nass South FDU

Reference Information for this Objective

Type of Objective	Land Use Objective – Nass South SRMP LUOR Order Objectives 31 and 32 (General Wildlife), 22 and 23 (Fur-bearers), and 24 – 30 (Northern Goshawk) Objectives Set in Regulation – FPPR s7(2) SAR Notice – Not Applicable Objectives Enabled by Regulation – GAR s. 9 (general wildlife measures), 10 (wildlife habitat areas & objectives), 11 (wildlife habitat features), 12(1) (Ungulate winter range), 13 (SAR and Regionally important Wildlife Species)
Decisions Creating	FPPR s.7 (2) Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Kalum Forest District, December 30, 2004 (includes marbled murrelet, coastal tailed frog, grizzly bear) - Not Applicable to the Nass South FDU because Grizzly Bear Notice superseded by GAR Order #6-282 and outside the normal range of coastal tailed frog and marbled murrelet. GAR Order: Ungulate Winter Range – Order #U-6-002 Mountain goat (Nass TSA and upper portion of the Ningunsaw and Unuk watersheds), Dec. 2008. GAR Order: Ungulate Winter Range – Order #6-018 Moose (Nass TSA), September 17, 2014. GAR Order-Specified Area #6-282 Grizzly Bear (Nass TSA), October 20, 2014.
Mandatory Practice Requirements	FPPR ss. 69 & 70
Practice Requirement(s) Eligible for Exemption	n/a

Objective 3.9.1 For wildlife set by Government

In respect of the FPPR section 7(1), the objective set by government for wildlife is, without unduly reducing the supply of timber from British Columbia's forests, to conserve sufficient wildlife habitat in terms of amount of area, distribution of areas and attributes of those areas, for:

1. the survival of species at risk;
2. the survival of regionally important wildlife; and,
3. the winter survival of specified ungulate species;

Objective 3.9.2 For general wildlife from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objectives for general wildlife are:

1. Objective 31: to maintain effectiveness¹⁸ of riparian habitats adjacent to wetlands in polygons identified as Special Habitats for General Wildlife on the Nass South SRMP LUOR Order Schedule J, Map; and,
2. Objective 32: to retain 100% of the forested area of the hydriparian zone for each polygon identified as Special Habitats for General Wildlife on the Nass South SRMP LUOR Order Schedule J, Map, except where no practicable alternative exists to: (a) build roads or trails; (b) access or harvest timber that is outside the hydriparian zone; (c) mitigate a safety concern; or, (d) negate impacts on adjacent forest values from a compelling forest health issue.

3.9.2.1 Strategy for general wildlife in the Nass South FDU

During the term of this FSP, the FSP holder will retain 100% of the forested area of the hydro-riparian zone for each polygon with identified Special Habitats for General Wildlife on the Nass South SRMP LUOR Order Schedule J, Map except where no practicable alternative exists to:

1. build roads or trails;
2. access or harvest timber that is outside the hydriparian zone;
3. mitigate a safety concern; or,
4. negate impacts on adjacent forest values from a compelling forest health issue.

3.9.2.2 Result for mountain goat, moose and grizzly bear in the Nass South FDU

In respect of Objective 3.9.2 the FSP holder is exempt from preparing results or strategies, and during the term of this FSP will comply with:

1. for moose, GAR order #6-018;
2. for mountain goats, GAR order #U-6-002;
3. for grizzly bear, GAR order #6-282; and,
4. for moose, no primary operations are to be conducted in the White-Willoughby-Flat-Nelson rivers complex.

Objective 3.9.3 For fur-bearers from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objectives for fur-bearers are:

¹⁸ “Effectiveness” means the continued use of a habitat by the species that historically utilized it.

1. Objective 22: to minimize impact to known high value fisher and wolverine habitats; and,
2. Objective 23: to maintain known fisher and wolverine denning sites.

3.9.3.1 Result for fur-bearers in the Nass South FDU

In respect of Objective 3.9.3, during the term of this FSP, the FSP holder will:

1. adopt Results 3.10.2.1, 3.10.2.3, 3.10.2.4, 3.10.2.5, 3.10.2.6, and 3.10.2.7, and Strategies 3.10.2.8 and 3.10.2.9 (Biodiversity); and,
2. minimize impact to known high value fisher and wolverine denning sites by maintaining a 100 m no-harvest boundary around known fisher and wolverine maternal den sites during forest activities unless alternate management direction is provided by a Qualified Professional.

Objective 3.9.4 For northern goshawk from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objectives for northern goshawk are to:

1. Objective 24: Maintain nesting and post-fledging habitat at known goshawk nest areas, to support continued use and reproduction in those areas;
2. Objective 25: Maintain all known goshawk nest and post-fledging areas;
3. Objective 26: Between February 15 and August 15, around any active goshawk nest, maintain a 500-metre buffer in which there are no mechanical activities allowed (mechanized activities mean road construction and timber harvesting / mechanized silviculture activities);
4. Objective 27: Between February 15 and August 15, around any active goshawk nest, maintain a 200-metre buffer in which there are no forestry-related human activities allowed, unless no practicable alternative exists (forestry-related human activities include log hauling and those activities not identified as mechanized activities);
5. Objective 28: Maintain foraging habitat around known goshawk nest and post-fledging areas;
6. Objective 29: Maintain at least 30% of the perimeter around known goshawk nests and post-fledging areas so that it is directly connected by mature or old forests to a comparable forest in the foraging area (a foraging area is the hunting territory typically used by a pair of Goshawks); where the perimeter is less than 30%, forests that are available will be used, and the most suitable adjacent forest will be allowed to mature over time to provide connectivity, as determined by a qualified professional; and,
7. Objective 30: Maintain $\geq 60\%$ mature and old forest structure and function within determined foraging areas around known goshawk nest and post-fledging areas; where at least 60% does not currently exist, forests that are available will be used, and the most suitable adjacent forest will be allowed to mature over time to provide the mature and old structure and function.

3.9.4.1 Strategy for northern goshawk in the Nass South FDU

During the term of this FSP, the FSP holder will ensure that, for both primary forest activities and planning for those activities that will occur within 2000m of known northern goshawk nest sites:

1. an assessment of the nest site is completed by a qualified professional (QP) consistent with current best management practices as outlined in, *A Scientific Basis for Managing Northern Goshawk Breeding Areas in the Interior of British Columbia: Best Management Practices* (A. Kari Stuart-Smith, William L Harrower, Todd Mahon, Erica L. McClaren, and Frank I Doyle, 2012), results of which are included in a report with recommended mitigative actions that are consistent with Objective 3.9.4 ; and,
2. the recommendations in the report are implemented.

3.10 Biodiversity in the Nass South FDU**Reference Information for this Objective**

Type of Objective	Land Use Objective - Nass South SRMP LUOR Order Objectives 9 (natural disturbance pattern), 10 (wildlife tree retention), 11 – 13 (red and blue listed species), 14 – 15 (deciduous and coniferous species diversity), 16 (seral stages), 17 (old growth management areas), and 18 – 20 (ecosystem networks) Objectives Set in Regulation – FPPR s. 9 (landscape level biodiversity) and 9.1 (stand level biodiversity)
Mandatory Practice Requirements	FPPR s. 68 (Coarse woody debris)
Conditional Exemptions	FPPR ss. 12.4 & 12.5
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR ss. 12.4 and 12.5 <u>Decision:</u> The FSP holder adopts FPPR ss. 64, 65, 66, and 67 (with exception as indicated in 3.10.2.3 for Cedar harvest in wildlife tree retention areas).

Objective 3.10.1 For biodiversity set by Government

1. In respect of FPPR section 9, the objective set by government for wildlife and biodiversity at the landscape level is, without unduly reducing the supply of timber from British Columbia's forests and to the extent practicable, to design areas on which timber harvesting is to be carried out that resemble, both spatially and temporally, the patterns of natural disturbance that occur within the landscape; and,
2. In respect of FPPR section 9.1, the objective set by government for wildlife and biodiversity at the stand level is, without unduly reducing the supply of timber from British Columbia's forests, to retain wildlife trees.

Objective 3.10.2 For biodiversity from the Nass South SRMP LUOR Order

The Nass South SRMP LUOR Order Objectives for biodiversity are to:

1. Objective 9: Maintain a landscape pattern of patchiness that, over the long term, reflects the natural disturbance pattern within the forested area of the Order area, as per the Nass South LUOR Order Schedule D;

2. Objective 10: Maintain or recruit structural diversity in managed stands by retaining at least 3.5% of each proposed cutblock and at least 7% of proposed cutblocks aggregated on an annual basis, as wildlife tree retention areas, over the rotation;
3. Objective 11: Retain 100% of the area and basal area of red-listed ecological communities¹⁹ as listed on the Nass South LUOR Order Schedule E, except where:
 - a. required to access timber that otherwise would be isolated from harvest beyond the core area;
 - b. terrain conditions such as slope, gradient, or terrain stability constrain road locations and dictate that sections of road enter and leave red-listed ecological communities to access timber that otherwise would be isolated from harvest; or,
 - c. no practicable alternative exists.
4. Objective 12: Retain a forested buffer around the red-listed ecological communities listed on Schedule E, as required to maintain the conditions of soil chemistry, moisture, temperature, and light that define and sustain the ecosystem except where:
 - a. required to access timber that otherwise would be isolated from harvest beyond the core area;
 - b. terrain conditions such as slope, gradient, or terrain stability constrain road locations and dictate that sections of road enter and leave red-listed ecological communities to access timber that otherwise would be isolated from harvest; or,
 - c. no practicable alternative exists.
5. Objective 13: Retain at least 70% of the area or basal area of each blue-listed ecological community²⁰ within a cutblock, as listed on the Nass South LUOR Order Schedule F;
6. Objective 14: Maintain a diversity of coniferous and deciduous species that represent the natural species composition at the landscape and stand levels by ensuring that all cutblocks at the free-growing stage will have a diversity of species ecologically appropriate to the site;
7. Objective 15: Maintain a diversity of coniferous and deciduous species that represent the natural species composition at the landscape and stand levels by ensuring that where an area larger than one contiguous hectare is harvested and it is composed of more than 50% deciduous trees by basal area, it will either be regenerated with a similar deciduous stand or will be replaced at a different location on a similar site series by regenerating an existing coniferous stand with similar deciduous species;
8. Objective 16: Maintain a range of forest seral stages as per the Nass South LUOR Order Schedule G;
9. Objective 17: Retain 100% of the forested area within Old Growth Management Areas as identified on the Nass South LUOR Order Schedule H.

¹⁹ The required minimum size of a red-listed ecological community is 0.25 ha. Where the community exists as the dominant component of a complex, the minimum size of the complex is 1 ha.

²⁰ The required minimum size of the blue-listed ecological community is 0.25 ha. Where the community exists as the dominant component of a complex, the minimum size of the complex is 1 ha.

10. Objective 18: Retain 100% of the forested area of the hydroriparian zone within the Ecosystem Network, as identified on Schedule I. Acceptable rationales for amending the Ecosystem Network are identified in Schedule I1.
11. Objective 19: Maintain structural connectivity in the Ecosystem Network, as identified on the Nass South LUOR Order Schedule I except where:
 - a. required to access timber beyond the Ecosystem Network that would otherwise be isolated from harvest;
 - b. required to access timber that would otherwise be isolated from harvest due to terrain conditions such as slope, gradient or terrain stability that constrain road locations and dictate that sections of road enter and leave the Ecosystem Network; or,
 - c. no practicable alternative exists.
12. Objective 20: Retain a 100-metre wide buffer around the Ecosystem Network as identified on the Nass South LUOR Order Schedule I that meets the following forest conditions:
 - a. continuous forest cover;
 - b. small discontinuous canopy gaps;
 - c. ≥70% structure and function retained, including large, old trees, snags, and coarse woody debris;
 - d. multi-canopy levels, multi-aged forest;
 - e. 0% permanent road access, except where, for ecological or economic reasons, no other alternative is possible.

3.10.2.1 Result for landscape level biodiversity in the Nass South FDU

In respect of landscape level biodiversity Objective 3.10.1 (1) and Objective 3.10.2 (1 & 8), during the term of this FSP, the FSP holder will adopt as results the patch size distribution targets in the Nass South SRMP LUOR Order Schedule D, (included here-in as Table 11) and the seral stage requirements for Landscape Units in the Nass South SRMP LUOR Order Schedule G, (included as Appendix IV).

Table 11. Nass South LUOR Schedule D – Patch Size Distribution Targets

Natural disturbance type (NDT)	Biogeoclimatic (BEC) zone variant	Percentage of Forest Area within Landscape Unit		
		Small patches (<40 ha)	Medium patches (40 to 80 ha)	Large patches (80 to 250 ha)
NDT 1	CWHwm	30 to 40	30 to 40	20 to 40
	ESSFwv	30 to 40	30 to 40	20 to 40
	ICHvc	30 to 40	30 to 40	20 to 40
	MHmm2	30 to 40	30 to 40	20 to 40

Natural disturbance type (NDT)	Biogeoclimatic (BEC) zone variant	Percentage of Forest Area within Landscape Unit		
		Small patches (<40 ha)	Medium patches (40 to 80 ha)	Large patches (80 to 250 ha)
	MHun ²¹	30 to 40	30 to 40	20 to 40
NDT 2	ICHmc1	30 to 40	30 to 40	20 to 40

Table 12. Nass South LUOR Schedule G – Seral Stage Requirements

Landscape Unit	Biodiversity Emphasis Option	Biogeoclimatic Ecosystem Classification	Seral Stage	Age (yrs)	Forest Area (%)
Bear	Intermediate	CWHwm	Early	<40	<30
			Mature + Old	>80	>36
			Old	>250	>13
		ESSFww	Early	<40	<22
			Mature + Old	>120	>36
			Old	>250	>19
		MHmm2	Early	<40	<22
			Mature + Old	>120	>36
			Old	>250	>19
		MHun	Early	<40	<17
Mature + Old	>120		<22		
Old	>250		>36		
Bowser	Low	ESSFww	Early	<40	n/a
			Mature + Old	>120	>19
			Old	>250	>19
		ICHvc	Early	<40	n/a
			Mature + Old	>100	>17
			Old	>250	>13
Brown Bear	Low	ESSFww	Early	<40	n/a
			Mature + Old	>120	>19
			Old	>250	>19
		ICHmc1	Early	<40	n/a
			Mature + Old	>100	>15
			Old	>250	>9
Cambria Ice field	Low	ESSFww	Early	<40	n/a
			Mature + Old	>120	>19
			Old	>250	>19
		MHmm2	Early	<40	n/a
			Mature + Old	>120	>19
			Old	>250	>19
Kinskuch	Intermediate	ESSFww	Early	<40	<22

²¹ Mountain Hemlock/undifferentiated (MHun)

Landscape Unit	Biodiversity Emphasis Option	Biogeoclimatic Ecosystem Classification	Seral Stage	Age (yrs)	Forest Area (%)
			Mature + Old	>120	>36
			Old	>250	>19
			Early	<40	<36
		ICHmc1	Mature + Old	>100	>31
			Old	>250	>9
			Early	<40	<30
		ICHvc	Mature + Old	>100	>34
			Old	>250	>13
			Early	<40	n/a
Kwinamuck	Low	CWHws2	Mature + Old	>80	>17
			Old	>250	>9
			Early	<40	n/a
		ICHmc1	Mature + Old	>100	>15
			Old	>250	>9
			Early	<40	n/a
		MHmm1	Mature + Old	>120	>19
			Old	>250	>19
			Early	<40	n/a
			Mature + Old	>120	>19
			Old	>250	>19
			Early	<40	<22
Madely	Intermediate	ESSFww	Mature + Old	>120	>36
			Old	>250	>19
			Early	<40	<36
		ICHmc1	Mature + Old	>100	>31
			Old	>250	>9
			Early	<40	<30
		ICHvc	Mature + Old	>100	>34
			Old	>250	>13
			Early	<40	<27
Tchitin	High	CWHws2	Mature + Old	>80	>51
			Old	>250	>13
			Early	<40	<17
		EssFww	Mature + Old	>120	>54
			Old	>250	>28
			Early	<40	<27
		ICHmc1	Mature + Old	>100	>46
			Old	>250	>13
			Early	<40	<17
		MHmm2	Mature + Old	>120	>54
			Old	>250	>28
			Early	<40	n/a
Tintina	Low	ESSFww	Mature + Old	>120	>19
			Old	>250	>19
			Early	<40	n/a

Landscape Unit	Biodiversity Emphasis Option	Biogeoclimatic Ecosystem Classification	Seral Stage	Age (yrs)	Forest Area (%)
		ICHmc1	Early	<40	n/a
			Mature + Old	>100	>15
			Old	>250	>9
		ICHvc	Early	<40	n/a
			Mature + Old	>100	>17
			Old	>250	>13
White	Intermediate	ESSFww	Early	<40	<22
			Mature + Old	>120	>36
			Old	>250	>19
		ICHmc1	Early	<40	<36
			Mature + Old	>100	>31
			Old	>250	>9
		ICHvc	Early	<40	<30
			Mature + Old	>100	>34
			Old	>250	>13
		MHmm2	Early	<40	<22
			Mature + Old	>120	>36
			Old	>250	>19
Wildfire	Intermediate	ESSFww	Early	<40	<22
			Mature + Old	>120	>36
			Old	>250	>19
		ICHvc	Early	<40	<30
			Mature + Old	>100	>34
			Old	>250	>13

3.10.2.2 Strategy for seral stage and patch size distribution in the Nass South FDU

In respect of Objective 3.10.1 (1 – Natural Disturbance) and Objective 3.10.2 (1 – Patch Size & 8 – Seral Stage), during the term of this FSP, the FSP holder will ensure that:

1. areas harvested by the FSP holder will be of a size and distribution that emulates the historical temporal and spatial distribution of the Natural Disturbance Types (NDTs) for the forests within the Nass South FDU area;
2. areas harvested by the FSP holder will move towards the patch size and seral stage distribution targets that are in place for the Natural Disturbance Types;
3. in respect of Objective 3.10.2 (1), a seral stage analysis is conducted by landscape unit and natural disturbance type to determine:
 - a. the proportional representation of the landscape units within the Nass South FDU;
 - b. the representation with respect to sensitive areas;
 - c. the need for actions to address seral stage imbalances based on the applicable land use objectives from the Nass South LUOR Schedule G (Table 12).

4. an action plan is prepared to address seral stage imbalances identified in section 3 above;
5. in respect of Objective 2.8.2, a patch size distribution analysis is conducted by landscape unit and natural disturbance type to determine:
 - a. the proportional representation of existing patch sizes within the Nass South FDU;
 - b. the target patch size distribution for the Nass South FDU; and,
 - c. the need for actions to address patch size imbalances, based on the applicable land use objective from the Nass South LUOR Schedule D (Table 11);
6. an action plan is prepared to address patch size distribution imbalances identified in section 5 above;
7. the action plans to address seral stage and patch size distribution imbalances are carried out; and,
8. a summary of the seral stage and allowable patch size distribution analysis results is completed for the Nass South FDU.

3.10.2.3 Result for seral stage and patch size distribution in the Nass South FDU

During the period of this FSP, the FSP holder will ensure that:

1. every three years, by June 1st, a report summarizing the status of the patch and seral distribution within the Nass South FDU area will be completed. The report will reflect projected changes (i.e. planned harvest) for at least the upcoming five year period; and, where this report indicates movement away from the target levels identified in Nass South LUOR Schedule G (Table 12) for seral stages and Nass South LUOR Schedule D (Table 11) for patch size distribution, a rationale will be prepared that describes management strategies for moving towards the target levels; and,
2. within a specified period after the approval of this FSP, harvest activities under this FSP are shown to be static or moving toward the target levels for these areas; this specified period shall be five (5) years for each Landscape Unit, unless otherwise determined by mutual agreement between the FSP holder and the CMR District Manager.

3.10.2.4 Result for wildlife tree retention in the Nass South FDU

During the term of this FSP, the FSP holder will:

1. maintain structural diversity in managed stands by retaining wildlife tree retention areas (WTRA) within each cut block or cutblock aggregate²², over the rotation consistent with the targets in Objective 3.10.2 (10), shifting or varying WTRA targets among cut blocks within a cut block aggregate only to address risks to biodiversity (such as in (2) below);

²² Cut block aggregate: A group of cut blocks which are within 10 kilometers radius of each other and where the Site Plan for these blocks refers to the fact that they are a cut block aggregate.

2. allow natural processes (insect, diseases, blowdown) to occur within WTRA's unless infestation or infection in the WTRA threatens to spread to adjacent forested areas and, where intervention is required, treat to retain a diversity of structural attributes consistent with (1) above or substitutes a suitable replacement WTRA; and,
3. authorize harvest within WTRAs of western red cedar or cypress only, consistent with Strategy 3.5.3.1.

3.10.2.5 Result for Old Growth Management Areas (OGMA) in the Nass South FDU

During the term of this FSP, the FSP holder will not harvest within the OGMA's shown in the Nass South SRMP LUOR Order Schedule H, Map, without an amendment completed that is consistent with the *Old Growth Management Area (OGMA) Amendment Policy – Skeena Region (February 9, 2011)*.

3.10.2.6 Result for red-listed²³ blue-listed²⁴ species in the Nass South FDU

During the term of this FSP, the FSP holder will:

1. during the planning and development of cutblocks and roads under the authority of the FSP holder, assess planned harvest areas (including roads) in the field for the occurrence of red-listed ecological communities included in the Nass South SRMP LUOR Order Schedule E and blue-listed ecological communities included in the Nass South SRMP LUOR Order Schedule F, and map identifiable occurrences for preservation that are:
 - a. larger than 0.25 ha that occur as a distinct unit; or,
 - b. larger than 1.0 ha that occur as the dominant ecosystem within an ecosystem mosaic.
2. retain each identifiable occurrence of a red-listed plant community as described above in 1 (a) and (b) unless:
 - a. disturbance is necessary to access timber beyond the plant community that would otherwise be isolated from harvest;
 - b. the area is being accessed for mineral development; or,
 - c. no practicable alternative exists.
3. retain at least 70% of each identifiable occurrence of a blue-listed plant community as described above in 1 (a) and (b) unless:
 - a. disturbance is necessary to access timber beyond the plant community that otherwise would be isolated from harvest;
 - b. the area is being accessed for mineral development; or,
 - c. no practicable alternative exists.

²³ The minimum size of red-listed plant community to be preserved is 0.25 ha. Where the red-listed plant community exists as the dominant component of a complex, the minimum size of complex to be preserved is 1.0 ha.

²⁴ The minimum size of blue-listed plant community to be preserved is 0.25 ha. Where the blue-listed plant community exists as the dominant component of a complex, the minimum size of complex to be preserved is 1 ha.

3.10.2.7 Result for diversity of coniferous and deciduous species in the Nass South FDU

During the term of this FSP, the FSP holder will adopt Result 3.2.1.1, Result for timber and species composition, as a result for representing the natural species composition at the stand and landscape levels in managed stands, consistent with footnote (c) in the Stocking Standards using the following conditions:

1. the minimum area to which this result applies includes harvested areas that originally had more than 50% deciduous trees by basal area, and these areas will each be assigned a unique Standards Unit in a Site Plan; and,
2. coniferous stocking at the stand level must always meet the minimum stocking level regardless of the spatial arrangement of the coniferous and deciduous components within the regenerated stand; and,
3. for situations where the required deciduous component is not achieved at the stand level due to conifer dominance or other reasons, it is acceptable to regenerate a similar deciduous stand at a different location on a similar site series.

3.10.2.8 Result for hydro-riparian zones within ecosystem networks in the Nass South FDU

During the term of this FSP, the FSP holder will ensure that, during the planning and development of cutblocks and roads under the authority of the FSP holder, 100% of the forested area of the hydro-riparian zone²⁵ within the Ecosystem Network identified on the Nass South SRMP LUOR Order Schedule I Map is retained, unless the Ecosystem Network is amended, in which case amendments will be developed according to direction in Table 13, Rationale for Amending the Ecosystem Network.

Table 13. Rationale for Amending Ecosystem Networks

Acceptable Rationale for Amendment	Major ²⁶ or Minor ²⁷ Amendment	Allowable Amendment
1. Access issues that were overlooked or unknown during the initial Ecosystem Network delineation, where no practicable alternative exists (refer to LUOR Order, Objective 19).	Minor	To establish an appropriate road width through the Ecosystem Network.
2. To account for cut blocks in place prior to the establishment of the Ecosystem	Minor	To the edge of the cut block, temporarily, to allow timber

²⁵ The hydriparian zone is defined as the area that extends to the edge of the influence of water on land, or land on water, as defined by plant communities (including high bench or dry floodplain communities) or landforms, plus one and one-half site specific tree heights horizontal distance (Hydriparian Planning Guide, Coast Information Team, Jan. 30, 2004). Landforms include: (a) The stream channel, lake or wetland and adjacent riparian ecosystem, where no floodplain exists; (b) The full width of the floodplain for streams; (c) Adjacent active fluvial units; (d) Up to the top of the inner gorge or where slopes become less than 50% for reaches of streams that are gullied, or are in a ravine or canyon; and, (e) Immediately adjacent unstable slopes (class IV and V terrain) where it is located such that a surcharge of sediment may be delivered to the stream, lake or wetland.

²⁶ “major amendment to an Ecosystem Network” means that wherever identified as a major amendment to an Ecosystem Network in Schedule G1, forest licensees must follow the amendment procedures as described for Old Growth Management Areas.

²⁷ “minor amendment to an Ecosystem Network” means that wherever identified as a minor amendment to an Ecosystem Network in Schedule G1, forest licensees can make amendments to the Ecosystem Network in the field, and then notify the applicable First Nation afterwards.

Acceptable Rationale for Amendment	Major ²⁶ or Minor ²⁷ Amendment	Allowable Amendment
<p>Network, including those:</p> <ul style="list-style-type: none"> approved under section 196(1) of the Forest and Range Practices Act; as declared areas under section 14(4) of the Forest Planning and Practices Regulation; or, that have a cutting permit in place 		<p>harvest.</p> <p>Return to original location following completion of timber harvest and silvicultural responsibilities.</p>
<p>3. To address a compelling forest health issue (e.g. a forest pest or disease is established in the Ecosystem Network and spreads to the point where it threatens adjacent values and resources outside the Ecosystem Network).</p>	Minor	<p>To the extent necessary to eliminate the threat to the land and water adjacent to the Ecosystem Network.</p>
<p>4. New data and information such as ground truthing of the hydro-riparian zone, new resource inventories, First Nations cultural sites and updated wildlife mapping. Notwithstanding the exceptions detailed under items 1 to 3 above, in no case will the Ecosystem Network be smaller than the hydriparian zone.</p>	<p>Major for the following rivers: Kinskuch, Nass, Bell-Irving, White, Paw Creek, Axnegrelga Creek, Brown Bear Creek, & Minor for all other portions of the EN.</p>	<p>To improve the degree to which the Ecosystem Network captures values for First Nations, provides habitat for wildlife, or generally benefits biodiversity.</p> <p>To increase the accuracy of the EN in terms of how it maps the hydriparian zone.</p>

3.10.2.9 Strategy for structural connectivity within ecosystem networks in the Nass South FDU

During the term of this FSP, the FSP holder will ensure that, during the planning and development of cutblocks and roads under the authority of the FSP holder, structural connectivity within the Ecosystem Networks identified on the Nass South SRMP LUOR Order Schedule I Map is maintained. Road construction within the Ecosystem Network will only occur:

1. to access timber beyond the Ecosystem Network that would otherwise be isolated from harvest;
2. to access timber that would otherwise be isolated from harvest due to terrain conditions such as slope, gradient or terrain stability that constrain road locations and dictate that sections of road enter and leave an Ecosystem Network; or,
3. where no practicable alternative exists.

3.10.2.10 Strategy for ecosystem network buffers in the Nass South FDU

During the term of this FSP, the FSP holder will ensure that, during the planning and development of cutblocks and roads under the authority of the FSP holder, a 100 m wide buffer is maintained around Ecosystem Networks identified on the Nass South SRMP LUOR Order Schedule I Map, and that the buffer will meet the following forest conditions:

1. continuous forest cover;
2. small discontinuous canopy gaps;

3. $\geq 70\%$ structure and function²⁸ retained, including large, old trees, snags, and coarse woody debris;
4. multi-canopy levels, multi-aged forest;
5. in conjunction with the forested core, maintain interior old forest conditions ≥ 100 metres in width; and,
6. no permanent road access, except where, for ecological or economic reasons, no other alternative is possible.

²⁸ Any harvest unit within the buffer portions of the EN will, within the buffer, retain $\geq 70\%$ of the naturally occurring mature and old-forest structure (live trees, range of diameter classes, snags, coarse woody debris, tree species etc.) of the harvest unit measured either as basal area (m²) or forest area (hectares). No further harvesting may occur within the harvest unit (within the EN buffer area) until such time as the harvested portion has returned to a mature or older condition (i.e. ICH 100 years, ESSF 120 years).

4.0 NASS NORTH FDU RESULTS AND STRATEGIES

The Nass North Forest Development Unit is comprised of the remaining area of the Nass TSA that is not included in the Nass South SRMP Area. The Nass North FDU has not had a strategic planning process to guide resource development activities. Objectives for the Nass

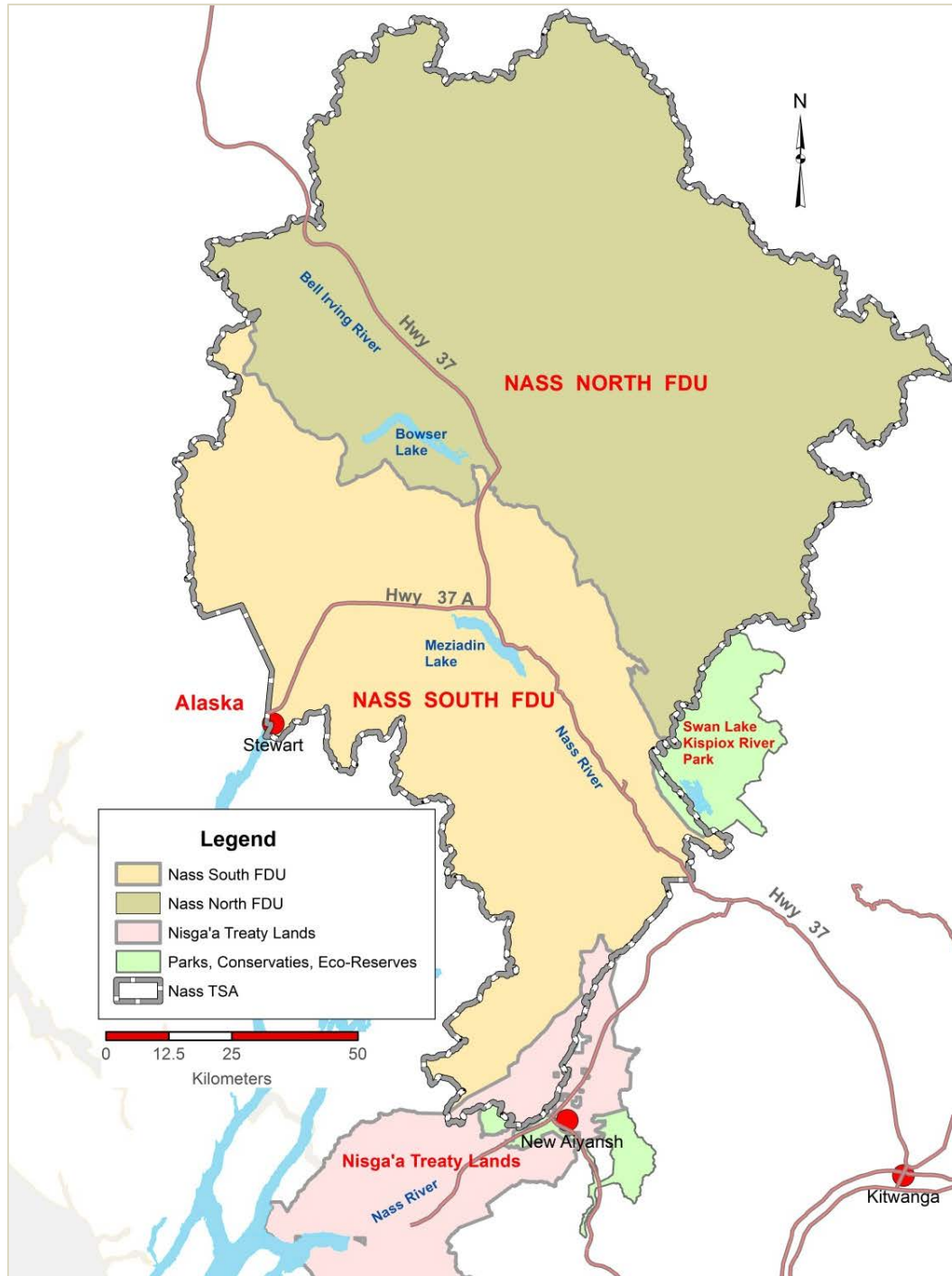


Figure 3. Overview Map of Nass North Forest Development Unit

North FDU are derived from the FRPA and FPPR, Scenic Area and Visual Quality Objectives designation via District Manager letters dated January 7, 1998, September 8, 1998, and March 23, 2000, and various GAR orders designating Wildlife Habitat Areas for grizzly bear and Ungulate Winter Ranges for moose and mountain goat.

4.1 Soil in the Nass North FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s. 5 Objective for Soils	
Mandatory Practice Requirements from the FPPR	FPPR ss. 37, 38, 39, & 40	
Practice Requirement(s) Eligible for Exemption	FPPR s.12.2	Decision: No Exemption per FPPR s. 12.2 sought
	FPPR ss. 35 & 36	Decision: Adopt FPPR ss. 35 & 36 as Result

Objective 4.1.1 For soils set by Government

The objective for soils set by Government is, without unduly reducing the supply of timber from BC's forests, to conserve the productivity and hydrologic function of soils.

4.1.1.1 Result for soils in the Nass North FDU

For the purpose of sections 5 and 12.2 of the FPPR, the holder of this FSP adopts sections 35 and 36 of the FPPR as a result during the term of this FSP.

* Abbreviated Relevant FPPR sections:

FPPR s.12.2 – conditional exemption for s.35 or 36

FPPR s.35 – soil disturbance limits must not exceed 5% for sensitive soils, 10% for non-sensitive soils, and 25% for roadside work areas of the net area to be reforested within a standards unit of a cutblock, with exceptions to exceed for ... (see FPPR for full result or strategy).

FPPR s.35 (5) (a) (iii) – Required to rehabilitate an area of compacted soil that is a minimum of 1 hectare in size (see FPPR for full result or strategy).

FPPR s.36 (1) – permanent access structures within a cutblock must not exceed 7% of the cutblock, with exceptions to exceed for ... (see FPPR for full result or strategy).

FPPR s.36 (2) – if permanent access structures exceed limits due to topography, engineering constraints or safety of road users (s.36 [1 (a and b)]), the agreement holder must ensure that the soil disturbance limit is exceeded as little as possible (see FPPR for full practice standard).

FPPR s.37 – primary forest activities must not cause a landslide that has adverse effect on objectives set by government (see FPPR for full practice requirement).

FPPR s.38 – primary forest activities must not cause a gully process that has adverse effect on objectives set by government (see FPPR for full practice requirement).

FPPR s.39 – temporary and permanent access structures must maintain natural surface drainage patterns on the area both during and after construction (see FPPR for full practice requirement).

FPPR s.40 – authorized person who constructs or deactivates a road must ensure that the soil exposed is re-vegetated within two years if erosion of soil will cause sedimentation to enter stream, lake, or wetland; and re-vegetation would materially reduce the likelihood of erosion. (see FPPR for full practice requirement).

4.2 Timber in the Nass North FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s. 6, Effective January 31, 2004
Mandatory Practice Requirements from the FPPR	FPPR ss. 41, 42, 43, 44, 45, & 46
Practice Requirement(s) Eligible for Exemption	None

Objective 4.2.1 For timber set by Government

The objectives set by government for timber are to:

1. maintain or enhance an economically valuable supply of commercial timber from British Columbia's forests;
2. ensure that delivered wood costs, generally, after taking into account the effect on them of the relevant provisions of this regulation and of the Act, are competitive in relation to equivalent costs in relation to regulated primary forest activities in other jurisdictions; and,
3. ensure that the provisions of this regulation and of the Act that pertain to primary forest activities do not unduly constrain the ability of a holder of an agreement under the *Forest Act* to exercise the holder's rights under the agreement.

4.2.1.1 Result for timber and species composition in the Nass North FDU

During the term of this FSP the FSP holder will ensure that harvested blocks are reforested:

1. with at least the minimum stocking using species identified in the stocking standards that apply to this FSP; and,
2. to meet the regeneration delay, free growing heights, and free growing dates as described in the stocking standards that apply to this FSP.

* Abbreviated relevant sections of the FPPR:

FPPR s.41 – an agreement holder who (modification of insect behaviour) uses trap trees and pheromones to concentrate insect populations must ensure that the insect brood is destroyed before the insects emerge (see FPPR for full practice standard.)

FPPR s.42 – a person who uses livestock for site preparation or brush control must ensure they take measures to: minimize conflict with wildlife that could prey on livestock; prevent the transmission of disease from livestock to wildlife, maintain the health of livestock (see FPPR for full practice standard.)

FPPR s.43 – a person who plants trees to establish a free growing stand must use only seed registered, stored, selected and transferred in accordance with standards established by the chief forester (see FPPR for full practice standard.)

FPPR s.44, 45, 46 – establish a free growing stand that meets the applicable stocking standards and free growing height by a date no more than 20 years from the commencement date of harvest (see FPPR for full practice standards.)

4.3 Cultural Heritage Resources in the Nass North FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s. 10 Objectives for Cultural Heritage Resources Voluntary adoption of Land Use Objective - Nass South SRMP LUOR Objective 36 (Sustainable Cedar Supply) (February 25, 2016)
Conditional Exemptions	N/A
Practice Requirement(s) Eligible for Exemption	None

Objective 4.3.1 For cultural heritage resources set by Government

The objective set by government for Cultural Heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are:

1. the focus of a traditional use by an aboriginal people that is of continuing importance to that people; and,
2. not regulated under the Heritage Conservation Act.

4.3.1.1 Strategy for cultural heritage resources in the Nass North FDU

During the term of this FSP, the FSP holder will conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and not regulated under the Heritage Conservation Act by:

1. identifying known sites (location, nature and extent of cultural heritage resources) proximal to proposed harvest blocks and roads by conducting an initial review of known information sources and documenting the results;
2. providing the results of the initial review to potentially affected First Nations identified through the Consultative Areas Database and requesting for the First Nations to provide any additional information related to the cultural heritage resources that may be present and potentially affected by the proposed blocks and roads;
3. carrying out a Cultural Heritage Resource Evaluation²⁹ before timber harvesting or road construction is authorized in areas:

²⁹ **Cultural Heritage Resource Evaluation** is defined as a process conducted by a qualified person, consisting of these steps:

1. record the location of the cultural heritage resource;
2. evaluate the direct impact of the planned development on the cultural heritage resource;
3. if necessary, prepare recommendations in order to conserve, mitigate impacts, or, as required, protect the cultural heritage resource at the location, considering:
 - a. the relative value or importance of the cultural heritage resource to a traditional use by an aboriginal people;
 - b. the relative abundance or scarcity of the cultural heritage resource;
 - c. the historical extent of the traditional use of the cultural heritage resource; and,
 - d. the impact on the FSP holders government granted timber harvesting rights of conserving or protecting the cultural heritage resource.

- a. that have a high archaeological potential as identified in an archaeological overview assessment or a Cultural Heritage and Resource Evaluation (CHRE) for the area; and/or,
 - b. for which site-specific information regarding cultural heritage resources is brought forward or made available to the FSP holder by a First Nation or government.
- 4. providing the results of the Cultural Heritage Resource Evaluation to potentially affected First Nations identified through the Consultative Areas Database prior to conducting operations; and,
- 5. conducting all harvesting, road construction, and mechanical site preparation activities consistent with recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (2) above, that are practicable and are required to conserve or, if necessary, protect a cultural heritage resource if it is valuable and scarce, to the extent of its historical use; including for previously unidentified cultural heritage resources encountered during harvesting, road construction, or mechanical site preparation activities:
 - a. protecting the CHR to the extent necessary until a Cultural Heritage Resource Evaluation is carried out; and,
 - b. continuing operations in a manner that is consistent with recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (a) above that are practicable and are required to conserve or, if necessary, protect the cultural heritage resource if it is valuable and scarce, to the extent of its historical use.

Objective 4.3.2 For cedar from the Nass South SRMP LUOR Order

Nass South SRMP LUOR Order, Objective 36 is to maintain a sustainable source of cedar for the applicable First Nation to practice their traditional, cultural and subsistence uses.

4.3.2.1 Strategy for cedar in the Nass North FDU

For the purpose of Objective 4.3.2, during the term of this FSP, minor removal of western red cedar and cypress in Wildlife Tree Retention Areas and Riparian Management Zones will be facilitated by the FSP holder to support a sustainable source of these species for First Nations traditional use.³⁰ The FSP holder will:

- 1. communicate with First Nations identified through strategy 3.5.2.1 (2) cutblocks with a component of cedar prior to the start of harvesting operations, including the location of any Monumental Cedar trees;
- 2. at the request of a First Nation Council, and prior to the lapsing of the cutting permit for any particular harvest area, authorize by letter of agreement between the First Nation Council and the FSP holder the removal of western red cedar or cypress for

³⁰ Traditional uses including bark stripping, root harvesting, and whole tree removal for various purposes. Uses that do not require the harvesting of whole trees will not be administered by the FSP holder.

cultural purposes from retention areas, including Wildlife Tree Retention Areas (WTRA) or Riparian Management Zones³¹ (RMZ), within active cutting authorities as follows:

- a. harvesting of western red cedar and cypress from wildlife tree retention areas and riparian management zones will be limited to:
 - i. no more than 5% of the co-dominant/ dominant stems within a WTRA, with no more than 10% of the stems within a given hectare, unless the Site Plan describes how the WTRA is able to retain its function; and,
 - ii. removal of co-dominant/dominant stems only from within a RMZ area consistent with the RMZ retention described in Result 4.5.3.1 unless the Site Plan describes how the RMZ is able to retain its function; and,
3. provide a copy of agreement(s) resulting from section (2) above to the Coast Mountains Resource District Manager.

4.4 Visual Quality in the Nass North FDU

Reference Information for this Objective

Type of Objective	Objectives enabled in regulation - FRPA ss. 180 and 181 for scenic areas and GAR s. 17 for VQOs according to Kalum District Manager's letters dated January 7 1997, September 8 1998 and March 23 2000 established VQOs and designated Scenic Areas in the Kalum District. Not Applicable - Objective Set in Regulation – FPPR s. 9.2 (2) visual quality for scenic areas established by October 24, 2002 and for which there is no visual quality objective, Effective January 31, 2004 – Not Applicable because scenic areas in the Nass North FDU have established VQOs.
Scenic Areas with VQOs established at May 31, 2016)	As of May 31, 2016, Visual Quality Objectives are established in the Nass North FDU for the following areas: <ul style="list-style-type: none"> ▪ Highway 37 (Stewart -Cassiar) through the Nass TSA

Objective 4.4.1 For visual quality set by Government

The objective for visual quality for the Nass North FDU is to ensure that the altered forest landscape for scenic areas meets the visual quality objective for the scenic area.

4.4.1.1 Result for visual quality in the Nass North FDU

During the term of this FSP, for scenic areas identified on Appendix IV, Figure 17, the FSP holder will, with the support of visual design techniques, carry out forest activities in scenic areas in a manner that is consistent with the visual quality objective, except:

1. in those circumstances where the results of a catastrophic event (windthrow, landslide, etc.) exceed the scale criteria (percent alteration guideline) for a VQO , road construction and/or harvesting activities will be:

³¹ Removal of stems from within Riparian Reserve Zones will be as per the Forest Planning and Practices Regulation- currently, removal for cultural purposes is not an allowed activity with RRZs

- a. planned to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,
 - b. only carried out upon approval of the Delegated Decision Maker;
2. in those circumstances where a cutblock or road borders a previously existing cutblock, road, structure or other disturbance or natural feature that is rectilinear, geometric in shape, or otherwise does not appear natural in the landscape, road construction and/or harvesting activities will be carried out to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,
3. in those circumstances where the results of a forest health impact exceeds the scale criteria (percent alteration guideline) for a VQO and harvesting or road construction is required to address the threat from insects, disease, or decay, road construction and/or harvesting activities will be:
 - a. planned to be consistent with the design aspects of the category of alteration (VQO), but the visual condition achieved may be greater in scale and visibility on the landscape; and,
 - b. only carried out upon approval of the Delegated Decision Maker.

4.5 Water Resources, Riparian Areas, and Fish in the Nass North FDU

Reference Information for this Objective

Type of Objective	Objective Set in Regulation – FPPR s. 8 (water, fish, wildlife and biodiversity within riparian areas), FPPR s. 8.1 (Fish habitat in fisheries sensitive streams), and FPPR s. 8.2 (Water in Community Watersheds)
Conditional Exemptions	FPPR ss. 12.3, 12.31, 12.32
Mandatory Practice Requirements	FPPR ss. 54, 58
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR ss.12.3, 12.31, and 12.32 applied as follows: <u>Decision:</u> per FPPR s. 12.3, the FSP holder commits to comply with FPPR ss. 47, 48, 49, 50, 51, 52(2) and 53 Per FPPR s. 12.31, the FSP holder adopts FPPR ss. 55, 56, and 57 as results or strategies in fisheries sensitive watersheds. Per FPPR s. 12.32, the FSP holder adopts FPPR ss. 59, 60 & 61 as results or strategies in Community Watersheds.

Objective 4.5.1 For water, fish, wildlife and biodiversity within riparian areas set by Government

The objective set by government for water, fish, wildlife and biodiversity within riparian areas is, without unduly reducing the supply of timber from British Columbia's forests, to conserve at the landscape level the water quality, fish habitat, wildlife habitat, and biodiversity associated with those riparian areas.

Objective 4.5.2 For fish habitat in fisheries sensitive streams set by Government

There are currently no fisheries sensitive streams in the Nass North FDU; therefore no objectives from FPPR s. 8.1 apply.

Objective 4.5.3 For community watersheds set by Government

Consistent with FPPR s.8.2 and without unduly reducing the supply of timber from BC's forests, the objective set by government for water in community watersheds is, where water is being diverted for human consumption through a licenced waterworks in a community watershed, to prevent cumulative hydrological effects of primary forest activities from resulting in a material adverse impact on either:

1. the quantity or timing of flow of the water from the waterworks; or,
2. human health that cannot be addressed by water treatment required under an enactment or the waterworks licence.

4.5.3.1 Result for water and riparian in the Nass North FDU

During the term of this FSP, for primary forest activities in riparian management areas, riparian reserve zones, and riparian management zones (RMZ) described in FPPR Sections 47, 48, and 49, the FSP holder will:

1. undertake to comply with FPPR Sections 50, 51, 52(2), and 53 for primary forest activities; and,
2. retain basal area within riparian management zones (RMZ) at levels in accordance with Table 14 where the retained basal area may be distributed in a non-uniform manner along the stream resulting in clumps of retained trees interspersed with areas that have no retention.

4.5.3.2 Result for water in community watersheds in the Nass North FDU

For the purposes of sections 8.2 of the FPPR, the FSP holder will comply with FPPR sections 58, 62, and 63, and adopts FPPR sections 59, 60, 61, and 62 as results for water in community watersheds during the term of this FSP.

4.5.3.3 Strategy for large woody debris in the Nass North FDU

Consistent with the intent of FPPR s. 51(1) (g) and 51 (2) respecting (not causing) material adverse impacts on the riparian reserve zone, during the term of this FSP the holder of this FSP will:

1. retain blowdown within riparian reserve zones and/or riparian management zones as large woody debris, except where necessary to satisfy safety considerations; and,
2. maintain naturally deposited large woody debris in rivers and streams in riparian classes S1 to S4, except where necessary to satisfy safety considerations or to mitigate potential material adverse effects on the riparian reserve zone or stream morphology.

Table 14. Retention Targets in Riparian Reserve Zones (RRZ) and Riparian Management Zones (RMZ) – Nass North FDU

Riparian Class	Area or Stream Width	Riparian Management Area Width ¹	Riparian Reserve Zone Width ¹	Riparian Management Zone Width ¹	Basal Area Retention ² Minimum within RMZ ³
Fish Streams: FPPR s. 47					
S1-A	> 100 m	100 m	0 m	100 m	>= 20 %
S1-B	20-100 m	70 m	50 m	20 m	>= 20 %
S2	5 – 20 m	50 m	30 m	20 m	>= 20 %
S3	1.5-5 m	40 m	20 m	20 m	>= 20 %
S4	< 1.5 m	30 m	0 m	30 m	>= 10 %
Non-Fish Streams: FPPR s. 47					
S5	> 3 m	30 m	0 m	30 m	>= 10 %
S6	< 3 m	20 m	0 m	20 m	N/A
Wetlands: FPPR s. 48					
W1	> 5 ha	50 m	10 m	40 m	>= 10 %
W3	1 - 5 ha	30 m	0 m	30 m	>=10 %
W5	Complex > 5 ha	50 m	10 m	40 m	>= 10 %
Lakes: FPPR s. 49					
L1-A	> 1000 ha, or designated	0 m	0 m	0 m	>= 10 %
L1-B	5 - 1000 ha	10 m	10 m	0 m	>= 10 %
L3	1 – 5 ha	30 m	0 m	30 m	>= 10 %
L4	0.5 – 1 ha	30 m	0 m	30 m	>= 10 %

¹ Width measured in slope distance.

² Management Zone percentage means the percentage of naturally occurring pre-harvest forest basal area and structure of mature and old forest that occupies (or historically occupied) the site.

³ Reserves and Management Zones around all riparian features may be increased in size and % retention to meet management objectives for other resources.

*** Abbreviated Relevant FPPR sections:**

FPPR s.12.3 – Conditional Exemption (subject to the minister's approval) from one or more of FPPR sections 47-53 respecting objectives set by government in FPPR section 8 for water, fish, wildlife, and biodiversity.

FPPR s.12.31 – Conditional Exemption (subject to the minister's approval) from one or more of FPPR sections 55-57 respecting objectives set by government in FPPR section 8.1 pertaining to cumulative hydrological effects on fish habitat fisheries sensitive watersheds.

FPPR s.47 (4-6) – stream riparian classes, minimum widths on each side of the stream for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.48 (3-5) – wetland riparian classes, minimum widths on each side of the wetland for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.49 (2-3) – lake riparian classes, minimum widths on each side of the lake for RMA, RRZ and RMZ (see FPPR for full results or strategies).

FPPR s.50 (1) – a person must not construct a road in a RMA unless there is a higher risk of sediment delivery outside of the RMA, there is no other option for road location or it is a stream crossing (see FPPR for full results or strategies).

FPPR s.50 (2) – if a road is constructed within a riparian management area (RMA) road maintenance activities must not occur beyond the clearing width of the road (see FPPR for full practice standard).

FPPR s.50 (3) – a person must not remove gravel or fill from within a RMA unless it is within the road prism, at a stream crossing or there is no other practical option (see FPPR for full practice standard).

FPPR s.51 (1) – a person must not cut, modify or remove trees in a RRZ unless...(see FPPR for full results or strategies).

FPPR s.51 (1-3) – no silviculture treatments within a RRZ (see FPPR for full practice standards).

FPPR s.52 (2) – maintain enough trees in the RMZ to maintain stream channel and bank stability (see FPPR for full result or strategy).

FPPR s.53 – must maintain tree and vegetation cover in the RMA of temperature sensitive streams to prevent an increase in stream temperature and impacts to fish (see FPPR for full result or strategy).

FPPR s.54 – a primary forest activity on the coast must not cause a fan destabilization that has adverse effects on objectives set by government (see FPPR for full practice standard).

FPPR s.55 – temporary access stream crossings must protect stream channel and stream banks and remove crossing when it is no longer required (see FPPR for full practice standards).

FPPR s.56 – ensure that primary forest activity does not adversely affect fish passage (see FPPR for full practice standard).

FPPR s.57 – conduct primary forest activities at a time and in a manner that is unlikely to harm fish or fish habitat (see FPPR for full practice standard).

FPPR s.58 – agreement holder must not use livestock or construct a corral within a RMA (see FPPR for full practice standard).

FPPR s.59 – agreement holder must ensure that primary forest activity does not cause material that is harmful to human health to be deposited in, or transported to water diverted for human consumption (see FPPR for full practice standard).

FPPR s.60 – agreement holder must ensure that primary forest activity does not damage a licenced waterworks; and must not harvest timber or construct a road within 100m upslope of a licenced waterworks... unless sediment delivery to the intake is not increased (see FPPR for full practice standard).

FPPR s.61 – agreement holder must ensure that timber harvesting or construction of excavated or bladed trails in a community watershed does not cause sediment harmful ... to enter a stream ... diverted for human consumption (see FPPR for full practice standard).

FPPR s.62 – to prevent interference with the subsurface flow path of a drainage area that contributes to a spring that is the source of water for a licenced waterworks...(and identified by the minister), agreement holder must not construct a road closer than 100m upslope of the spring unless construction does not interfere with subsurface flow... or as approved by the minister (see FPPR for full practice standard).

FPPR s.63 – for fertilizer applications besides spot applications, agreement holder must not apply fertilizer closer than 100m upslope of a licenced waterworks, or within 10 m of a perennial stream observable from an aircraft... if application results in elevated nitrate nitrogen and chlorophyll levels above specified limits (see FPPR for full practice standard).

4.6 Wildlife in the Nass North FDU

Reference Information for this Objective

Type of Objective	Objectives Set in Regulation – FPPR s7(2) SAR Notice - Not Applicable Objectives Enabled by Regulation – GAR s. 9 (general wildlife measures), 10 (wildlife habitat areas & objectives), 11 (wildlife habitat features), 12(1) (Ungulate winter range), 13 (SAR and Regionally important Wildlife Species)
Decisions Creating	FPPR s. 7 (2) Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Kalum Forest District, December 30, 2004 (includes marbled murrelet, coastal tailed frog, grizzly bear) - Not Applicable to the Nass North FDU because Grizzly Bear Notice superseded by GAR Order #6-282 and outside the normal range of coastal tailed frog and marbled murrelet. GAR Order: Ungulate Winter Range – Order #U-6-002 Mountain goat (Nass TSA and upper portion of the Ningunsaw and Unuk watersheds), December 2008. GAR Order: Ungulate Winter Range – Order #6-018 Moose (Nass TSA), September 17, 2014. Order-Specified Area #6-282 Grizzly Bear (Nass TSA), October 20, 2014.
Mandatory Practice Requirements	FPPR ss. 69 & 70
Practice Requirement(s) Eligible for Exemption	n/a

Objective 4.6.1 For wildlife set by Government

In respect of the FPPR section 7(1), the objective set by government for wildlife is, without unduly reducing the supply of timber from British Columbia's forests, to conserve sufficient

wildlife habitat in terms of amount of area, distribution of areas and attributes of those areas, for:

1. the survival of species at risk;
2. the survival of regionally important wildlife; and,
3. the winter survival of specified ungulate species.

4.6.1.1 Result for mountain goat, moose, and grizzly bear in the Nass North FDU

In respect of Objective 4.6.1 the FSP holder is exempt from preparing results or strategies, and will comply with:

1. for moose, GAR order #6-018;
2. for mountain goats, GAR order #U-6-002; and,
3. for grizzly bear, GAR order #6-282.

4.6.1.2 Result for wildlife in the Nass North FDU

In respect of Objective 4.6.1, the FSP holder adopts Results 4.5.3.1 (Water and Riparian), 4.6.1.1 (Mountain goat, Moose, and Grizzly Bear), 4.7.1.1 (Biodiversity), and Strategy 4.5.3.3 (Large Woody Debris) during the term of this FSP.

4.7 Biodiversity in the Nass North FDU

Reference Information for this Objective

Type of Objective	Objectives Set in Regulation – FPPR s. 9 (landscape level biodiversity) and 9.1 (stand level biodiversity)
Mandatory Practice Requirements	FPPR s. 68 (Coarse woody debris)
Conditional Exemptions	FPPR ss. 12.4 & 12.5
Practice Requirement(s) Eligible for Exemption	<u>Decision:</u> No Exemption per FPPR ss. 12.4 and 12.5. The FSP holder adopts FPPR ss. 64, 65, 66, and 67 as results during the term of this FSP.

Objective 4.7.1 For biodiversity set by Government

1. In respect of FPPR section 9, the objective set by government for wildlife and biodiversity at the landscape level is, without unduly reducing the supply of timber from British Columbia's forests and to the extent practicable, to design areas on which timber harvesting is to be carried out that resemble, both spatially and temporally, the patterns of natural disturbance that occur within the landscape; and,
2. In respect of FPPR section 9.1, the objective set by government for wildlife and biodiversity at the stand level is, without unduly reducing the supply of timber from British Columbia's forests, to retain wildlife trees.

4.7.1.1 Result for biodiversity in the Nass North FDU

In respect of biodiversity Objective 4.7.1, the FSP holder will adopt as results FPPR sections 64, 65, 66, and 67 during the term of this FSP.

4.8 Botanical Forest Products

Reference Information for this Objective

Type of Objective	Voluntary adoption of Land Use Objectives – Nass South SRMP LUOR Order Objective 21 (Pine Mushrooms) (February 25, 2016)
Conditional Exemptions	N/A
Practice Requirement(s) Eligible for Exemption	<u>Decision</u> : The FSP holder adopts the Nass South SRMP LUOR Order Objective 21 as an objective for pine mushrooms in the Nass North FDU.

Objective 4.8.1 For pine mushroom resources from the Nass South SRMP LUOR Order

The objective for pine mushroom resources as set out in the Nass South SRMP LUOR Order, is to maintain at least 50% of the productive pine mushroom (*Tricholoma magnivelare*) sites³² in forest ages ranging from 80 to 200 years³³ during the term of this FSP.

4.8.1.1 Strategy for pine mushroom resources in the Nass North FDU

During the term of this FSP, the FSP holder will ensure that productive pine mushroom sites associated with the Licencee's operations are maintained by:

1. identifying and mapping productive pine mushroom sites at the stand level during the ecological site mapping stage of operational planning; and,
2. if harvesting or road construction is proposed within the identified and mapped productive pine mushroom sites, 100% of the identified productive pine mushroom area will be addressed through the Site Plan to ensure that, at a minimum, 50% of the identified productive pine mushroom area will be maintained.

5.0 ADDITIONAL FSP INFORMATION

In addition to the objectives, strategies, and results, the following measurea for invasive plants and natural range barriers apply to the Kalum, Nass South and Nass North FDUs.

5.1 Measures for Invasive Plants

Reference Information for this Measure

Type of Objective	Measure Set by Regulation FRPA s. 47 and FPPR s. 17.
Exempted Areas	N/A

³² Productive pine mushroom sites means those sites that can best produce pine mushrooms, i.e. sites that currently produce pine mushrooms and those sites undisturbed, previously logged or burned that can produce pine mushrooms. These sites are generally pine or hemlock leading stands below 800 metres elevation in the following site series: ICHmc1/01b, ICHmc2/01b and CWHws2/03. The minimum size of area to be considered is 0.3 ha for homogeneous site series and 1 ha for site series complexes.

³³ If future research shows that silviculture systems (other than clearcut harvesting) can perpetuate pine mushroom production, the areas having these silviculture systems will contribute to meeting the objective.

The following are measures that will be carried out by the FSP holder in accordance with FPPR s. 17, for control of invasive plant species identified in the Invasive Plants Regulation:

1. If, as a result of primary forest activities carried out by the FSP holder during the term of this FSP, more than 0.30 contiguous hectare (excluding road prism) of mineral soil has been exposed by road, trail, or landing construction, maintenance or deactivation; or through forest floor displacement during, site preparation or debris disposal in and following harvest of a Cutblock to which this FSP applies, and such disturbance is likely to result in the introduction or spread of invasive plants, the FSP holder will, as soon as practicable and within twelve months of completion of the above listed activity, seed the disturbed area.
2. The seed to be used for the purposes of paragraph (1) above by the holder of this FSP will meet or exceed the Canada Common #1 specifications in the Seeds Act R.S.C. 1985, c. S-8 and meet or exceed the standards of the Forest and Range Practices Act Invasive Plants Regulation. The seed mixture employed will give regard to the palatability preference by bears of clover over grasses and the wildlife objectives that apply to the area being seeded. A non-palatable mixture with less than 10% clover will be employed where there is a high or moderate concern over human-wildlife interactions, specifically in the following circumstances:
 - a. along rights-of-way of “permanent use” roads that are regularly active over the term of the forest rotation (e.g. Forest Service Roads, mainline roads, and branch roads); and,
 - b. on landings or trails located on or within 100 metres of the above roads.
3. Machinery to be employed by the holder of this FSP will be inspected for noxious weeds and cleaned:
 - a. before it is brought onto the operations of the holder of this FSP; and,
 - b. before it is moved from one FDU to another.

5.2 Natural Range Barriers

Reference Information for this Measure

Type of Objective	Measure Set by Regulation FRPA s. 48 and FPPR s. 18.
Applicable Areas	Applicable to areas of the FDU within or immediately adjacent to a range tenure.

In relation to section 18 of the FPPR, during the term of this FSP the FSP holder will:

1. at least 30 days before harvesting a cutblock or constructing a road that is located within an area subject to a range agreement, inform the holder of that range agreement of the harvesting or construction; and,
2. if the harvesting or construction referred to in subsection (1) will remove or render ineffective a known natural range barrier that a holder of a range agreement referred to in that subsection relies upon for the purposes of that range agreement, make reasonable efforts to come to an agreement with that holder on mitigation measures, and implement:

- a. mitigation measures in accordance with that agreement; or,
- b. reasonable mitigation measures as soon as practicable after the harvesting or construction, if an agreement referred to above is not reached.

6.0 STOCKING STANDARDS

For the purposes of FPPR 16(1), section 44(1) of that regulation will apply to each area to which this FSP applies (including the Kalum FDU, Nass South FDU, and Nass North FDU), where the FSP holder is required to establish a free growing stand. The stocking standards have been developed to ensure site specific criteria are applied for the establishment of healthy, valuable, and ecologically suited trees on harvested areas for which the Licence holder carries a reforestation obligation.

Appendix I includes a number of standards, species acceptability criteria, and damage criteria that together with the following requirements, define the stocking standards that will be applied to the FDUs in this FSP.

6.1 Application of Stocking Standards

Stocking Standards will be generally applied:

1. across all FDU's on harvest areas where the FSP holder has an obligation to reforest; and,
2. at the Standards Unit (SU) level.

6.2 Regeneration Method and Delay

The regeneration delay will be as indicated in Appendix I – Stocking Standards for all BEC site series for both artificial and natural regeneration methods, except in circumstances where partial cutting systems, including seed tree, shelterwood, and single tree selection silviculture systems are employed on the following site series:

1. ICH vc site series 01(1), 02(1), 01(2), 02(2);
2. ICH mc1 site series 01 and 02; and,
3. ICH mc1a site series 01 and 02.

In these circumstances regeneration delay can be met immediately following harvest if the residual stand has no significant damage or pest problems and meets minimum stocking standards. If regeneration is achieved immediately following harvest, the earliest Free-Growing date is 12 months after completion of harvest.

For stands prescribed with SEDR stocking standards a free growing declaration can be made no earlier than 24 months after completion of harvest.

6.3 Species Acceptability - General

For a standards unit comprised of more than one BEC site series (mosaics / complexes):

1. the preferred and acceptable species for the standards unit include all of the preferred and acceptable species for all of the BEC site series comprising the standards unit; and,
2. the potential crop trees will only be considered preferred or acceptable where they are ecologically suited within the standards unit; and,

3. the Target Stocking Standards, Minimum Preferred and Acceptable, Minimum Preferred, Minimum inter-tree distance and Minimum Height will be those of the dominant site series; and,
4. tertiary species may be considered preferred or acceptable in circumstances where:
 - a. the species is present in the harvested stand (e.g. mountain hemlock in transitional site series complexes);
 - b. the species is suitable for addressing management of riparian zones, wildlife habitat areas, or other objectives;
 - c. the species is ecologically suitable for site restoration; or,
 - d. other circumstances where a rationale for their use is provided, either in a Site Plan for individual sites, or in the form of an amendment for broader application across a FDU; and,
5. species acceptability will be according to Table 15 Even-Aged and Wildlife Habitat Stocking Standards and Table 16 Footnotes for Stocking Standards.

6.4 Species Acceptability – Spruce leader weevil

Resistant stock mitigates risk of spruce weevil damage. For background information, reference the Ss Weevil Decision Tool

(<http://www.for.gov.bc.ca/hre/forgen/projects/spruceweevil>) and BC Journal of Ecosystems and Management 7(3): 45-49.

The suitability of seed sources for use in spruce weevil hazard sites will be as follows:

1. for LOW Hazard Subzones (CWH vh2, ICHmc1, ICHmc1a, ICHmc2 above 360m elev., ICHvc) and MODERATE Hazard Subzones (CWHvm1, CWHws1 above 400m elev., CWHws2, CWHvm2, and ICHmc2 0-360m elev.):
 - a. accept Class A seed orchard Sxs or Ss seed as a “preferred” species; and,
 - b. restrict Ss and Sxs to “acceptable” species for natural stand and natural genetically improved seed.
2. for HIGH Hazard Subzones (CWHws1 0-400m elevation), restrict Class A seed orchard seed, natural genetically improved seed, and natural stand Sxs or Ss seed to “acceptable” only.

6.5 Standard Units/ Silviculture Surveys Stratification

Within each site plan a block may be subdivided into a series of standards units (SU). BEC zones and site series often form the basic unit of stratification. Within each SU, standards such as maximum site disturbance, silviculture system and stocking standards are the same.

For the purposes of FPPR s 46.11(2), for an area to be considered mappable its minimum dimension must be at least 35 metres with a minimum size of 0.5 ha, which will generally result in riparian influenced forests being stratified together with upland forests to form complex Standards Units that are larger than 1 hectare in size. The minimum standards unit area is 1.0 ha with a minimum polygon size of 0.5 ha within a standards unit. Where a standards unit is comprised of a complex of 2 or more ecological classifications, the standards unit(s) will be managed according to the dominant site series.

These criteria also apply to silviculture surveys when stratifying within a standards unit. These criteria do not apply to opening patches less than 1.0 ha.

6.6 Even-aged Stocking Standards

Even-aged management stocking standards set out in Appendix I, Table 15 Even-Aged and Wildlife Habitat Stocking Standards apply to silviculture systems when:

1. two or less distinct age classes of crop trees will be created within a stand; and/or,
2. the basal area of layer 1 and layer 2 trees is 10m² or less following harvesting (including SEDR areas); and/or,
3. opening patches are less than 0.25ha with a maximum width of 50m.

Even-aged management silviculture systems include clearcut, clearcut with reserves, seed tree, shelterwood, and patch cut (where the openings created meet the above definition).

6.7 Multi-Storey Stocking Standards

The multi-storey stocking standards set out in Appendix 1, Table 18 apply to uneven-aged silvicultural systems when;

1. Layer 1 + Layer 2 basal area is >10m²/ha, and
2. Crop trees consist of three or more distinct age classes.

Multi-storey stocking standards set out in Appendix 1, Table 18 may apply to even-aged silvicultural systems when;

1. Layer 1 + Layer 2 basal area is < 10m²/ha, and
2. Crop trees consist of two distinct age classes where one layer must be layer 1 or 2.

6.8 Wildlife Habitat Stocking Standards

Wildlife habitat stocking standards apply to areas with specific ecological classifications within Grizzly Bear Identified Watersheds (GBIW) shown on Map 7 of the Kalum SRMP. Management of grizzly bear habitat will be focused on the grizzly bear identified watersheds, and will occur by maintaining forage within critical habitats. This means cluster planting and/or reduced stocking in richer, wetter ecosystems. Foraging habitat will be promoted on high value grizzly bear habitat sites by managing stocking levels during the Free Growing timeframe (ending at the date of Free Growing Declaration) to maintain open canopy conditions (forage habitat) with forested patches dispersed across the landscape through the stand rotation.

These stocking standards may also be applied to important forage areas for other species such as moose in accordance with conditions in a GAR Order (e.g. Order U-6-009 Skeena Moose and U-6-018 Nass TSA Moose), or recommendations from a Qualified Professional. Species acceptability, target and minimum stocking standards, and minimum tree heights are provided by site series for applicable wildlife habitats in Appendix I Table 15. Even-Aged and Wildlife Habitat Stocking Standards using a footnote “d”.

The following additional conditions apply to wildlife habitat stocking standards:

1. The minimum size for a silviculture treatment within a Standards Unit is:
 - a. at least one hectare for pure sub-hygic to sub-hydric sites; or,

- b. two hectares of non-contiguous sub-hygic to sub-hydric sites within ecosystem complexes where the individual sites are greater than 0.25 ha and such sites comprise more than 20% of the ecosystem complex area.
2. The minimum size for a willow or red-osier dogwood complex is:
 - a. one hectare for pure willow and/or red-osier dogwood sites; or,
 - b. two hectares of noncontiguous willow and/or red-osier dogwood sites within ecosystem complexes where the individual sites are greater than 0.25 ha and such sites comprise 20% or more of the ecosystem complex sites.
3. The minimum inter-tree distance for well-spaced trees is 1.0 m.
4. Reforestation will target areas most suitable for animal security cover including elevated areas and drier areas adjacent to forage habitat areas.
5. Forage areas will be managed as gaps using a target minimum of 20% canopy gaps that will remain through the life of the stand; a soft target for effective forage cover (without crop trees) at the time of free growing is 40 – 70% of the net area to reforest (NAR) in gaps and the remainder in forested area, resulting in an Operational Adjustment factor³⁴ stocking reduction (OAF1) of 40-70%, and providing 30 – 60% of the NAR for crop tree cover (in patches across the area), and a minimum of 30% retention in mature + old forest (see Order U-6-009 Skeena Moose for additional direction).
6. If the density exceeds 4000 stems per hectare at the free growing stage a juvenile spacing entry must be completed to provide the access to security cover (trails and small caps in forested areas) and develop the required gaps in forage areas. Spacing is to target leaving gaps in areas with abundant forage.

6.9 Single Entry Dispersed Retention Stocking Standards

The Single Entry Dispersed Retention Stocking Standards (SEDRSS) were developed for stands being managed under a silvicultural system with only a single entry planned partial cut harvest entry, where retained stems contribute towards achieving the stocking obligation. Therefore application of the SEDRSS does not require additional intermediate stand harvest entries. Applicable harvest areas for SEDRSS are characterized by the presence of a dispersed Residual Basal Area (RBA) ranging from 11 to 39 m² per hectare in stocking consisting of trees that:

1. Meet Free Growing Damage Criteria in the Single Entry Dispersed Retention Stocking Standard Framework Implementation Guide (2014) and,
2. Are larger than 12.5 cm Diameter at Breast Height (DBH) at the time of the Free Growing Declaration.

³⁴ There are two OAF values used by Ministry of Forests yield tables, Table Interpolation Program for Stand Yields (TIPSY) : OAF1 is used to represent reduced yield due to gaps in stocking; and OAF2 is used to represent decay and losses due to disease and pest when they are present in large magnitudes. OAF1 is a constant reduction factor that shifts the yield curve down whereas the influence of OAF2 increases with age and therefore alters the shape of the curve.

Application of the SEDRSS

In applying the SEDRSS standards:

1. The minimum stand area to be considered for SEDRSS is 1 hectare;
1. SEDRSS are designed for conifer management only; therefore stands with significant broadleaf Dispersed Basal Area Retention (more than 50%) are to be managed using either multi-story or even-age stocking standards;
2. Stands must have between 10 and 40 m² of dispersed residual basal area following harvesting; stands with less than the minimum 10m²/ha of Dispersed Basal Area Retention requirement are to be managed using other (generally even-age) stocking standards;
3. Areas of 0.25 ha or larger that were not harvested or disturbed and have more than 40 m² RBA following harvesting, if not regenerated according to the SEDRSS are to be removed from the Net Area to Reforest (NAR) of a Standards Unit (SU), mapped, and identified as Retention or Reserve Area;
4. Areas 1 hectare or larger that have:
 - a. more than 40 m²/ha of Dispersed Basal Area Retention of ecologically suitable species that meet the FG damage criteria following harvesting; and,
 - a. no internal openings greater than 0.1 ha. in size;
 do not meet the requirements of SEDRSS; however they do meet the definition of an Intermediate cut and require a separate stocking standard.

6.10 Commercial Thinning Stocking Standards

Commercial thinning stocking standards apply to immature stands where intermediate harvest removes merchantable size trees with the intent of creating a partial harvesting system that does not require regeneration. The commercial thinning stocking standards are:

1. The preferred and acceptable species in Table 15. Even-Aged and Wildlife Habitat Stocking Standards; and,
2. Post thinning density greater than 60% of the minimum preferred and acceptable stocking level by BEC unit as outlined in Table 15 Even-Aged and Wildlife Habitat Stocking Standards.

6.11 Selection of Well-Spaced Stems

Well-spaced future crop trees must be in good health, and of good form and vigour. The following qualifiers apply to the criteria for good health, good form and good vigour:

1. the assessment of health, form and vigour applies only at the time of Free Growing;
2. the criteria are specific to even-aged managed stands, and to layers 3 and 4 in uneven-aged managed stands; and,
3. the criteria do not apply to broadleaf species that are included in a Stocking Standard for the purpose of wildlife habitat that will degrade the tree over time as a timber producing species on the site (e.g. aspen or cottonwood accepted as a winter forage species for moose) , but are applicable to broadleaf species that will become part of the future economic harvest (e.g. cottonwood for pulp, or paper birch that was selected

into a stand as individual stems (not coppice /basal sprout clumps) through conifer release treatment on mesic sites where birch grows at a comparable rate to Hw, Pl, and Sx.

6.12 Free Growing Crop Trees - Criteria for Evaluating Health, Form and Vigour

For the purposes of this FSP and the stocking standards referred to in FPPR 16(3) and 44(1) a well-spaced tree (or acceptable residual tree) must meet the criteria for health, form and vigour, as described in the following:

1. Appendix 9 (Table A5-1 and Figures A5-1 to A5-4) in the *Establishment to Free Growing Guidebook: Prince Rupert Forest Region*, (version 2.3, Revised October, 2007);
2. Appendix 10 of the *Establishment to Free Growing Guidebook: Prince Rupert Forest Region* (version 2.3, Revised October, 2007) for advanced regeneration and residual mature and pole layer crop trees;
3. Prince Rupert Forest Region, Regional Operating Standards # 1, *Acceptability Criteria for Balsam Advanced Regeneration*, July 22, 1997;
4. *Defoliation Free Growing Damage Standards for Determinate Growth Conifers*, Forest Practices Branch, 2005/03/02; and,
5. *Free Growing Damage Criteria for Multi-layered Stands in British Columbia*, February 2007.
6. For SEDRSS stands, the SEDRSS Damage Criteria in the *Single Entry Dispersed Retention Stocking Standard Framework Implementation Guide* (2014).

6.13 Minimum Horizontal Inter-Tree Distance

Unless otherwise stated in Appendix I, the minimum inter-tree distance for a well-spaced tree is:

1. two (2.0) metres and can be reduced to 1.6 meter distance:
 - a. when less than 20 meters from a road centerline or other conditions where visual screening is prescribed (e.g. for wildlife visual screening along roadways);
 - b. where cluster planting is required to avoid planting within 5 meters of infected stumps in areas that have Tomentosus root disease or other root disease;
 - c. where immediately adjacent to any stream or riparian area, natural non-productive area or unplantable slash;
 - d. on hygric or sub-hydric sites; and,
 - e. for Layer 4 of multi-layer stands managed as uneven-aged stands that have been planted.
2. one (1.0) metre in the following situations:
 - a. when cluster management is prescribed in identified high-value and moderate-value animal habitat areas;
 - b. between layers 1, 2, 3, and 4 for multi-layered stands;
 - c. on colluvial or talus sites;
 - d. on mechanically prepared sites.

3. zero (0.0) meters for Layer 1 of multi-layer stands.

6.14 Free Growing Crop Trees – Criteria for Evaluating Competition

For the purposes of this FSP and the stocking standards referred to in FPPR 16 (3) (b) and 44 (1) (b):

1. deleterious competition at the time of free growing will be assessed using Appendix 9 of the *Establishment to Free Growing Guidebook: Prince Rupert Forest Region*, (version 2.3, Revised October, 2007);
2. the individual tree free growing assessment method (quadrant method) in Appendix 9 (referenced above) will apply to all BEC subzones subject to these FSP stocking standards;
3. competing brush is defined as deleterious species that are over-topping crop trees or have the potential to overtop crop trees;
4. species eligible for selection as well-spaced crop trees are not considered competing vegetation;
5. the minimum percentage height above competing brush in order to be free growing:
 - a. for ICH Subzones is 100%
 - b. for ESSF and MH subzones is 125%
 - c. for All other subzones is 150%.
6. the definition of upland cottonwood in Appendix 9 of the *Establishment to Free Growing Guidebook: Prince Rupert Forest Region*, (version 2.3, Revised October, 2007) will be applied to mean any cottonwood not growing on a floodplain or fluvial site.

6.15 Hardwoods

Hardwood (deciduous or broadleaf) species are noted in the stocking standards and will only be used according to the Chief Forester's letter of May 01, 2008 – *Incorporation of mixed wood and broadleaves into Forest Stewardship Plan stocking standards, SP amendments and TSR regeneration assumptions*. Hardwood species may only be used as a preferred or acceptable species on sites noted in Appendix I – Stocking Standards, Table 16. Footnotes for Stocking Standards as being a productive, reliable, and feasible regeneration option (identified by footnote "a").

Where broadleaf (deciduous) species are accepted in the Stocking Standards, their use will be limited to contributing as acceptable species, and will not be counted toward the minimum preferred species tally; however, by virtue of their acceptability the deciduous species will not be considered to be competing vegetation for conifers in the following situations:

1. when the area (on a per hectare basis) occupied by broadleaf species stocking is less than 30 percent of full stocking (i.e. 3000 m² per ha occupied by broadleaf trees and crowns and the remainder not occupied by broad leaf trees at the time of Free Growing declaration);
2. for aspen, birch, and cottonwood, within riparian management areas of a stream, lake or wetland;

3. for birch, when growing as straight single stems (not coppice or clumps of basal sprouts with sweep) dispersed with the conifer stocking.

6.16 Riparian Management Considerations

For the purposes of this FSP and the stocking standards referred to in FPPR 16 (3) (b) and 44 (1) (b):

1. aspen, birch, red alder, and cottonwood are not considered competing vegetation within riparian management areas of a stream, lake or wetland; and,
2. herbaceous vegetation within 5 m of a S4, S5 or S6 stream is not considered competing vegetation.

6.17 Biogeoclimatic Transition Zones

For a standards unit that is on transitional site occurring between two BEC subzones, the standard that applies will be that of the dominant BEC subzone. This standard can be modified with the inclusion of components of the standard associated with the sub-dominant BEC subzone on the basis of the species presence. Additional components to the standard will be supported by a documented rationale (including acknowledgement of species present that regenerate naturally on the site) that will be incorporated into the Site Plan.

6.18 Climate Change

The Chief Forester's Standards for Seed Use may be amended from time to time to change or add transfer limits for specific species. Where such changes occur, the species may be added to prescribed stocking standards as an acceptable species on a site-specific basis within geographic and other limitations set out in the Chief Forester's Standards for Seed Use. Such site-specific modifications to stocking standards will be supported by a rationale documented in the Site Plan or through amendment to this FSP.

* Relevant References under FPPR and FRPA:

FRPA s.29 (1) – A Licencee who harvests timber under a FSP must establish... a free growing stand. (see FRPA for full requirement).

FPPR s.26 – must satisfy the minister that the standards will result in the area is being stocked with ecologically suitable species... (see FPPR for full requirement).

FPPR s.43 – requirements for the use of seed in establishing a free growing stand (see FPPR for full requirement).

FPPR s.44 – person with the obligation to establish a free growing stand must establish stocking standards ... (see FPPR for full requirement).

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APPENDIX I – STOCKING STANDARDS

Table 15. Even-Aged and Wildlife Habitat Stocking Standards

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
CWHvh2																
1050981	01		Cw ⁴⁸ Hw	Cw ⁴⁸ Hw Yc ⁴⁸	Pl Yc ⁴⁸	Pl Ss ³⁵ Ba	Ba ⁷ Ss ^{7,35}	Dr ^b	900	500	400	6	11	20	Hw Pl Ss Cw Yc Ba	2.0 1.5 1.4
1050980	02*		Pl	Pl Cw ⁴⁸ Yc ⁴⁸	Cw ⁴⁸ Yc ⁴⁸	Hw	Hw		400	200	200	3	8	20	Pl Others	1.4 1.0
1050982	03		Cw ⁴⁸ Hw Pl Yc ⁴⁸	Cw ⁴⁸ Hw Pl Yc ⁴⁸		Ss ³⁵	Ss ^{7,35}	Dr ^b	800	400	400	6	11	20	Hw Pl Others	1.8 1.4 1.0
1050984	04		Ba Hw Ss	Ba Hw Ss ³⁵ Cw ⁴⁸ Yc ⁴⁸	Cw ⁴⁸		Yc ⁴⁸	Dr ^b	900	500	400	6	11	20	Hw, Ss Cw, Yc Ba	2.0 1.5 1.4
1050985	05		Ba Cw ⁴⁸ Ss ³⁵	Ba Cw ⁴⁸ Ss ³⁵ Hw Yc	Hw ²		Yc ⁴⁸	Dr ^b	900	500	400	3	8	20	Hw, Ss Cw, Yc Ba	2.0 1.5 1.4

³⁵ Primary species are considered best suited to timber production. Secondary species rank lower than a primary species in reliability, feasibility and/or productivity and often have a restriction of some kind on a site. Tertiary species rank lower still and are expected to make up a minor component of a stand or a minor component of all stands in an area.

* Recommend to avoid logging.

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1050986	06		Ba Cw ⁴⁸ Ss	Ba Cw ⁴⁸ Ss Hw Yc	Hw ²		Yc ⁴⁸	Dr ^b	900	500	400	3	8	20	Hw, Ss Cw, Yc Ba	2.0 1.5 1.4
1050987	07		Ba Cw ⁴⁸ Ss	Ba Cw ⁴⁸ Ss Hw, Yc	Hw ²		Yc ⁴⁸	Dr ^b	900	500	400	3	8	20	Hw, Ss Cw, Yc Ba	2.0 1.5 1.4
1050988	08		Cw ⁴⁸ Ss	Cw ⁴⁸ Ss Hw Ba	BaHw			Dr ^a	900	500	400	3	8	20	Hw, Ss Cw, Yc Ba	2.0 1.5 1.4
1050989	09		Ss ¹	Ss ¹ Hw Cw ^{1,48} Ba	Ba ¹ Cw ^{1,48}		Hw ¹	Dr ^a	900	500	400	3	8	20	Hw, Ss Cw, Yc Ba	2.0 1.5 1.4
-	10*		no conifers	no conifers		-		Dr ^b	-	-	-	-	-	-	-	-
1050990	11		Cw ^{1,48} Hw ¹ Yc ^{1,48}	Cw ^{1,48} Hw ¹ Yc ^{1,48} Pl	Pl ¹		Hm ¹		800	400	400	3	8	20	Hw Pl Others	1.8 1.4 1.0
1050991	12*		Cw ^{1,48} Pl ¹ Yc ^{1,48}	Cw ^{1,48} Pl ¹ Yc ^{1,48}					400	200	200	3	8	20	Pl Others	1.4 1.0
1050992	13		Cw ^{1,48} Yc ^{1,48}	Cw ^{1,48} Hw Yc ^{1,48} Ss		Ba Hm	Ba Hm Hw ^{1,70} Pl Ss ¹	Dr ^b	800	400	400	3	8	20	Ss Hw Others	2.0 1.8 1.0
1050993	14*		Ss	Ss		Cw Pl Hw	Cw ⁴⁸ Hw Pl		400	200	200	3	8	20	Ss Hw Pl Others	2.0 1.8 1.4 1.0

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1050994	15		Ss	Ss		Hw Cw	Cw ⁴⁸ Hw		900	500	400	3	8	20	Hw, Ss Cw	2.0 1.5
1050995	16*		Ss	Ss		Cw Hw Pl	Cw ⁴⁸ Hw Pl		400	200	200	3	8	20	Ss Hw Pl Cw	2.0 1.8 1.4 1.0
1050996	17		Ss	SsCw	Cw ⁴⁸ Hw	Hw Yc	Yc ⁴⁸	Dr ^b	900	500	400	3	8	20	Hw, Ss Cw, Yc	2.0 1.5
1050997	18*		Cw ^{1,48} Ss ¹	Cw ^{1,48} Ss ¹			Dr ^b	400	200	200	3	8	20	Ss Cw	2.0 1.5	
1050998	19*		Cw ^{1,48} Ss ¹	Cw ^{1,48} Ss ¹			Act ^b Dr ^b	400	200	200	3	8	20	Ss Cw	2.0 1.5	
CWHvm1																
1050999	01		Ba ²⁶ Cw	Hw ⁷⁰ Ba ²⁶ Cw	Ss ^{7,26,35,56}	Ss ³⁵		Dr ^b	900	500	400	6	11	20	Hw, Ss Cw Ba	2.0 1.5 1.4
1051000	02*		Pl	Pl Cw Hw	Cw Fd ²² Hw				400	200	200	3	8	20	Hw, Pl Cw	1.4 1.0
1051001	03		Cw Hw	Cw Hw	Fd ²² Pl	Pl		Dr ^b	800	400	400	6	11	20	Hw, Pl Others	1.4 1.0
1051002	04		Ba Cw	Hw ⁷⁰ Ba Cw Ss ³⁵	Hw ⁷⁰			Dr ^b	900	500	400	3	8	20	Hw, Ss Cw Ba	2.0 1.5 1.4

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051003	05		Ba Cw	Hw ⁷⁰ Ba Cw Ss ³⁵	Hw ⁷⁰ Ss ³⁵			Act ^b Dr ^b	900	500	400	3	8	20	Hw, Ss Cw Ba	2.0 1.5 1.4
1051004	06		Ba ²⁶ Cw	Hw ⁷⁰ Ba ²⁶ Cw Ss ³⁵	Hw ⁷⁰ Ss ^{7,26,35}	Yc	Yc	Dr ^b	900	500	400	6	11	20	Hw, Ss Cw, Yc Ba	2.0 1.5 1.4
1051005	08		Ba Cw	Hw ⁷⁰ Ba Cw Ss ³⁵	Hw ^{2,70} Ss ³⁵			Act ^a Dr ^a	900	500	400	3	8	20	Hw, Ss Cw Others	2.0 1.5 1.4
1051006	CWHvm1-08 ^d Ba Ss - Devils Club Wildlife Stk Std ^d	Ba Cw	Hw ^{2,70} Ba Cw Ss ³⁵	Hw ^{2,70} Ss ³⁵	Act ^{a,c} Dr ^{a,c}		Act ^{a,c} Dr ^a	600		400	3	8	20	Hw, Ss Cw Others	2.0 1.5 1.4	
1051007	09		Ba Cw	Ba Cw Hw Ss ³⁵	Hw Ss ³⁵			Act ^a Dr ^a	900	500	400	3	8	20	Hw, Ss Cw Others	2.0 1.5 1.4
1051008	CWHvm1-09 ^d Ss – Salmon-berry Wildlife Stk Std ^d	Ba Cw	Ba Cw Hw Ss ³⁵	Hw Ss ³⁵	Act ^{a,c} Dr ^{a,c}		Act ^{a,c} Dr ^a	600		400	3	8	20	Hw, Ss Cw Others	2.0 1.5 1.4	
1051009	10			Cw ¹ Ss ^{1,35} Ba	Ba ¹ Cw ¹ Ss ^{1,35}			Act ^a Dr ^a	900	500	400	3	8	20	Ss Cw Others	2.0 1.5 1.4
1051010	CWHvm1-10 ^d Act - Red-osier dogwood Wildlife Stk Std ^d			Cw ¹ Ss ^{1,35} Ba ¹	Ba ¹ Cw ¹ Ss ^{1,35}	Act ^{a,c} Dr ^{a,c}		Act ^{a,c} Dr ^a	500		200	3	8	20	Ss Cw Others	2.0 1.5 1.4
-	11		-	no conifers		-		Act ^b Dr ^b	-	-	-	-	-	-	-	-

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051011	12		Cw ¹ Hw ¹ Yc ¹	Cw ¹ Hw ¹ Yc ¹	Pl ¹	Pl	Hm ¹		800	400	400	3	8	20	Hw Pl Others	1.4 1.0
1051013	13*		Cw ¹ Pl ¹ Yc ¹	Cw ¹ Pl ¹ Yc ¹		Hw	Hw ¹		400	200	200	3	8	20	Hw Pl Others	1.4 1.0
1051014	14		Cw ¹	Cw ¹		Hw Yc Ba Ss ³⁵	Ba ¹ Hw ¹ Pl ¹ Ss ^{1,35} Yc ¹	Act ^b Dr ^b	800	400	400	3	8	20	Hw, Ss Others	1.4 1.0
1051015	CWHvm1-14 ^d CwSs - Skunk cabbage Wildlife Stk Std ^d		Cw ¹	Cw ¹ Yc Hw Pl Ba Ss ³⁵		Act ^{a,c} Dr ^{a,c}	Ba ¹ Hw ¹ Pl ¹ Ss ^{1,35} Yc ¹	Act ^{b,c} Dr ^b	400		200	3	8	20	Hw, Ss Others	1.4 1.0
CWHvm2																
1051016	01		Ba	Hw ⁷⁰ Ba Cw ¹⁴ Yc	Cw ¹⁴ Hw Ss ⁷ Yc	Hm Ss	Hm ¹³ ,		900	500	400	6	11	20	Hw, Ss Cw, Yc Ba Hm	2.0 1.5 1.4 1.0
1051017	02*		Pl	Pl Cw Yc	Cw Hw Yc	Hw	Hm ¹³		400	200	200	3	8	20	Hw Pl Others	1.8 1.4 1.0
1051018	03		Cw ¹⁴ Hw	Cw ¹⁴ Hw	Pl Yc ¹³	Yc Hm	Hm ¹³		800	400	400	6	11	20	Hw Pl Others	1.8 1.4 1.0
1051019	05		Ba Cw ¹⁴	Hw ⁷⁰ Ba Cw ¹⁴ Yc ¹³	Hw Ss Yc ¹³	Hm Ss	Hm ¹³		900	500	400	3	8	20	Hw, Ss Cw, Yc Ba Hm	2.0 1.5 1.4 1.0

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide									Free Growing Guide			
			Species					Stocking(i) (well-spaced/ha)			Regen Delay (Max yrs)	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051020	06		Ba Cw ¹⁴	Hw ⁷⁰ Ba Cw ¹⁴ Yc	Hw Ss ⁷ Yc	Hm Ss	Hm ¹³		900	500	400	6	11	20	Hw, Ss 2.0 Cw, Yc 1.5 Ba 1.4 Hm 1.0
1051021	08		Ba Cw ¹⁴	Hw ⁷⁰ Ba Cw ¹⁴ Yc	Hw ² Ss ³⁵ Yc	Hm Ss ³⁵	Hm ¹³		900	500	400	3	8	20	Hw, Ss 2.0 Cw, Yc 1.5 Ba 1.4 Hm 1.0
1051022	CWHvm2-08 ^d Ba Ss - Devils Club Wildlife Stk Std ^d		Ba Cw ¹⁴	Hw Ba Cw ¹⁴ Ss ³⁵	Hw ² Ss ³⁵ Yc	Hm	Hm ¹³		600		400	3	8	20	Hw Ss 2.0 Cw 1.5 Ba 1.4 Hm 1.0
1051023	09		Cw ¹ Hw ¹ Yc ¹	Cw ¹ Hw ¹ Yc ¹	Hm ¹	Hm ¹ Pl ¹	Pl ¹		800	400	400	3	8	20	Hw 1.8 Pl 1.4 Cw Yc 1.0 Hm 0.8
1051024	10*		Pl ¹ Yc ¹	Pl ¹ Yc ¹	Hm	Hm			400	200	200	3	8	20	Pl 1.4 Yc 1.0 Hm 0.8
1051025	11		Cw ¹ Yc ¹	Cw ¹ Yc ¹		Hm ¹ Hw ¹ Ss ¹	Ba Hm ¹ Hw ¹ Ss ¹		800	400	400	3	8	20	Hw 1.8 Ss 1.4 Cw Yc Hm 1.0
1051026	CWHvm2-11 ^d CwSs - Skunk cabbage Wildlife Stk Std ^d		Cw ¹ Yc ¹	Cw ¹ Yc ¹ Ba Hm ¹ Hw ¹ Ss ¹			Ba Hm ¹ Hw ¹ Ss ^{1,35}		400		200	3	8	20	Hw 1.8 Ss 1.4 Others 1.0

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	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
CWHwm																
1051028	01		Hw Ss	Ba ^{16,50} Hw Ss	Ba ^{16,50} Cw ¹⁶ Hm ^{12,13}	Cw Yc ¹³ Hm ¹³	Yc ^{12,13}	Dr ^b	900	500	400	6	11	20	Hw Ss Hw Cw Yc Hm Dr	2.0 1.4 1.0
1051029	02		Hw Pl	Cw ^{16,50} Hw Pl	Cw ^{16,50} Hm ^{12,13}	Hm ¹³	Ss	Dr ^b	900	500	400	6	11	20	Hw Pl Cw Hm Dr	2.0 1.4 1.0
1051030	03		Ss	Ba ^{16,50} Ss ⁵⁶ Hw	Ba ¹⁶ Cw ¹⁶ Hw	Cw Yc ¹³	Yc ^{12,13}	Act ^b Dr ^b	900	500	400	3	8	20	Hw, Ss Others	2.0 1.4
1051031	04		Ss	Ss ⁵⁶ Hw	Ba ¹⁶ Cw ¹⁶ Hw	Ba Cw Yc ¹³	Yc ^{12,13}	Act ^b Dr ^a	900	500	400	3	8	20	Hw, Ss Others	2.0 1.4
1051032	05		Ss	Ba ^{16,50} Ss Hw	Ba ^{16,50} Cw ¹⁶ Hw	Cw		Act ^a Dr ^a	900	500	400	3	8	20	Hw, Ss Others	2.0 1.4
1051033	06			Ba ^{1,16,50} Ss ¹ Cw ¹	Ba ^{1,16,50} Cw ^{1,16} Ss ¹			Act ^a Dr ^a	900	500	400	3	8	20	Ss Others	2.0 1.4
1051034	8*		Hw ¹	Cw ^{1,16} Pl ¹ Yc ¹ Hw ¹	Cw ^{1,16} Pl ¹ Yc ¹ Hm ^{12,13}	Hm ¹³		Act ^b Dr ^b	900	500	400	6	11	20	Hw Pl Hm Others	2.0 1.0 1.4
1051035	09		Ss ¹	Cw ^{1,16,50} Ss ^{1,56}	Cw Hw ¹ Yc ¹	Hw ¹ Ss ¹ Hm	Hm	Act ^b Dr ^b	800	400	400	3	8	20	Hw, Ss Others	1.4 1.0
1051036	10*		Pl ¹ Yc ¹	Pl ¹ Yc ¹	Cw ^{1,16}	Cw ¹ Hw	Hw		400	200	200	3	8	20	Pl Others	1.4 1.0

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
CWHws1																
1051037	01		Ba	Hw Ba Cw Sxs ³⁵	Cw Hw Pl Sxs ³⁵	Pl		Dr ^b	900	500	400	6	11	20	Hw Pl Sxs Others	2.0 1.4
1051038	02*		Pl	Pl Hw	Hw	Cw	Cw		600	400	400	6	11	20	Hw Pl Others	1.4 1.0
1051039	03		Hw Pl	Hw Pl	Cw	Cw Ba	Ba		900	500	400	6	11	20	Hw Pl Others	2.0 1.4
1051040	04		Ba Cw	Hw Ba Cw Sxs ³⁵	Hw ² Sxs ³⁵		Pl	Act ^b Dr ^b	900	500	400	3	8	20	Hw Pl Sxs Others	2.0 1.4
1051041	05		Ba Cw	Hw Ba Cw Sxs ³⁵	Hw Sxs ^{7,35}			Dr ^b	900	500	400	6	11	20	Hw Sxs Others	2.0 1.4
1051042	06		Ba Cw	Hw Ba Cw Sxs ³⁵	Hw ² Sxs ³⁵			Act ^b Dr ^a	900	500	400	3	8	20	Hw Sxs Others	2.0 1.4
1051043	CWHws1-06 ^d Ba Ss - Devils Club Wildlife Stk Std ^d	Ba Cw	Ba Cw	Hw Ba Cw Sxs ³⁵	Hw ² Sxs ³⁵	Act ^{b,c} Dr ^{a,c}		Act ^{b,c} Dr ^a	600		400	3	8	20	Hw Sxs Others	2.0 1.4
1051044	07		Ba Cw	Hw ⁷⁰ Ba Cw Sxs ³⁵	Sxs ³⁵		Hw	Act ^a Dr ^a	900	500	400	3	8	20	Hw Sxs Others	2.0 1.4
1051045	CWHws1-07 ^d Ss - Salmon-berry Wildlife Stk Std ^d	Ba Cw	Ba Cw	Hw ⁷⁰ Ba Cw Sxs ³⁵	Sxs ³⁵	Act ^{a,c} Dr ^{a,c}	Hw	Act ^{a,c} Dr ^a	500		200	3	8	20	Hw Sxs Others	2.0 1.4
1051046	08			Ba ¹ Cw ¹ Sxs ³⁵ Act ^a	Ba ¹ Cw ¹ Sxs ^{1,35}	Hw	Hw ¹	Act ^a Dr ^a	900	500	400	3	8	20	Sxs Others	2.0 1.4

I.D. #	Biogeoclimatic		Regeneration Guide									Free Growing Guide				
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051047	CWHws1-08 ^d	Act - Red-osier dogwood Wildlife Stk Std ^d		Ba ¹ Cw ¹ Sxs ³⁵	Ba ¹ Cw ¹ Sxs ^{1,35}	Act ^{a,c} Dr ^{a,c}	Hw ¹	Act ^{a,c} Dr ^a	500	200	3	8	20	Sxs Others	2.0 1.4	
-	09*		no conifers	no conifers		-		Act ^b Dr ^b	-	-	-	-	-	-	-	-
1051048	10*		Pl ¹	Pl ¹ Hw Cw			Cw ¹ Hw		400	200	200	3	8	20	Hw, Pl Cw	1.4 1.0
1051049	11		Cw ¹	Cw ¹ Sxs ^{1,35}	Sxs ^{1,35}	Hw ¹ Ba ¹	Ba ¹ Hw ¹	Act ^b Dr ^b	800	400	400	3	8	20	Hw, Sxs Others	1.4 1.0
1051050	CWHws1-11 ^d	CwSs - Skunk cabbage Wildlife Stk Std ^d	Cw ¹	Cw ¹ Sxs ^{1,35}	Sxs ^{1,35}	Hw ¹ Ba ¹ Act ^{b,c} Dr ^{b,c}	Ba ¹ Hw ¹	Act ^{b,c} Dr ^b	400	200	3	8	20	Hw, Sxs Others	1.4 1.0	
CWHws2																
1051051	01		Ba	Sxs Hw Ba Cw ¹⁴	Bl ¹² Cw Hw Pl Sxs	Pl Bl	Hm ¹³	Dr ^b	900	500	400	6	11	20	Pl Hw Others	2.0 1.3 1.0
1051052	02*		Pl	Pl Hw		Cw Hm ¹³	Cw Hw Hm ¹³		600	400	400	6	11	20	Pl Others	1.4 0.8
1051053	03		Hw Pl	Hw Pl	Cw	Cw Hm ¹³ Ba ⁵⁰	Ba	Dr ^b	900	500	400	6	11	20	Pl Hw Others	2.0 1.3 1.0

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051054	04		Ba	Sxs Hw Ba Cw ¹⁴	Bl ¹² Cw ¹⁴ Hw ² Sxs	Hm ¹³ Bl	Hm ¹³	Act ^b Dr ^b	900	500	400	3	8	20	Hw Others	1.3 1.0
1051055	05		Ba	Sxs Hw Ba Cw ¹⁴	Bl ¹² Cw ¹⁴ Hw Sxs ⁷	Bl		Dr ^b	900	500	400	6	11	20	Hw Others	1.3 1.0
1051056	06		Ba	Sxs Hw Ba Cw ¹⁴	Bl ¹² Cw ¹⁴ Hw ² Sxs	Bl ¹²		Act ^b Dr ^b	900	500	400	3	8	20	Hw Others	1.3 1.0
1051057	CWHws2-06 ^d Ba Ss - Devils Club Wildlife Stk Std ^d	Ba	Ba	Sxs Hw Ba Cw ¹⁴ Act ^{b,c}	Bl ¹² Cw ¹⁴ Hw ² Sxs	Bl ¹² Dr ^{b,c}		Act ^{b,c} Dr ^b	600		400	3	8	20	Hw Others	1.3 1.0
1051058	07		Ba	Sxs Hw Ba Cw	Bl ¹² Cw Sxs	Bl ¹²	Hw	Act ^a Dr ^a	900	500	400	3	8	20	Hw Others	1.3 1.0
1051059	CWHws2-07 ^d Ss – Salmon-berry Wildlife Stk Std ^d	Ba	Ba	Sxs Hw Ba Cw Act ^{a,c}	Ba ¹² Cw Sxs	Bl ¹² Dr ^{a,c}	Hw	Act ^{a,c} Dr ^a	500		200	3	8	20	Hw Others	1.3 1.0
1051060	08			Sxs Hw Ba ¹ Cw ¹ Act ^a	Ba ¹ Bl ¹² Cw ¹ Sxs ¹	Bl ¹²	Hw ¹	Act ^a Dr ^a	900	500	400	3	8	20	All	1.0
1051061	CWHws2-08 ^d Act - Red-osier dogwood Wildlife Stk Std ^d			Sxs Hw Ba ¹ Cw ¹	Ba ¹ Bl ¹² Cw ¹ Sxs ¹	Bl ¹² Act ^{a,c} Dr ^{a,c}	Hw ¹	Act ^{a,c} Dr ^a	500		200	3	8	20	All	1.0
-	09		no conifers	no conifers		-		Act ^b Dr ^b	-	-	-	-	-	-	-	-
1051062	10*		Pl ¹	Pl ¹		Cw Hw Hm	Cw ¹ Hw ³⁰ Hm ³⁰		400	200	200	3	8	20	Pl Others	1.4 0.8

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051063	11		Cw ¹	Cw ¹ Sxs ¹	Sxs ¹	Ba ¹ Hw ¹	Ba ¹ Hw ¹	Act ^b Dr ^b	800	400	400	3	8	20	All	0.8
1051064	CWHws2-11 ^d CwSs - Skunk cabbage Wildlife Stk Std ^d		Cw ¹	Cw ¹ Sxs ¹ Ba ¹ Hw ¹	Sxs ¹	Act ^{b,c} Dr ^{b,c}	Ba ¹ Hw ¹	Act ^{b,c} Dr ^b	400		200	3	8	20	All	0.8
ESSFmc																
1051065	01		Bl Se	Bl Sx	Pl ³⁴	Pl ³⁴			1200	700	600	7	15	20	Pl Others	1.6 0.8
1051066	02*		Pl	Pl	Bl Se	Bl Sx			1000	500	400	7	15	20	Pl Others	1.2 0.6
1051067	03*		Pl	Pl	Bl Se	Bl Sx			1000	500	400	7	15	20	Pl Others	1.2 0.6
1051068	04		Pl Bl	Pl Bl Sx	Se				1200	700	600	7	15	20	Pl Others	1.6 0.8
1051069	05		Bl Se	Bl Sx	Pl ³⁴	Pl ³⁴			1200	700	600	4	12	20	Pl Others	1.6 0.8
1051070	06		Bl Se	Bl Sx	Pl ³⁴	Pl ³⁴			1200	700	600	4	12	20	Pl Others	1.6 0.8
1051071	07		Bl Se ³²	Bl Sx			Pl ³⁴		1200	700	600	4	12	20	Pl Others	1.6 0.8
1051072	08*		Bl Se ³²	Bl Sx		All			1000	500	400	4	12	20	All	0.6
1051073	09		Bl ¹ Se ^{1,32}	Bl ¹ Sx ¹		All			1000	500	400	4	12	20	All	0.6
1051074	10		Bl ¹ Se ^{1,32}	Bl ¹ Sx ¹		All			1000	500	400	4	12	20	All	0.6

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	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
ESSFmk																
1051075	01		Bl Se	Bl Se	Hm Pl ³⁴	Pl Hm Ba ⁵⁰	Ba ¹⁷		1200	700	600	7	15	20	Pl Others	1.6 0.8
1051076	02*		Pa Pl	Pa Pl	Bl Hm Se	Bl Hm Se			1000	500	400	7	15	20	Pl Others	1.2 0.6
1051077	03*		Pa Pl	Pa Pl	Bl Hm Se	Bl Hm Se Ba ⁵⁰	Ba ¹⁷		1200	700	600	7	15	20	Pl Others	1.6 0.8
1051078	04		Bl Se	Bl Se	Hm Pl ³⁴	Hm Pl ³⁴ Ba ⁵⁰	Ba ¹⁷		1200	700	600	4	12	20	Pl Others	1.6 0.8
1051079	05		Bl Se ³²	Bl Se	Hm	Hm Ba ⁵⁰	Ba ¹⁷ Pl ³⁴		1200	700	600	4	12	20	Pl Others	1.6 0.8
1051080	06		Bl ¹ Se ^{1,32}	Bl ¹ Se ¹		Hm Ba ⁵⁰	Ba Hm		1000	500	400	4	12	20	All	0.8
1051081	07		Bl ¹ Se ^{1,32}	Bl ¹ Se ¹		Hm Ba ⁵⁰	Ba		1000	500	400	4	12	20	All	0.8
ESSFmv3																
1051082	01		Bl Se	Bl Se	Pl ³⁴	Pl ³⁴			1200	700	600	4	12	20	Pl Others	1.6 0.8
1051083	02*		Pl ³⁴	Pl ³⁴	Bl ²⁸ Se ²⁸	Bl Se			1000	500	400	4	12	20	Pl Others	1.2 0.6
1051084	03		Bl Se	Bl Se	Pl ³⁴	Pl ³⁴ Sb	Sb		1000	500	400	4	12	20	Pl Others	1.2 0.6
1051085	04		Bl Se	Bl Se			Pl ³⁴		1200	700	600	4	12	20	Pl Others	1.6 0.8

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	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051086	05		Bl Se	Bl Se			Pl ³⁴		1200	700	600	4	12	20	Pl Others	1.6 0.8
1051087	06		Bl Sx	Bl Sx	Pl ³⁴	Pl ³⁴			1200	700	600	7	12	15	Pl Others	1.6 0.8
1051088	07		Bl ¹ Se ^{1,32}	Bl ¹ Se ¹	Pl ^{1,34}	Pl ^{1,34}			1000	500	400	4	12	20	Pl Others	1.2 0.6
ESSFwv																
1051089	01		Bl Se	Bl Se	Pl ³⁴	Pl ³⁴ Hm Hw	Hm Hw		1200	700	600	7	15	20	Pl Others	1.6 0.8
1051090	02*		Pl	Pl	Bl Hm Se	Bl Hm Se			1000	500	400	7	15	20	Pl Others	1.2 0.6
1051091	03*		Pl	Pl	Bl Hm Se	Bl Hm Se Hw	Hw		1200	700	600	7	15	20	Pl Others	1.6 0.8
1051092	04		Pl	Pl Bl	Bl Hm Se	Hm Se			1200	700	600	7	15	20	Pl Others	1.6 0.8
1051093	05		Bl Se	Bl Se	Pl ³⁴	Pl ³⁴ Hm Hw	Hm Hw		1200	700	600	4	12	20	Pl Others	1.6 0.8
1051094	06		Bl Se ³²	Bl Se		Hm Hw	Hm Hw Pl ³⁴		1200	700	600	4	12	20	Pl Others	1.6 0.8
1051095	07*		Bl Se ³²	Bl Se		Hm Hw	Hm Hw		1000	500	400	4	12	20	All	0.6
1051096	08		Bl ¹ Se ^{1,32}	Bl ¹ Se ¹					1000	500	400	4	12	20	All	0.6
1051097	09		Bl ¹ Se ^{1,32}	Bl ¹ Se ¹					1000	500	400	4	12	20	All	0.6

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	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
ICHmc1																
1051099	01		Hw ³² Sx ³⁵	Bl ²⁹ Hw ³² Sx ³⁵ Ba ⁵⁰	Pl Bl ²⁹	Pl	Ba ⁵⁰	At ^b Ep ^b	1200	700	600	4	9	20	Pl Others	2.0 1.0
1062370	01		Hw ³² Sx ³⁵	Bl ²⁹ Hw ³² Sx ³⁵ Ba ⁵⁰	Pl Bl ²⁹	Pl Cw ⁷¹	Ba ⁵⁰ Cw ⁷¹	At ^b Ep ^b	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051100	02*		Pl	Pl		Bl Hw	Bl Hw ³²	At ^b	1000	500	400	7	12	20	Pl Others	1.4 0.8
1062371	02*		Pl	Pl		Bl Hw Cw ⁷¹	Bl Hw ³² Cw ⁷¹	At ^b	1000	500	400	7	12	20	Pl Others	1.4 0.8
1051101	03		Hw ³² Sx ³⁵	Bl ²⁹ Ba ⁵⁰ Hw ³² Sx ³⁵	Bl ²⁹	Pl	Pl Ba ⁵⁰	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1062372	03		Hw ³² Sx ³⁵	Bl ²⁹ Ba ⁵⁰ Hw ³² Sx ³⁵	Bl ²⁹	Pl Cw ⁷¹	Pl Ba ⁵⁰ Cw ⁷¹	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051102	04		Sx ³⁵	Bl ²⁹ Ba ⁵⁰ Sx ³⁵ Hw ³²	Bl ²⁹ Hw ³²	Pl	Pl Ba ⁵⁰	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1062373	04		Sx ³⁵	Bl ²⁹ Ba ⁵⁰ Sx ³⁵ Hw ³²	Bl ²⁹ Hw ³²	Pl Cw ⁷¹	Pl Ba ⁵⁰ Cw ⁷¹	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051103	05		Sx ^{1,35}	Ba ⁵⁰ Sx ^{1,35} Bl ^{1,29}	Bl ^{1,29}		Pl ¹ Ba ⁵⁰	Act ^a At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1062374	05		Sx ^{1,35}	Ba ⁵⁰ Sx ^{1,35} Bl ^{1,29}	Bl ^{1,29}	Cw ⁷¹	Pl ¹ Ba ⁵⁰ Cw ⁷¹	Act ^a At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051104	06		Sx ^{1,35}	Ba ⁵⁰ Sx ^{1,35} Bl ^{1,29}	Bl ^{1,29}	Hw ¹	Hw ^{1,32} Ba ⁵⁰	Act ^b	1000	500	400	4	9	20	All	0.8
1062375	06		Sx ^{1,35}	Ba ⁵⁰ Sx ^{1,35} Bl ^{1,29}	Bl ^{1,29}	Hw ¹ Cw ⁷¹	Hw ^{1,32} Ba ⁵⁰	Act ^b	1000	500	400	4	9	20	All	0.8

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	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
							Cw ⁷¹									
ICHmc1a																
1051105	01		Hw ³² Pl Sx ³⁵	Ba Hw Sx ³⁵	Ba ⁷	Pl Bl ⁵⁰ Cw ^{50,23}	Bl ⁵⁰ Cw ^{23,32}	At ^b Ep ^b	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051106	02		Ba Sx ³⁵	Ba Hw Sx ³⁵	Hw ³² Pl	Pl Bl ⁵⁰ Cw ^{50,23}	Bl ⁵⁰ Cw ^{23,32}	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051107	03		Ba Sx ³⁵	Ba Hw Sx ³⁵	Hw ³² Pl	Pl Bl ⁵⁰ Cw ^{50,23}	Bl ⁵⁰ Cw ^{23,32}		1200	700	600	4	9	20	Pl Others	2.0 1.0
ICHmc2																
1051108	01		Hw ³² Pl Sx ³⁵	Hw Sx ³⁵ Cw	Bl ²⁹ Cw ³²	Pl Bl Ba ⁵⁰	Ba ⁵⁰	At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051109	02*		Pl	Pl		Bl Hw Ba ⁵⁰ Cw ⁷¹	Bl Hw Ba ⁵⁰ Cw ⁷¹	At ^b	1000	500	400	7	12	20	Pl Others	1.4 0.8
1051110	03		Cw ³² Hw ³² Sx ³⁵	Cw Hw Sx ³⁵ Bl	Bl ²⁹ Pl	Pl Ba ⁵⁰	Ba ^{13,17}	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051111	04		Cw ³² Sx ³⁵	Cw Hw Sx ³⁵ Bl	Bl ²⁹ Hw ³² Pl	Pl Ba ⁵⁰	Ba ^{13,17}	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051112	05		Cw ^{1,32} Sx ^{1,35}	Cw ¹ Sx ^{1,35} Hw ¹ Bl ¹	Bl ^{1,29} Hw ^{1,32} Pl ¹	Pl ¹ Ba ⁵⁰	Ba ^{13,17}	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051113	06		Cw ^{1,32} Sx ^{1,35}	Cw Sx ³⁵ Bl ¹	Bl ^{1,29} Pl ¹	Pl Hw ¹ Ba ⁵⁰	Ba ⁵⁰ Hw ^{1,32}	Act ^a At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051114	07		Sx ¹	Ba ^{1,50} Bl ¹ Sx ^{1,35} Cw ¹	Ba ⁵⁰ Bl ^{1,29} Cw ^{1,32}	Hw ¹	Hw ^{1,32} , Pl ¹	Act ^b At ^b Ep ^b	1000	500	400	4	9	20	Pl Others	1.4 0.8

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051115	08*		Sb ¹ Sx ^{1,32,35}	Sb ¹ Sx ^{1,35}	Pl ¹	Pl ¹			400	200	200	4	9	20	Pl Others	1.4 0.8
1051116	51		Pl	Pl Hw Sx ³⁵ Bl	Hw Bl ^{28,29} Sx ²⁸	Ba ⁵⁰	Ba ⁵⁰	At ^b Ep ^b	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051117	52		Sx ³⁵	Sx ³⁵ Cw Bl Hw	Pl Bl ²⁹ Cw ³² Hw ³²	Pl Ba ⁵⁰	Ba ⁵⁰	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051118	53		Sx ³⁵	Sx ³⁵ Cw Bl Hw	Pl Bl ²⁹ Cw ³² Hw ³²	Pl Ba ⁵⁰	Ba ⁵⁰	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051119	54		Cw ³² Sx ³⁵	Sx ³⁵ Cw Bl Hw	Pl Bl ²⁹ Hw ³²	Pl Ba ⁵⁰	Ba ^{13,17}	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
ICHvc																
1051120	01		Bl	Bl Hw Sx ³⁵	Hw ³² Sx ^{34,35}	Hm ⁵⁰	Hm ⁵⁰	Act ^b At ^b Ep ^b	1200	700	600	4	9	20	All	1.0
1051121	02		Bl Hw ³²	Bl Hw Sx ³⁵	Pl ^{3,9} Sx ^{34,35}	Hm ⁵⁰ Pl ⁹	Hm ⁵⁰	At ^b Ep ^b	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051122	03		Bl	Bl Sx ³⁵	Sx ^{34,35}	Hw ⁵⁰	Hw	Act ^b At ^b Ep ^b	1200	700	600	4	9	20	All	1.0
1051123	04		Bl ¹	Bl ¹ Sx ^{1,35}	Sx ^{1,34,35}			Act ^a At ^b Ep ^b	1200	700	600	4	9	20	All	1.0
1051124	05		Bl ¹	Bl ¹ Sx ^{1,35}	Sx ^{1,32,34,35}			Act ^a At ^a	1200	700	600	4	9	20	All	1.0
1051125	06		Bl ¹	Bl ¹ Sx ^{1,35}	Sx ^{1,32,34,35}			Act ^b At ^b Ep ^b	1000	500	400	4	9	20	All	0.8
1051126	51*			Bl Sx ³⁵	Bl Sx ^{34,35}				1000	500	400	3	8	20	All	0.8

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay (Max yrs)	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)		Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051127	52*			Bl Sx ³⁵			Bl Sx ^{34,35}		400	200	200	3	8	20	All	0.8
ICHwc																
1051128	01		Bl Hw ³² Sx	Bl Hw Sx	Pl	Pl		Act ^b At ^b Ep ^b	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051129	02*		Pl	Pl		Bl Hw	Bl Hw	At ^b	1000	500	400	7	12	20	Pl Others	1.4 0.8
1051130	03		Bl Hw ³² Pl Sx ²⁸	Bl Hw Sx		Pl		At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051131	04		Bl Sx	Bl Sx Hw	Hw ³²		Pl	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051132	05		Bl Sx	Bl Sx Hw	Hw ³²		Pl	Act ^b At ^a Ep ^a	1200	700	600	4	9	20	All	1.0
1051133	06		Bl ¹ Sx ¹	Bl ¹ Sx ¹		Hw ¹	Hw ^{1,32} Pl ¹	Act ^a At ^a Ep ^a	1200	700	600	4	9	20	All	1.0
1051134	07		Sx ¹	Sx ¹ Bl ¹	Bl ¹	Hw ¹	Pl ¹ Hw ^{1,32}		1000	500	400	4	9	20	Pl Others	1.4 0.8
1051135	08		Bl ¹ Sx ¹	Bl ¹ Sx ¹		Hw ¹	Hw ^{1,32}	Act ^b At ^b Ep ^b	1000	500	400	4	9	20	All	0.8
1051136	51			Bl Sx	Bl Sx				1000	500	400	4	9	20	All	0.8
1051137	52			Bl ¹ Sx ¹			Bl ¹ Sx ¹		400	200	200	3	8	20	All	0.8
MHmm1 Refer to approved FSP document for any variances.																
1051287	01		Ba Hm Yc	Ba Hm Yc		Hw ¹⁴	Hw ¹⁴		900	500	400	7	15	20	All	1.0
1051288	02*		Hm Yc	Hm Yc Ba	Ba				800	400	400	4	12	20	All	0.8

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay (Max yrs)	Minimum Height(ii)		Minimum Height(ii)	
			Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)		Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051289	03		Ba Hm Yc	Ba Hm Yc		Hw ¹⁴	Hw ¹⁴		900	500	400	4	12	20	All	1.0
1051290	04		Ba Hm Yc	Ba Hm Yc		Hw ¹⁴	Hw ¹⁴		900	500	400	7	15	20	All	1.0
1051291	05		Ba Yc	Ba Yc Hm	Hm	Hw ¹⁴	Hw ¹⁴		900	500	400	4	12	20	All	1.0
1051292	06*		Hm ¹ Yc ¹	Hm ¹ Yc ¹		Ba ¹	Ba ¹		800	400	400	7	15	20	All	0.8
1051293	07*		Ba ¹ Yc ¹	Hm ¹ Ba ¹ Yc ¹	Hm ¹				900	500	400	4	12	20	All	1.0
1051294	08*		Hm ¹ Yc ¹	Hm ¹ Yc ¹		Ba ¹ Hw ^{1,14}	Ba ¹ Hw ^{1,14}		400	200	200	4	12	20	All	0.8
1051295	09*		Yc ¹	Yc ¹ Hm ¹	Hm ¹	Ba ¹ Hw ^{1,14}	Ba ¹ Hw ^{1,14}		800	400	400	4	12	20	All	0.8
MHmm2																
1051138	01		Ba Hm	Ba Hm Yc	Yc ^{17,50}	Bl ⁵⁰ Hw	Bl ⁵⁰ Hw ^{14,44}		900	500	400	7	15	20	All	1.0
1051139	02*		Hm	Ba Hm Yc	Ba Yc ^{17,50}	Bl ⁵⁰ Hw ^{14,50}	Bl ⁵⁰ Hw ^{14,44}		800	400	400	4	12	20	All	0.8
1051140	03		Ba Hm	Ba Hm Yc	Yc ^{17,50}	Bl ⁵⁰ Hw ^{14,50}	Bl ⁵⁰ Hw ^{14,44}		900	500	400	4	12	20	All	1.0
1051141	04		Ba Hm	Ba Hm Yc	Yc ^{17,50}	Bl ⁵⁰ Hw ^{14,50}	Bl ⁵⁰ Hw ^{14,44}		900	500	400	7	15	20	All	1.0
1051142	05		Ba	Ba Hm Yc	Hm Yc ^{17,50}	Bl ⁵⁰ Hw ^{14,50}	Bl ⁵⁰ Hw ^{14,44}		900	500	400	4	12	20	All	1.0
1051143	06*		Hm ¹	Hm ¹ Yc ¹	Yc ^{17,50}	Ba ¹	Ba ¹		800	400	400	7	15	20	All	1.0
1051144	07*		Ba ¹	Ba ¹ Hm ¹	Hm ¹	Hw ^{1,14,50}	Hw ^{1,14,44}		900	500	400	4	12	20	All	1.0

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
				Yc ¹	Yc ^{1,17,50}											
1051145	08*		Hm ¹	Hm ¹ Yc ¹	Yc ^{1,17,50}	Ba ¹ Bl ^{1,50} Hw ^{1,14,50}	Ba ¹ Bl ^{1,50} Hw ^{1,14}		400	200	200	4	12	20	All	0.8
1051146	09*		Hm ¹	Hm ¹ Yc ¹	Yc ^{1,17,50}	Ba ¹ Hw ^{1,14,50}	Ba ¹ Hw ^{1,14}		800	400	400	4	12	20	All	0.8
MHwh1																
1051147	01		Ba Hm Yc	Ba Hw ^{14,50} Hm Yc Ss ^{14,50}	Cw ¹⁴ Hw ¹⁴ Ss ¹⁴	Cw ¹⁴			900	500	400	7	15	20	All	1.0
1051148	02*		Hm Yc	Hm Yc	Cw ¹⁴	Cw ¹⁴ Ba	Ba		400	200	200	4	12	20	All	0.8
1051149	03		Hm Yc	Hm Yc Ss ^{14,50}	Cw ¹⁴ Ss ¹⁴	Cw ¹⁴ Hw ^{14,50}	Hw ¹⁴		900	500	400	7	15	20	All	1.0
1051150	04		Hm Yc	Ba Hw ^{14,50} Hm Yc Cw ¹⁴	Ba Cw ¹⁴ Hw ¹⁴	Cw ¹⁴			900	500	400	7	15	20	All	1.0
1051151	05		Ba Yc	Ba Hw ^{14,50} Hm Yc Ss ^{14,50}	Cw ¹⁴ Hm Hw ¹⁴ Ss ¹⁴	Cw ¹⁴	Pl		900	500	400	4	12	20	All	1.0
1051152	06*		Hm ¹ Yc ¹	Hm ¹ Yc ¹		Ba ¹ Hw ^{1,50} Ss ^{1,50}	Ba ¹ Hw ^{1,14} Ss ^{1,14}		800	400	400	7	15	20	All	0.8
1051153	07*		Ba ¹ Yc ¹	Ba ¹ Yc ¹ Hm ¹ Ss ¹⁴	Cw ¹⁴ Hm ¹ Ss ¹⁴	Cw ¹⁴ Hw ^{14,50}	Hw ^{1,14}		900	500	400	4	12	20	All	1.0

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051154	08*		Hm ¹ Yc ¹	Hm ¹ Yc ¹		Ba ¹ Hw ^{1,14,50}	Ba ¹ Hw ^{1,14}		400	200	200	4	12	20	All	0.8
1051155	09*		Yc ¹	Yc ¹ Cw ^{1,14}	Cw ^{1,14}	Ba Hm ¹ Hw ^{1,14,50} Ss ^{1,14,50}	Ba Hm ¹ Hw ^{1,14} Ss ^{1,14}		800	500	400	4	12	20	All	0.8
SBPSmc																
1051156	01		Pl	Pl		Sb Sx	Sb Sx	At ^b	1200	700	600	7	12	20	Pl Others	1.6 0.8
1051157	02*		Pl	Pl		Sb Sx	Sb Sx	At ^b	1000	500	400	7	12	20	Pl Others	1.2 0.6
1051158	03		Pl	Pl		Sb Sx	Sb Sx	At ^b	1200	700	600	7	12	20	Pl Others	1.6 0.8
1051159	04*		Pl Sb Sx ³²	Pl Sb Sx				At ^b	1000	500	400	4	9	20	Pl Others	1.2 0.6
1051160	05		Sx ^{1,32}	Sx ¹	Pl ¹	Pl ¹ Sb	Sb	Act ^b	1000	500	400	4	9	20	Pl Others	1.2 0.6
1051161	06		Sx ^{1,32}	Sx ¹	Pl ¹	Pl ¹ Sb	Sb	Act ^b	1000	500	400	4	9	20	Pl Others	1.2 0.6
1051162	07*		Pl ¹ Sb ¹ Sx ^{1,32}	Pl ¹ Sb ¹ Sx ¹					400	200	200	4	9	20	Pl Others	1.2 0.6
SBSdk																
1051163	01		Pl Sx	Pl Sx	Fd ^{9,18}	Fd ⁹		At ^a Ep ^a	1200	700	600	7	12	20	Pl Fd Others	2.0 1.4 1.0

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	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051164	02*		Pl	Pl Sx	Sx ²⁸			At ^b Ep ^b	1000	500	400	7	12	20	Pl Others	1.4 0.8
1051165	03*		Pl	Pl Sx	Sb ²⁸ Sx ²⁸	Sb		At ^b	1200	700	600	7	12	20	Pl Others	2.0 1.0
1051166	04		Fd Pl	Fd Pl Sx	Sx ²⁸			At ^b Ep ^a	1200	700	600	7	12	20	Pl Fd Others	2.0 1.4 1.0
1051167	05		Pl Sx ²⁸	Pl Sx	Fd ^{9,18}	Fd ⁹		At ^a Ep ^a	1200	700	600	7	12	20	Pl Fd Others	2.0 1.4 1.0
1051168	06		Pl Sx	Pl Sx			Fd ^{9,18}	Act ^a At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051169	07		Sx ^{1,32}	Sx ¹	Pl ¹	Pl ¹		Act ^b At ^b Ep ^b	1000	500	400	4	9	20	Pl Others	1.4 0.8
1051170	08		Sx ^{1,32}	Sx ^{1,32}			Pl ¹	Act ^a At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051171	09*		Pl ¹ Sb ¹	Pl ¹ Sb ¹		Sx ¹	Sx ¹		400	200	200	4	9	20	Pl Others	1.4 0.8
1051172	10*		Pl ¹ Sb ¹ Sx ^{1,32}	Pl ¹ Sb ¹ Sx ^{1,32}					400	200	200	4	9	20	Pl Others	1.4 0.8
SBSwk3																
1051173	01		Pl Sx	Pl Sx Bl	Bl ²⁹			Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051174	02		Pl	Pl		Bl Sx	Bl ²⁸ Sx ²⁸		1000	500	400	7	12	20	Pl Others	1.4 0.8

I.D. #	Biogeoclimatic		Regeneration Guide										Free Growing Guide			
	Ecosystem Classification		Species						Stocking(i) (well-spaced/ha)			Regen Delay	Minimum Height(ii)		Minimum Height(ii)	
	Subzone	Series	Primary ³⁵	Preferred (p)	Secondary ²⁸	Acceptable (a)	Tertiary ²⁸	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
1051175	03		Fd ¹⁶ Pl	Fd ¹⁶ Pl Sx	Sx ²⁸			At ^b Ep ^b	1200	700	600	7	12	20	Pl Fd Sx	2.0 1.4 1.0
1051176	04		Pl Sx	Pl Sx Bl	Bl			At ^a Ep ^a	1200	700	600	7	12	20	Pl Others	2.0 1.0
1051177	05		Pl	Pl		Sb Sx	Sb Sx	At ^b	1200	700	600	7	12	20	Pl Others	2.0 1.0
1051178	06		Pl Sx	Pl Sx Bl	Bl ²⁹			Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051179	07		Sx ³²	Sx Bl	Bl ²⁹ Pl	Pl		Act ^b At ^a Ep ^a	1200	700	600	4	9	20	Pl Others	2.0 1.0
1051180	08		Sx ^{1,32}	Sx ¹ Bl ¹	Bl ^{1,29} Pl ¹	Pl ¹		Act ^a At ^a	1000	500	400	4	9	20	Pl Others	1.4 0.8

Table 16. Footnotes for Stocking Standards

Reference	Description
Footnotes related to “Broadleaf” species acceptability in Table 15. Even-Aged and Wildlife Habitat Stocking Standards	
a	Species constitutes a productive, reliable, and feasible regeneration option, and subject to section 6.0, 6.3 Species Acceptability - General, 6.8 Wildlife Habitat Stocking Standards, 6.15 Hardwoods, and 6.16 Riparian Management Considerations of this FSP, may be considered as “preferred” for regeneration in managed stands.
b	Species is limited in productivity, reliability and/or feasibility, and subject to sections 6.3 Species Acceptability - General, 6.8 Wildlife Habitat Stocking Standards, 6.15 Hardwoods, and 6.16 Riparian Management Considerations, of this FSP, may only be considered as “acceptable” for regeneration in managed stands.
c	Species constitutes a seral stage value consistent with the wildlife and biodiversity objectives respecting maintenance of deciduous species in seral stands and potentially at the expense of coniferous timber volume. For the purpose of a result in this FSP, apart from footnotes (a) and (b) above, coniferous stocking at the stand level must always meet the minimum stocking level regardless of the spatial arrangement of the coniferous and deciduous components within the regenerated stand.
Advisory** footnotes to “Preferred” or “Acceptable” species in Table 15. Even-Aged and Wildlife Habitat Stocking Standards	
1	elevated microsites are preferred
2	suitable on thick forest floors
3	restricted to coarse-textured soils
7	restricted to nutrient-medium sites
9	restricted to southerly aspects
12	suitable on cold air drainage sites
13	restricted to upper elevations of Biogeoclimatic unit
14	restricted to lower elevations of Biogeoclimatic unit
16	restricted to southern portion of Biogeoclimatic unit in region
17	restricted to western portion of Biogeoclimatic unit in region
18	restricted to eastern portion of biogeoclimatic unit in region
22	restricted to southern Gardner Canal-Kitlope area
23	restricted to trial use
24	suitable (as a major species) in wetter portion of Biogeoclimatic unit
25	suitable on sites lacking salal
26	suitable minor species on salal-dominated sites
27	partial canopy cover required for successful establishment
28	limited by moisture deficit
29	risk of heavy browsing by moose
30	recommended to avoid logging - replaced outdated original Footnote 30.
31	use of resistant stock mitigates risk of white pine blister rust; do not use non-resistant stock for reforestation – See BC Journal of Ecosystems and Management 10(1): 97-100.
32	limited by growing-season frosts
34	risk of snow damage

Reference	Description
35	risk of weevil damage – resistant stock mitigates risk of spruce weevil damage; Apply Sxs and Ss preferred and acceptability rules as per section 6.4 Species Acceptability – Spruce leader weevil. Reference the Ss Weevil Decision Tool at: (http://www.for.gov.bc.ca/hre/forgen/projects/spruceweevil) and BC Journal of Ecosystems and Management 7(3): 45-49. See section 6.4 for conditions.
36	suitable major species on salal-dominated sites
44	suitable in areas with stronger maritime influence
47	risk of balsam wooly adelgid – applies to all Abies species in subzones within the regulated quarantine area (http://www.al.gov.bc.ca/cropprot/balsamwa.htm)
48	risk of heavy browsing by deer
50	restricted to those sites and site series where the species occurs as a major species (> 20 % of dominant and co-dominant sph) in the pre-harvest natural stand and on transitional site series as an acceptable species.
56	Kalum forest district - spruce content restricted to < 35% well-spaced and free growing trees on a standards unit due to leader weevil.
70	limit Hw to a maximum of 50% of well-spaced stocking at Free Growing declaration
71	Where pre-harvest stands have minor components of western red cedar, cedar will be planted in those areas to meet cultural objectives in amounts up to a maximum of 10% of the target stocking level.
Foot notes related to wildlife habitat stocking standards in Table 15. Even-Aged and Wildlife Habitat Stocking Standards	
d	<p>Site series specific wildlife habitat stocking standards for Grizzly Bear and Moose:</p> <ul style="list-style-type: none"> - See Table 15. Even-Aged and Wildlife Habitat Stocking Standards for species acceptability target and minimum stocking standards; - See Table 17. Stocking Standards for Identified high value Grizzly bear forested habitat site series in the Coastal Western Hemlock Zone of the Kalum TSA for identified sites and maximum stocking (stems/ha); and, - See Section 6.8, Wildlife Habitat Stocking Standards for additional conditions
Biogeoclimatic Ecosystem Classification (BEC) Subzones in the Kalum and Nass TSAs	
CWHwm	Coastal Western Hemlock zone, wet maritime subzone
CWHws2	Coastal Western Hemlock zone, wet submaritime subzone – montane variant
ESSFwv	Engelmann Spruce – Subalpine Fir zone, wet very cold subzone
ICHmc1	Interior Cedar – Hemlock zone, moist cold subzone, Nass variant
ICHmc1a	Interior Cedar – Hemlock zone, moist cold subzone – Nass variant, Amabilis Fir phase
ICHvc	Interior Cedar – Hemlock zone, very wet cold subzone
MHmm2	Mountain Hemlock zone, moist maritime subzone – Leeward variant
SBSmc2	Sub-Boreal Spruce zone, moist cold subzone – Babine variant
Conifer Tree Species	
"Ba" means amabilis fir	"Se" means Engelmann spruce
"Bl" means sub-alpine fir	"Sb" means black spruce
"Cw" means western red cedar	"Ss" means Sitka spruce
"Hm" means mountain hemlock	"Sx" or "Sxs" means hybrid or interior spruce
"Hw" means western hemlock	"Yc" means yellow cedar
"Pl" means lodgepole pine	

Reference	Description
Broadleaf Tree Species	
“Act” means black cottonwood	“Dr” means red alder
“At” means trembling aspen	“Ep” means paper birch

**These footnotes are provided as advice to a prescribing Forest Professional, and are not to be interpreted as a measurable, verifiable, or enforceable part of the Stocking Standards.

Table 17. Stocking Standards for Identified high value Grizzly bear forested habitat site series in the Coastal Western Hemlock Zone of the Kalum TSA

Site Association	Subzone Variants of the CWH Zone	Free Growing Stocking Standards (Stems per ha)		
		Target	Minimum	Maximum
BaSs-Devil's club	vm1 and vm2	600	400	660
BaCw-Devil's club	ws1 and ws2	600	400	660
Cwss-Skunk cabbage	vm1 and vm2; ws1 and ws2	400	200	440
Ss-salmonberry and Act-Red-osier dogwood	vm1 and vm2; ws1 and ws2	500	200	550

Source: Kalum SRMP – 2006, Table 8.

Table 18. Uneven-aged Stocking Standards³⁶

Target From Standards ³¹ Stems/ha	Layer ³⁷	STOCKING (well spaced stems/ha)		
		Target (p&a) ³⁸ Preferred and Acceptable	Minimum (p&a) ³¹ Preferred and Acceptable	Minimum (p) ³¹ Preferred
1200	1	600	300	250
	2	800	400	300
	3	1000	500	400
	4	1200	700	600
1000	1	400	200	200
	2	600	300	250
	3	800	400	300
	4	1000	500	400
900	1	400	200	200
	2	500	300	250
	3	700	400	300
	4	900	500	400
800	1	300	150	150
	2	400	200	200
	3	600	300	300
	4	800	400	400
600	1	300	150	150
	2	400	200	200
	3	500	300	300

³⁶ Regeneration Delay – the maximum regen delay for uneven-aged management is 7 years. Regen delay can be met immediately following harvest if the residual stand has no significant damage or pest problems and meets minimum stocking standards. If regeneration is achieved immediately following harvest, earliest Free-Growing date is 12 months after completion of harvest.

³⁷ Stand Layer Definitions for Uneven-aged stocking standards are as follows:

Layer 1 – Mature trees $\geq$ 12.5 cm dbh

Layer 2 – Pole trees 7.5 cm to 12.4 cm dbh

Layer 3 – Sapling trees $\geq$ 1.3 m height to 7.4 cm dbh

Layer 4 – Regeneration trees $<$ 1.3 m height

³⁸ Preferred and Acceptable species, and Stocking Standards (Target, Minimum Preferred and Acceptable and Minimums) from Table 15, Even-Aged and Wildlife Habitat Stocking Standards are specified by BEC Site Series.

	4	600	400	400
400	1	200	100	100
	2	300	125	125
	3	300	150	150
	4	400	200	200

APPENDIX II – FRPA SECTION 196 AREAS, ISSUED CUTTING PERMITS AND ROAD PERMITS

Blocks and roads that were previously approved under a Forest Development Plan and that continue as deemed approved within the Forest Stewardship Plan upon submission of the Plan are identified in Table 19.

Table 19. FPPR s.14(4) and FRPA s. 196 Declared Areas³⁹

FDU	Skeena Sawmills Block or Road Identity	Geographic Area	Mapsheet (1:20,000)	Plan Status
Nass South	Block 508-1	Meziadin	103P094	Block Declared 196(1)
Nass South	Block 508-2	Meziadin	103P094	Block Declared 196(1)
Nass South	Block 300-1A	Paw	103P085	Block Declared 196(1)
Nass South	Block 311-1	Little Paw	103P086	Block Declared 196(1)
Nass South	Block 311-2	Little Paw	103P086	Block Declared 196(1)
Nass South	Block 302-0	Little Paw	103P086	Block Declared 196(1)
Nass South	Block 302-4	Little Paw	103P086	Block Declared 196(1)
Nass South	Block 204-3	Niska Lakes	103P075	Block Declared 196(1)
Nass South	Block 213-1	Niska Lakes	103P075	Block Declared 196(1)
Nass South	Block 213-2	Niska Lakes	103P075	Block Declared 196(1)
Nass South	Block 203-1	Niska Lakes	103P075	Block Declared 196(1)
Nass South	Block 203-2	Niska Lakes	103P075	Block Declared 196(1)
Nass South	Block 203-2A	Niska Lakes	103P075	Block Declared 196(1)
Nass South	Block 203-4	Niska Lakes	103P075	Block Declared 196(1)
Nass South	Block 034-1	Taylor-Tchitin	103P045	Block Declared 196(1)
Nass South	Block 133-1	Taylor-Tchitin	103P055	Block Declared 196(1)
Nass South	Block 201-1A	Niska Lakes	103P075	Block Declared 14(4)
Nass South	Block 201-3B	Niska Lakes	103P075	Block Declared 14(4)
Nass South	Block 201-3C	Niska Lakes	103P075	Block Declared 14(4)
Nass South	Block 7-211-1B	Niska Lakes	103P075	Block Declared 14(4)
Kalum FDU	3-3-16	Chist	103I029	Block Declared 196(1)
Kalum FDU	3-3-18	Chist	103I039	Block Declared 196(1)
Kalum FDU	5-110-2	Bolton	103I018	Block Declared 196(1)

³⁹ This table lists blocks and roads that were previously approved and that have had all required assessments done as described in FRPA section 196(1) or FPPR s 14(4). Note that these blocks are deemed as approved within the FSP as soon as the FSP is submitted for approval.

FDU	Skeena Sawmills Block or Road Identity	Geographic Area	Mapsheet (1:20,000)	Plan Status
Kalum FDU	5-1150-8	Bolton	1031018	Block Declared 196(1)
Kalum FDU	5-1900-4	Upper Kitimat	1031020	Block Declared 196(1)
Kalum FDU	5-1900-2	Upper Kitimat	1031020	Block Declared 196(1)
Kalum FDU	5-1000-25	Upper Kitimat	1031020	Block Declared 196(1)
Kalum FDU	5-1000-28B	Upper Kitimat	1031020	Block Declared 196(1)
Kalum FDU	5-1000-29	Upper Kitimat	1031020	Block Declared 196(1)
Kalum FDU	25-2100-2	Gobeil Bay	103H087	Block Declared 196(1)
Kalum FDU	3-100-12	Chist	103I039	Block Declared 196(2)
Kalum FDU	3-3-15B	Chist	103I039	Block Declared 196(2)
Kalum FDU	3-3-20	Chist	103I039	Block Declared 196(2)
Kalum FDU	5-1000-12A	Upper Kitimat	103I029	Block Declared 196(2)
Kalum FDU	5-60-2	Upper Kitimat	103I029	Block Declared 196(2)
Kalum FDU	5-5-21A	Upper Kitimat	103I029	Block Declared 196(2)
Kalum FDU	5-300-4	Upper Kitimat	103I020	Block Declared 196(2)
Kalum FDU	5-5-39	Upper Kitimat	103I010	Block Declared 196(2)
Kalum FDU	5-5-31	Upper Kitimat	103I010	Block Declared 196(2)
Kalum FDU	5-500-10	Buell	103I020	Block Declared 196(2)
Kalum FDU	5-400-6	Hoult	103I020	Block Declared 196(2)
Kalum FDU	5-0-2	Bolton	103I028	Block Declared 196(2)
Kalum FDU	5-1110-2A	Bolton	103I028	Block Declared 196(2)
Kalum FDU	5-1155-1	Bolton	103I028	Block Declared 196(2)
Kalum FDU	5-0-6	Humpherries	103I028	Block Declared 196(2)
Kalum FDU	30-1000-4	Bish	103H097	Block Declared 196(2)
Kalum FDU	25-1000-2	Clio Bay	103H087	Block Declared 196(2)
Kalum FDU	25-2000-2	Clio Bay	103H087	Block Declared 196(2)
Kalum FDU	25-2000-4	Clio Bay	103H087	Block Declared 196(2)
Kalum FDU	3-510-2	Kwetz	103I039	Block Declared 14(4)
Kalum FDU	40-1000-6	Miskatla	103H086	Block Declared 14(4)
Kalum FDU	40-2100-2	Miskatla	103H086	Block Declared 14(4)
Kalum FDU	25-1-1	Clio Bay	103H087/097	Block Declared 14(4)
Kalum FDU	25-1-2	Clio Bay	103H087	Block Declared 14(4)
Kalum FDU	25-1-3	Clio Bay	103H087	Block Declared 14(4)
Kalum FDU	25-1-4	Clio Bay	103H087	Block Declared 14(4)
Kalum FDU	30-1000-8	Bish	103H097*	Block Declared 14(4)
Kalum FDU	30-1100-3	Bish	103H097*	Block Declared 14(4)
Kalum FDU	30-2000-2A	Bish	103H097*	Block Declared 14(4)
Kalum FDU	M-M-16A	Bish	103H097*	Block Declared 14(4)
Kalum FDU	M-M-18A	Bish	103H097*	Block Declared 14(4)
Kalum FDU	5-5-36	Upper Kitimat	103I020*	Block Declared 14(4)
Kalum FDU	5-5-34	Upper Kitimat	103I020	Block Declared 14(4)

* Completion of all assessments imminent. The expectation is that they will be complete prior to FSP submission.

Table 20. Approved Cutting Permits and Road Permits⁴⁰

Block or Road Identity	Approval Date	Landscape Unit
None		

⁴⁰ This table lists blocks and roads that were previously approved and where there have been no events as described in FRPA section 196(2). Note that these blocks are deemed as approved within the FSP as soon as the FSP is submitted for approval.

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APPENDIX III – KALUM SRMP MAPS AND TABLES

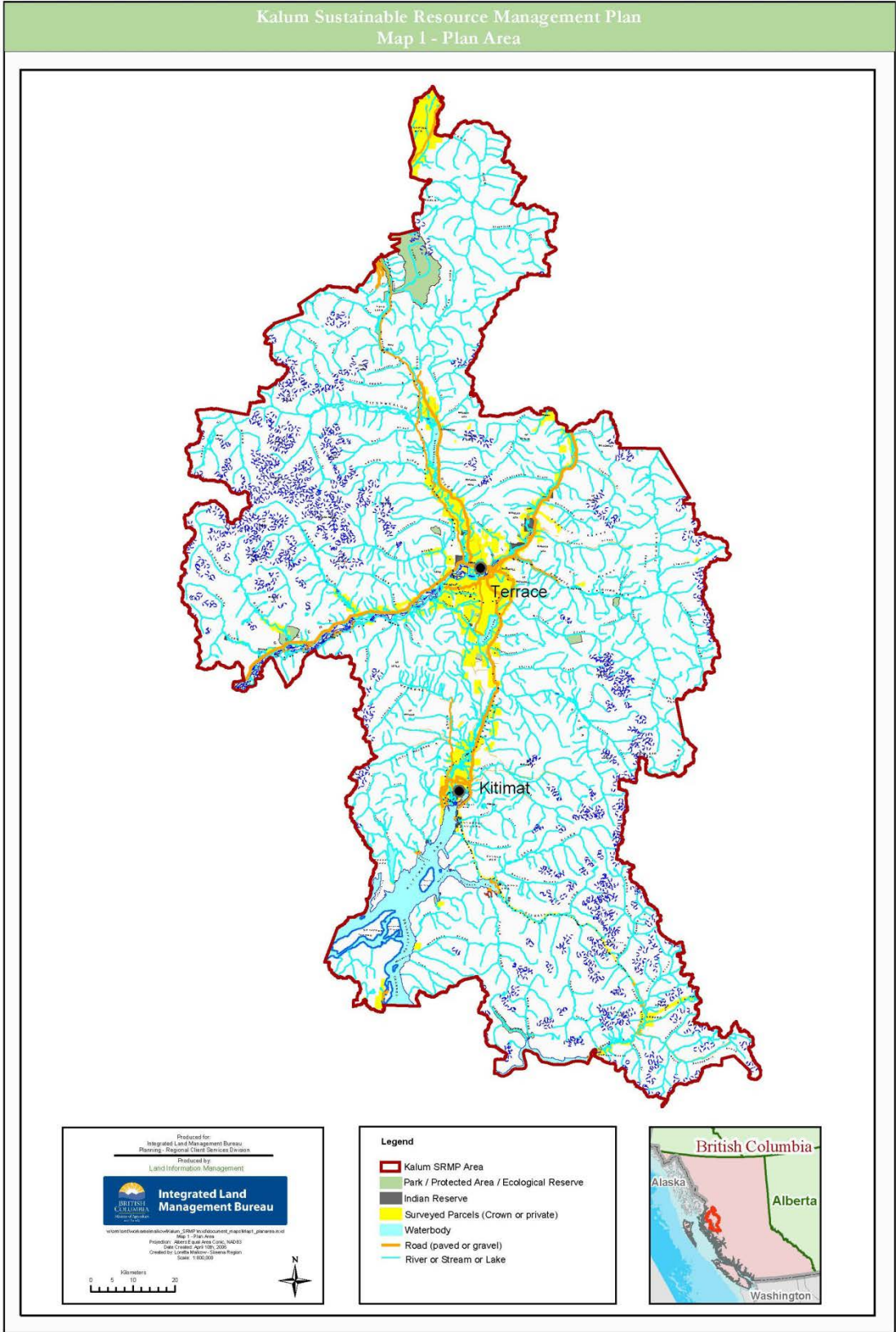


Figure 4. Kalum SRMP Map 1 - Plan Area

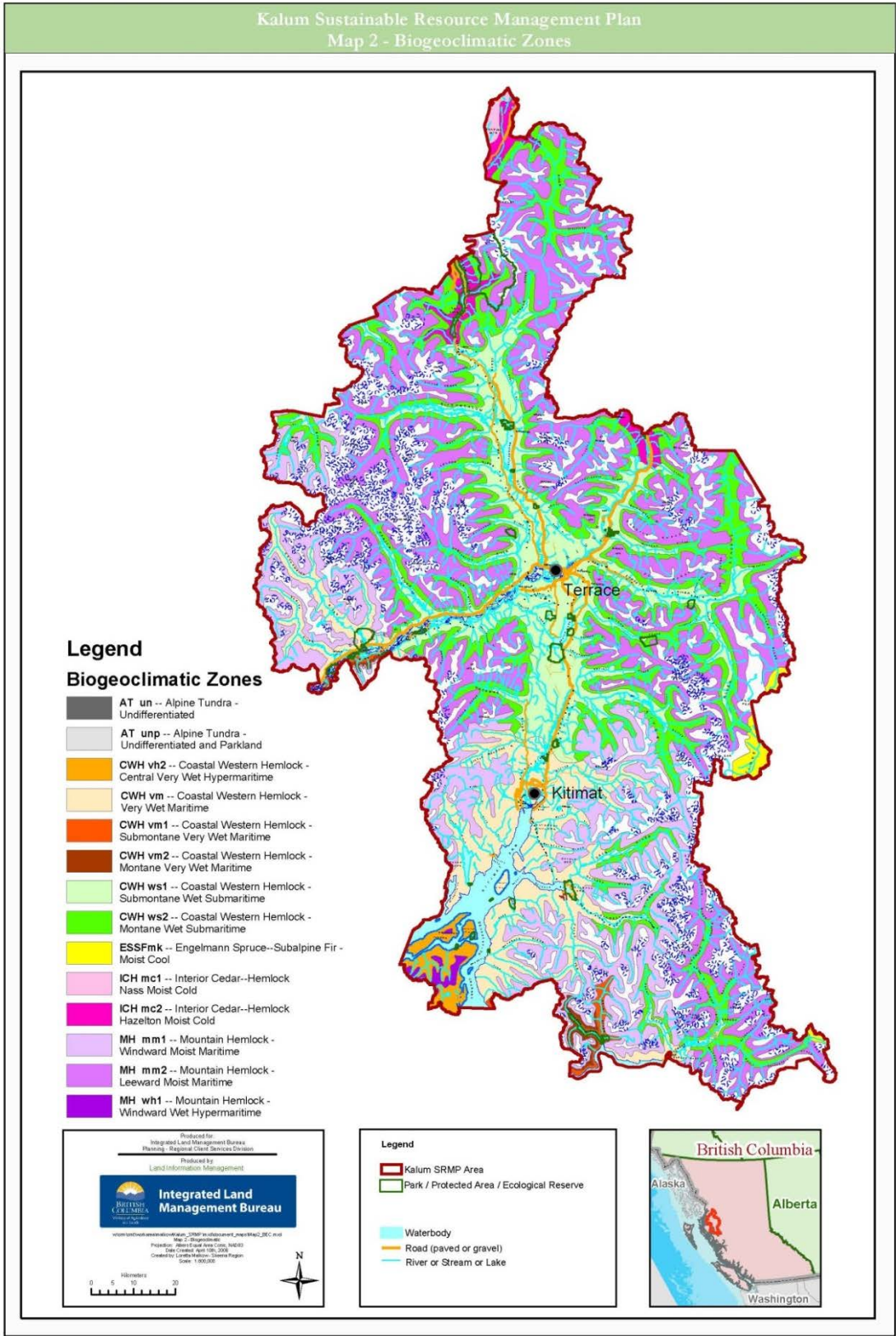


Figure 5. Kalum SRMP Map 2 – Biogeoclimatic Zones

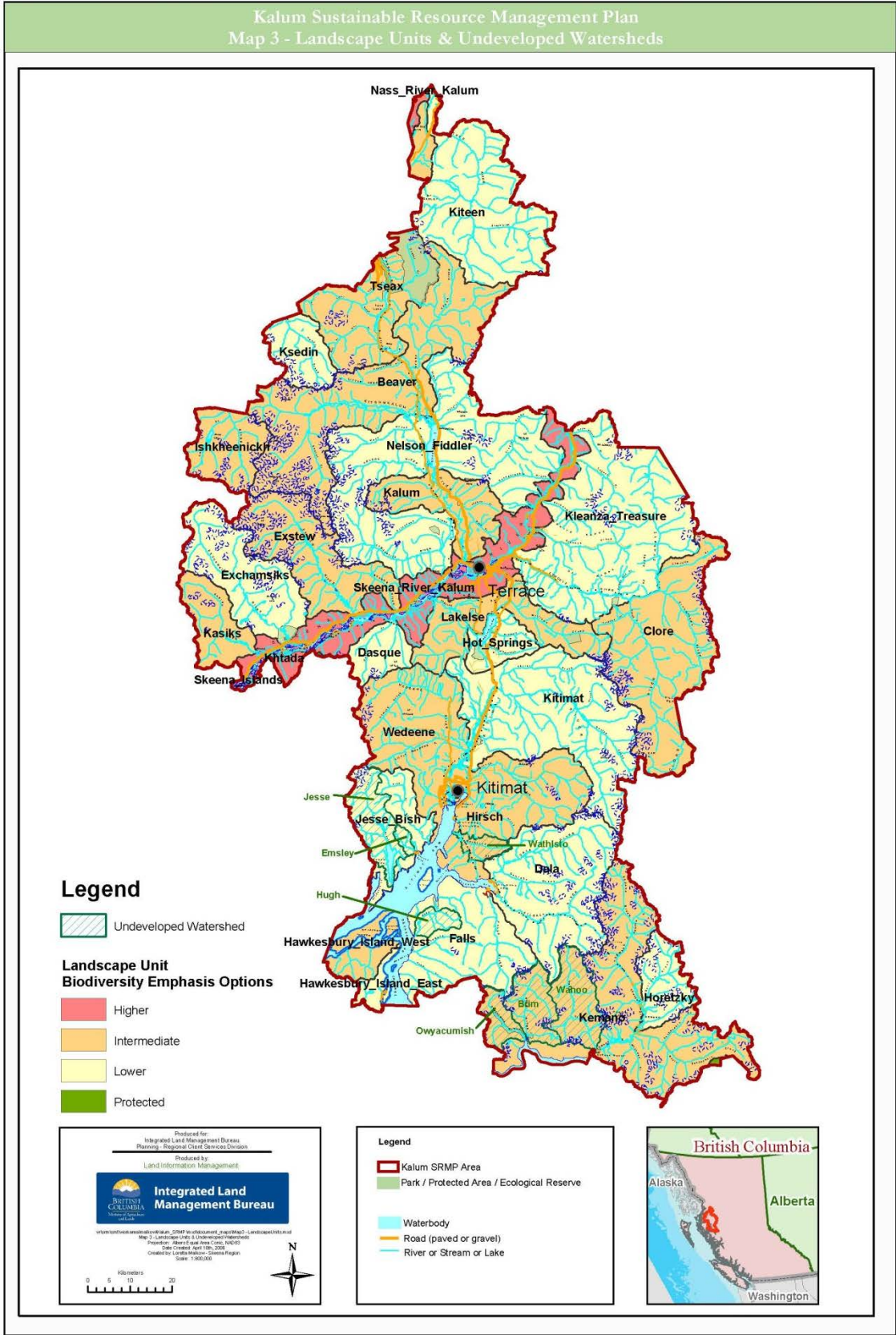


Figure 6. Kalum SRMP Map 3 - Landscape Units and Undeveloped Watersheds

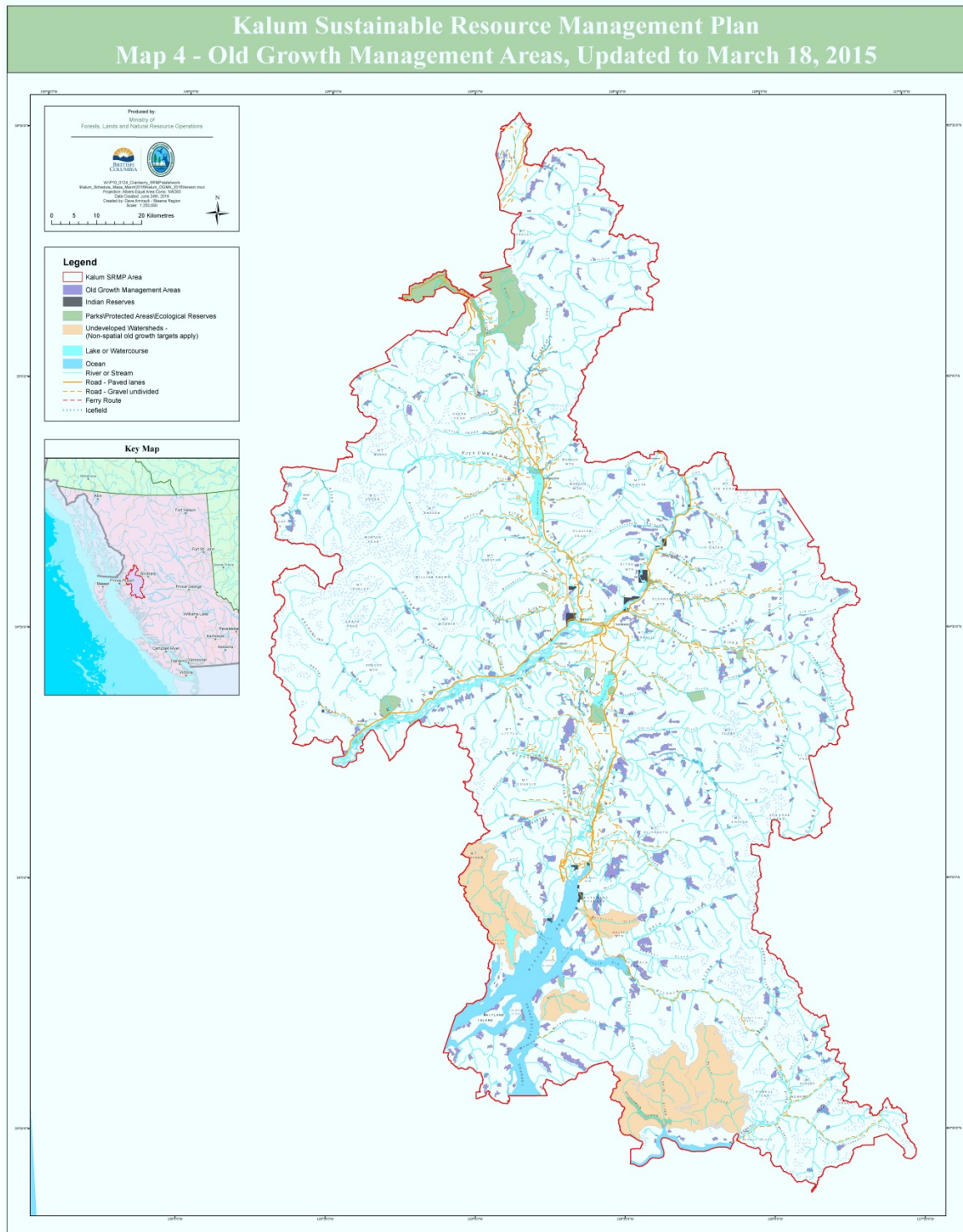


Figure 7. Kalum SRMP Map 4 – Old Growth Management Areas (amended March 18, 2015)

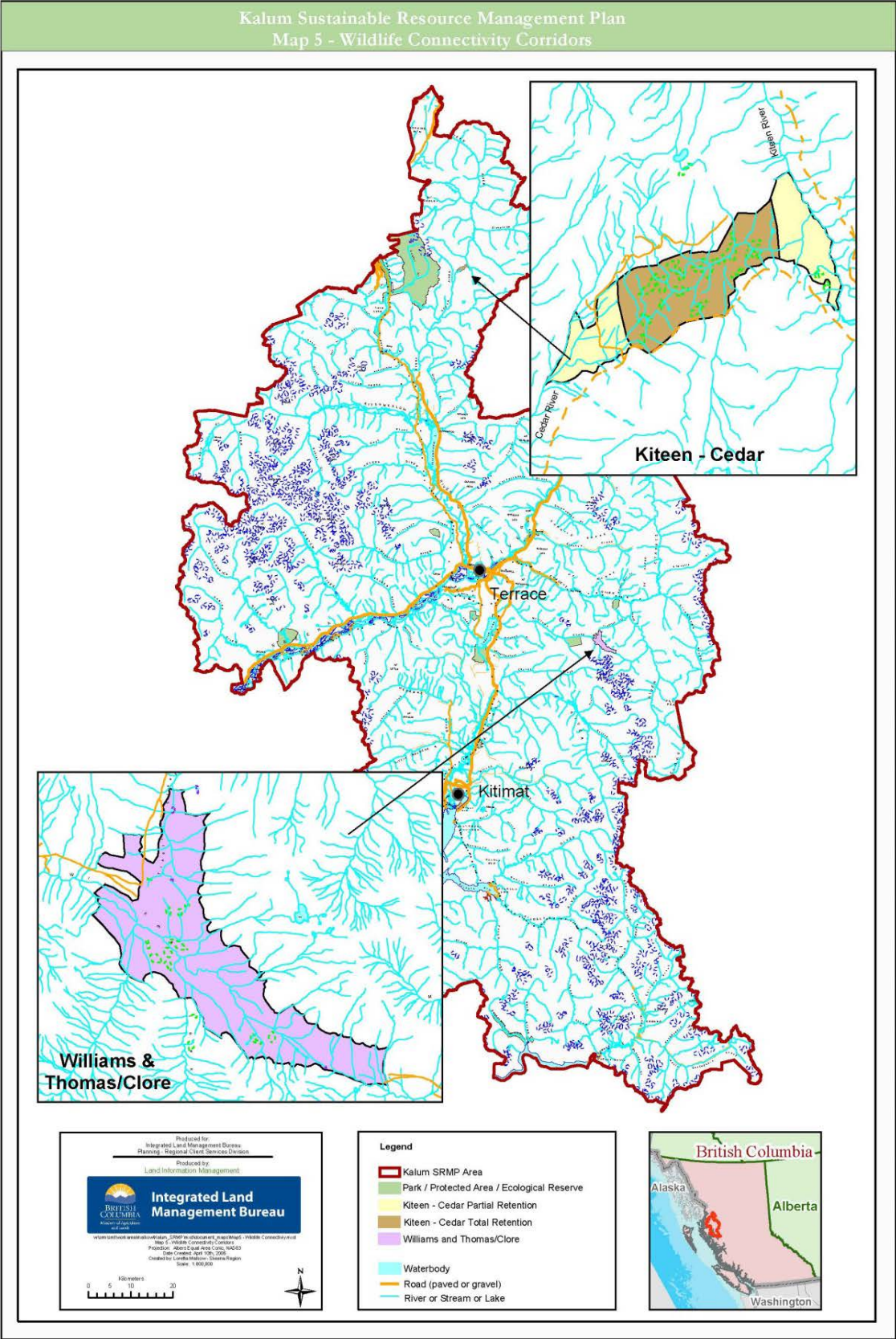


Figure 8. Kalum SRMP Map 5 – Wildlife Connectivity Corridors

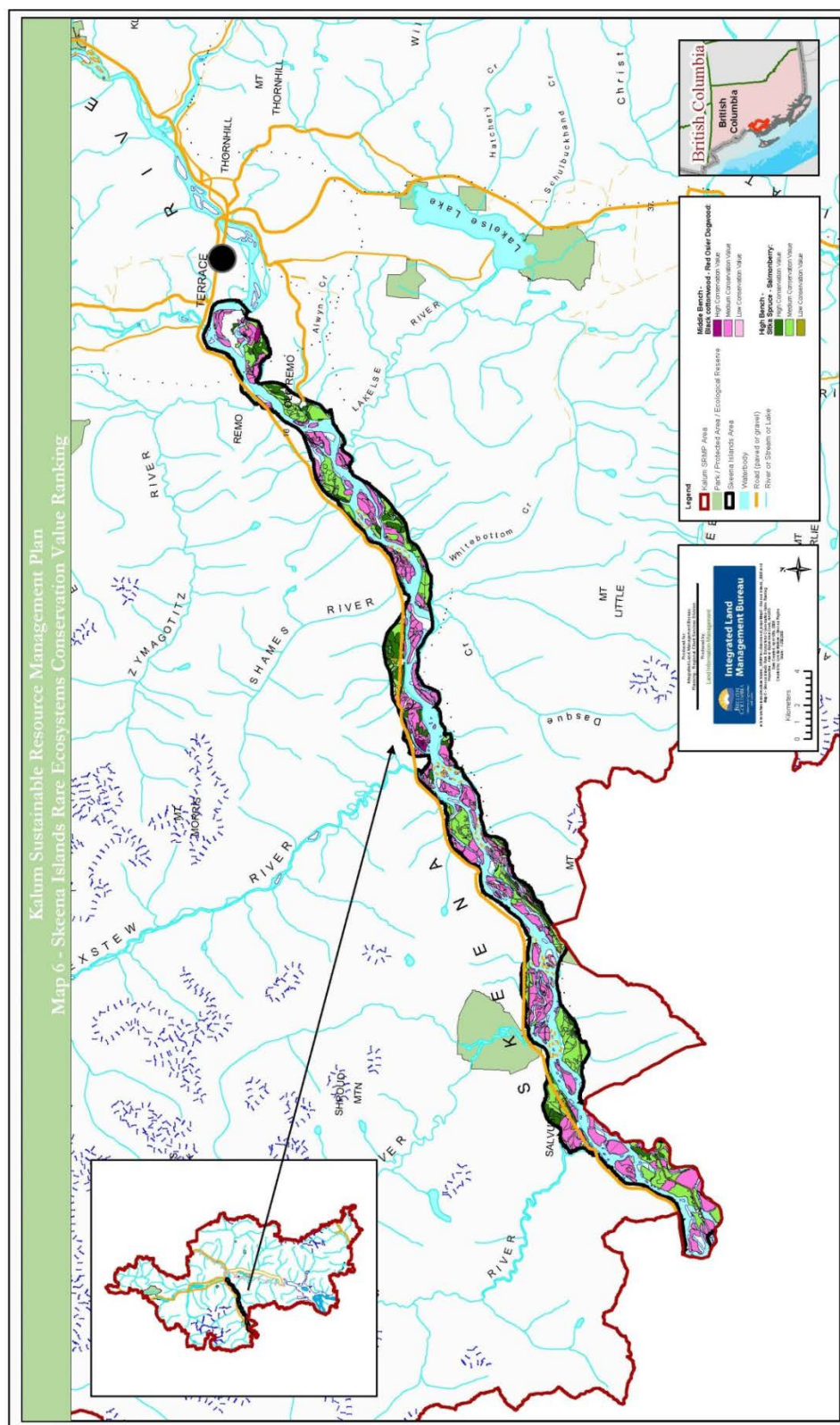


Figure 9. Kalum SRMP Map 6 - Skeena Islands Rare Ecosystems Conservation Value Ranking

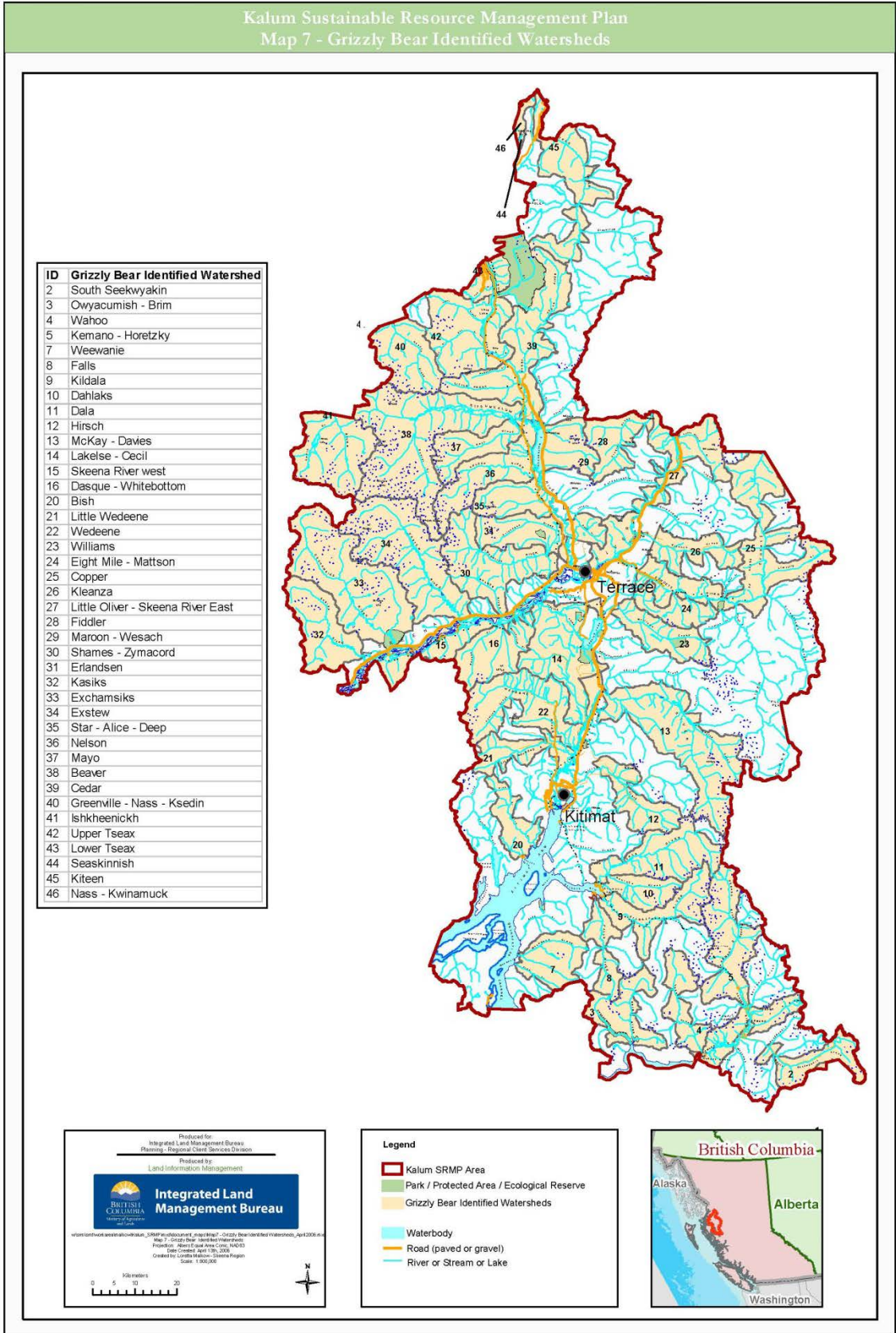


Figure 10. Kalum SRMP Map 7 – Grizzly Bear Identified Watersheds

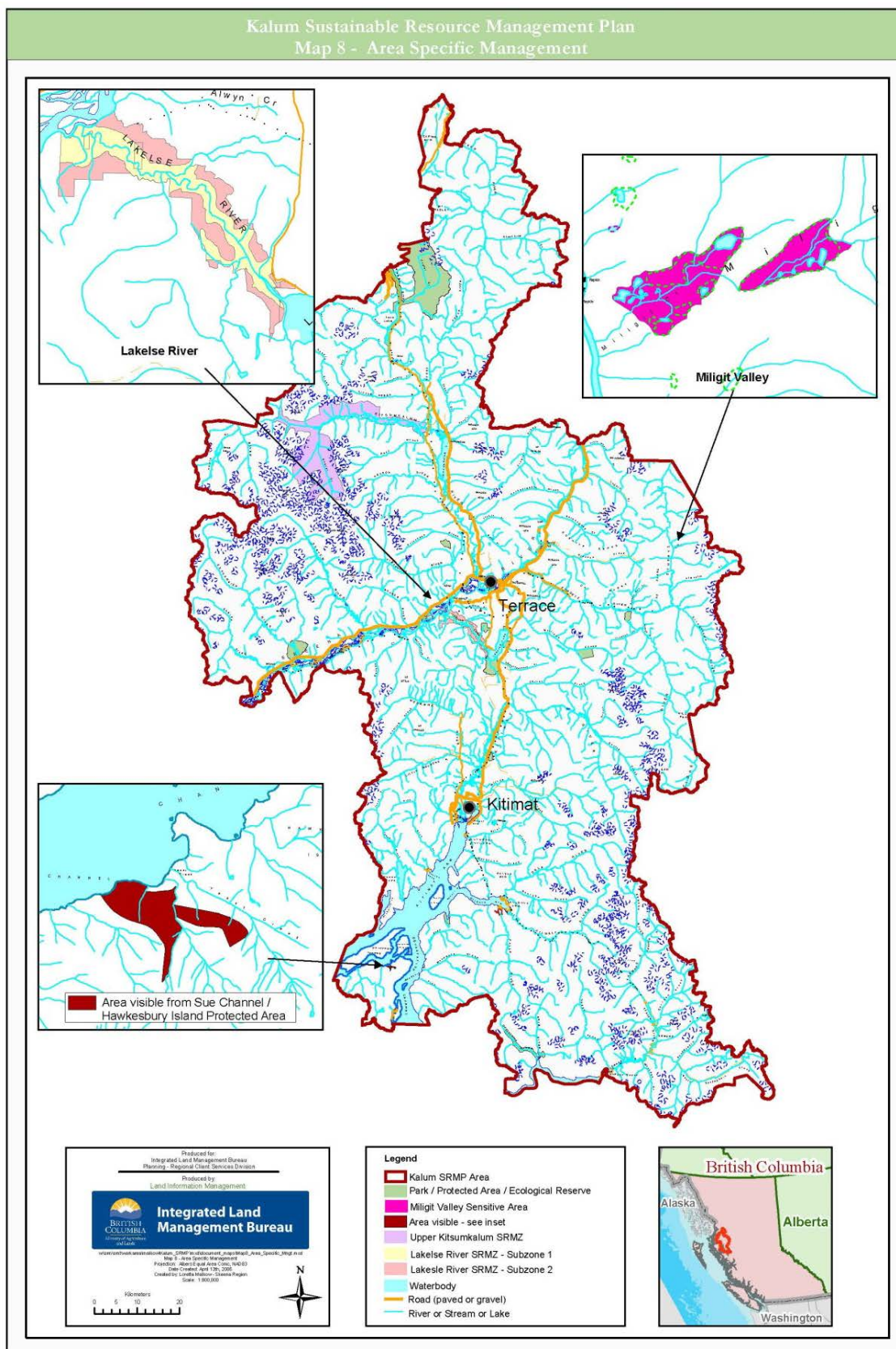


Figure 11. Kalum SRMP Map 8 – Area Specific Management

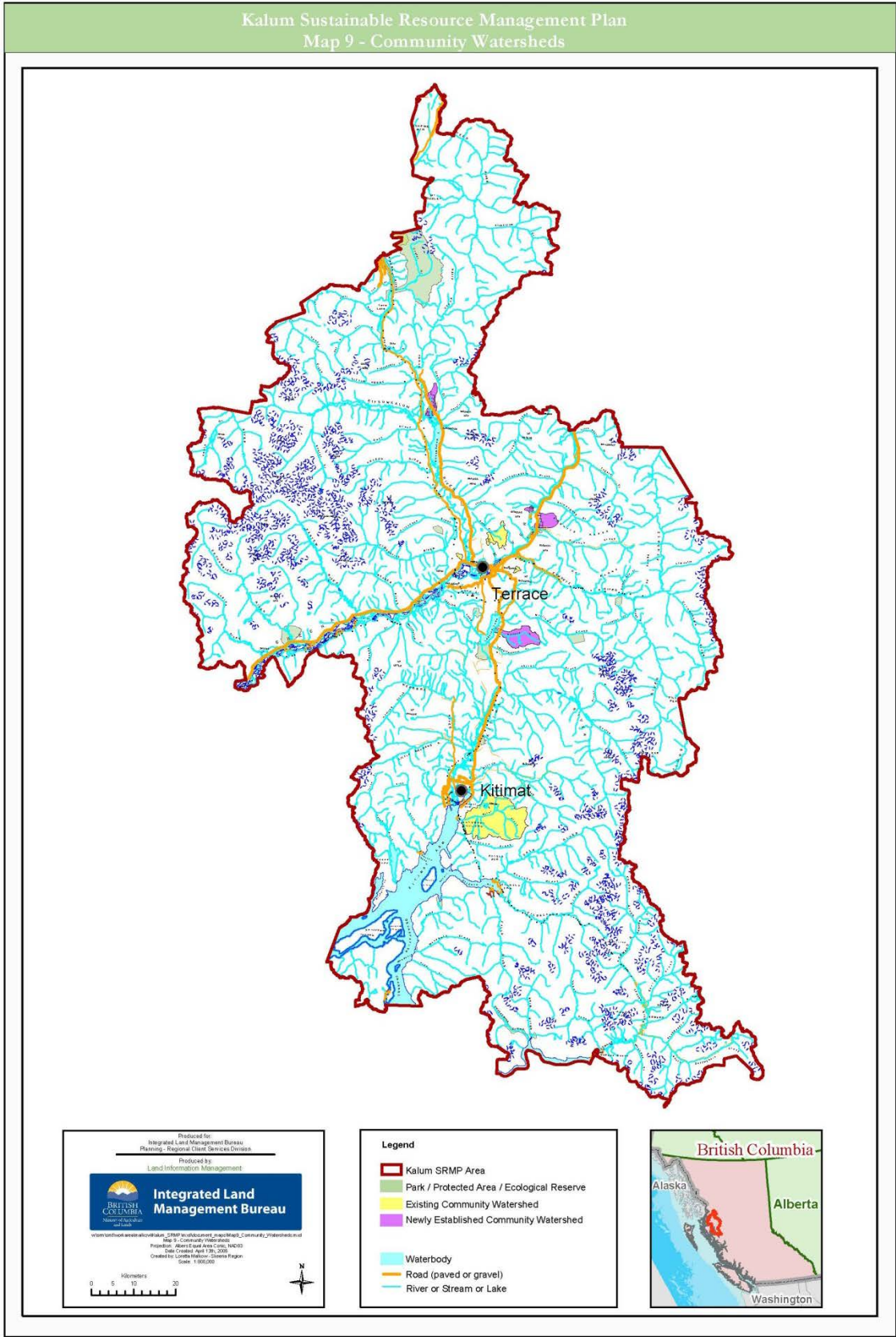


Figure 12. Kalum SRMP Map 9 – Community Watersheds

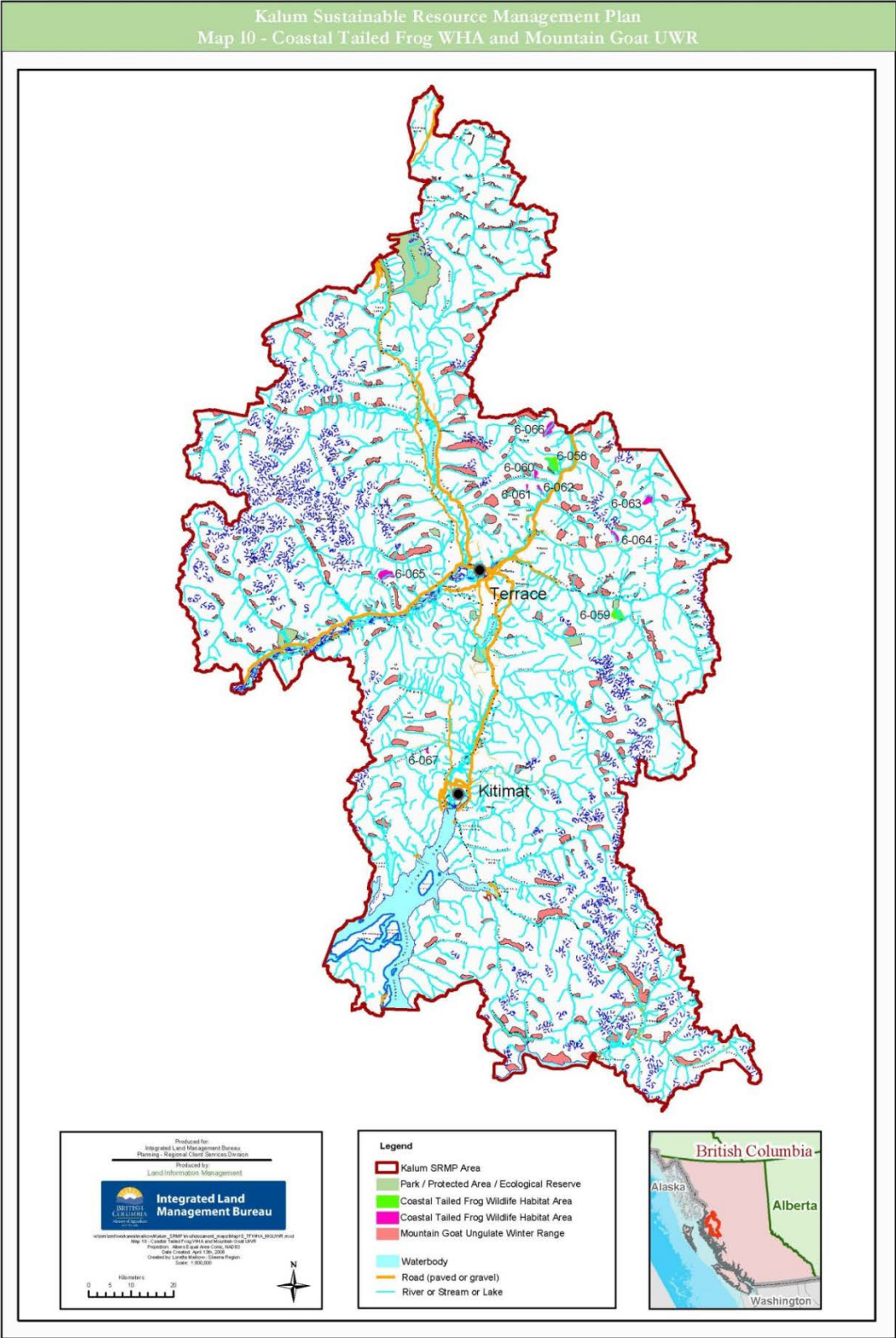


Figure 13. Kalum SRMP Map 10 – Coastal Tailed Frog WHA and Mountain Goat UWR

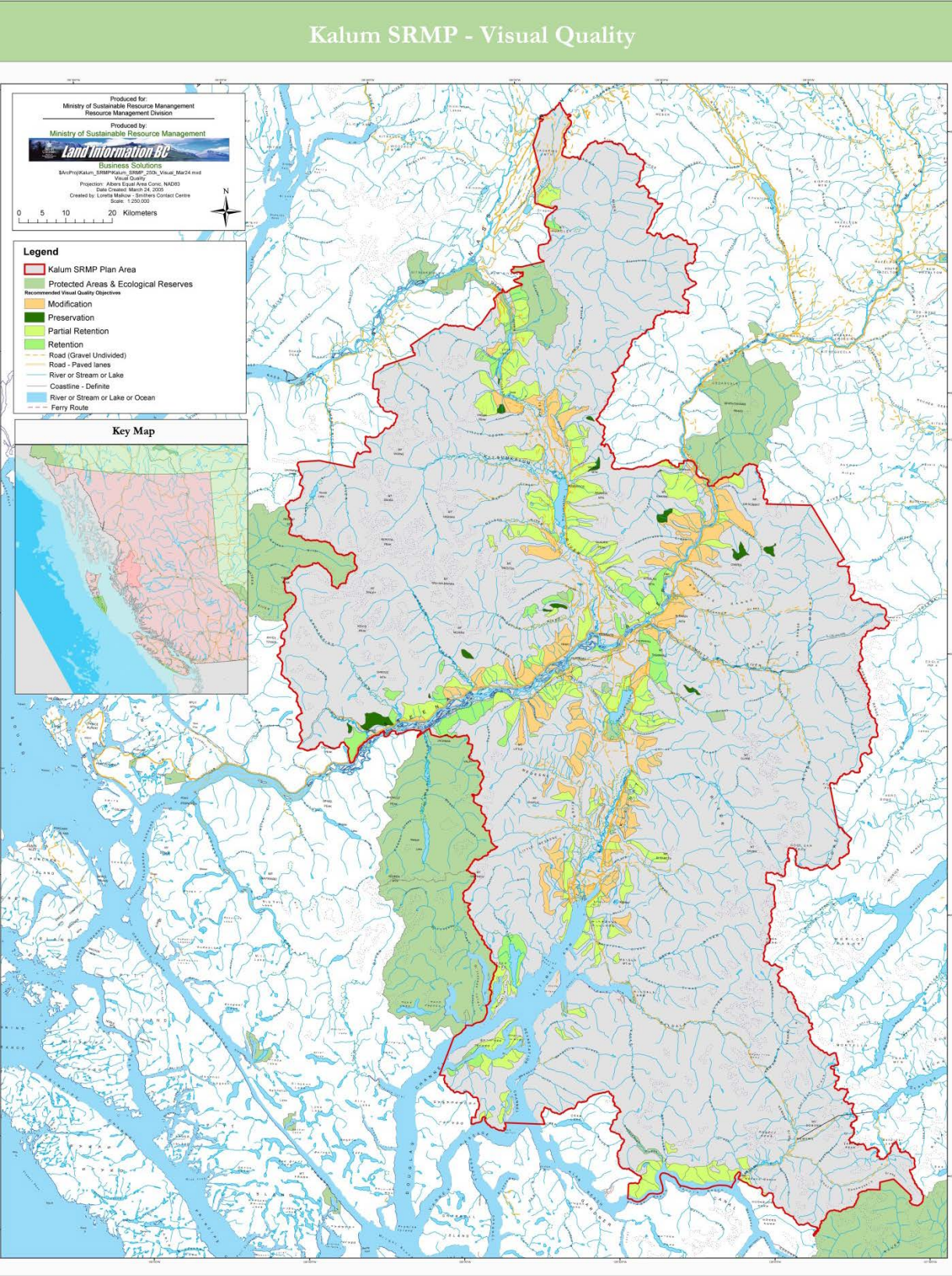


Figure 14. Kalum SRMP Map – Visual Quality

Table 21. Kalum SRMP Table 1 - Seral stage definition by biogeoclimatic unit (based on the Biodiversity Guidebook 1995).

BEC Unit	NDT	Forest Stand Age (years)		
		Early	Mature	Old
CWHvh2, vm, vm1, vm2	1	<40	>80	>250
ESSFwv, MH mm1, mm2	1	<40	>120	>250
CWHws1, ws2	2	<40	>80	>250
ESSFmk	2	<40	>120	>250
ICHmc1, mc2	2	<40	>100	>250

Source: Kalum SRMP Table 1

Table 22. Kalum SRMP Table 2 -Target seral stage distribution (% of forested land base in each BEC unit).

Landscape Unit	BEO	BEC Variant	Seral Stage Distribution (% of forested land base)		
			Early	Mature + old	Old
Nass River (K'ali Aksim Lisims) Kalum	H	ICHmc1/mc2	<27	>46	>13
Skeena River Kalum	H	CWHvm	<23	>54	>19
		CWHws1/ws2	<27	>51	>13
		ICHmc2	<27	>46	>13
		MHmm1/mm2	<17	>54	>28
Beaver	I	CWHws1/ws2	<36	>34	>9
		MHmm2	<22	>36	>19
Clore	I	CWHws1/ws2	<36	>34	>9
		ESSFmk	<36	>28	>9
		ESSFwv, MHmm2	<22	>36	>19
Exstew	I	CWHws1/ws2	<36	>34	>9
		MHmm2	<22	>36	>19
Hawkesbury Island West	I	CWHvh2	<30	>36	>13
		MHwh1	<22	>36	>19
Hirsch ⁹	I	CWHvm CWHws1/ws2,	<30	>36	>13
		MHmm1	<36	>34	>9
			<22	>36	>19
Ishkheenickh (Ksi Hlgix)	I	CWHvm,	<30	>36	>13
		CWHws1/ws2	<36	>34	>9
		MHmm1	<22	>36	>19
Kalum	I	CWHws1/ws2	<36	>34	>9
		MHmm2	<22	>36	>19
Kasiks	I	CWHvm	<30	>36	>13
		MHmm1	<22	>36	>19
Kemano ¹⁰	I	CWHvm/vm1/vm2	<30	>36	>13
		CWHws2	<36	>34	>9
		ESSFmk	<36	>28	>9
		MHmm1/mm2	<22	>36	>19
Lakelse ¹¹	I	CWHws1/ws2	<36	>34	>9
		MHmm2	<22	>36	>19
Tseax (Ksi Sii Aks)	I	CWHws1/ws2	<36	>34	>9
		ICHmc1/mc2	<36	>31	>9
		MHmm2	<22	>36	>19
Wedene	I	CWHvh2/vm	<30	>36	>13
		CWHws1/ws2	<36	>34	>9
		MHmm1/mm2	<22	>36	>19
Dala	L	CWHvm	n/a	>18	>13
		CWHws2	n/a	>17	>9
		MHmm1	n/a	>19	>19
Dasque	L	CWHws1/ws2	n/a	>17	>9
		MHmm2	n/a	>19	>19
Exchamsiks	L	CWHvm	n/a	>18	>13
		MHmm1	n/a	>19	>19

Landscape Unit	BEO	BEC Variant	Seral Stage Distribution (% of forested land base)		
Falls ¹²	L	CWHvm/vm1 MHmm1	n/a n/a	>18 >19	>13 >19
Hawkesbury Island East	L	CWHvh2 MHwh1	n/a n/a	>18 >19	>13 >19
Horetzky	L	CWHws2 MHmm2	n/a n/a	>17 >19	>9 >19
Hot Springs	L	CWHws1/ws2 MHmm2	n/a n/a	>17 >19	>9 >19
Jesse Bish ¹³	L	CWHvm MHmm1	n/a n/a	>18 >19	>13 >19
Kiteen (Ksi Gahlt'in)	L	CWHws2 ICHmc1/mc2 MHmm2	n/a n/a n/a	>17 >15 >19	>9 >9 >19
Kitimat	L	CWHvm CWHws1/ws2 MHmm1/mm2	n/a n/a n/a	>18 >17 >19	>13 >9 >19
Kleanza Treasure	L	CWHws1/ws2 ICHmc2 MHmm2	n/a n/a n/a	>17 >15 >19	>9 >9 >19
Ksedin (Ksi Mat'in)	L	CWHws1/ws2 MHmm2	n/a n/a	>19 >19	>9 >19
Nelson Fiddler	L	CWHws1/ws2 ICHmc2 MHmm2	n/a n/a n/a	>17 >15 >19	>9 >9 >19

Source: Kalum SRMP Table 2

⁹ The old seral targets do not apply to the Wathlsto watershed of this landscape unit (see Map 3). Old seral targets for this watershed are specified in Table 5.

¹⁰ The old seral targets do not apply to the Owyacumish, Brim, and Wahoo watersheds of this landscape unit (see Map 3). **Old seral targets for these watersheds are specified in Table 5.**

¹¹ The early seral targets do not apply to Lakelse River Special Resource Management Zone (SRMZ), Subzone 2 (Map 8). Targets for this area are specified in objective 12.

¹² The old seral targets do not apply to the Hugh watershed of this landscape unit (see Map 3). Old seral targets for this watershed are specified in Table 5.

¹³ The old seral targets do not apply to the Jesse and Emsley watersheds of this landscape unit (see Map 3). Old seral targets for these watersheds are specified in Table 5.

Table 23. Kalum SRMP Table 3 - Allowable deviations from the early seral stage targets set in Table 2

Landscape Unit	BEC variant	Maximum Early Seral Forest (% of forested land base)
Nass River (K'alii Aksim Lisims) Kalum	ICHmc1 ICHmc2	<42 <37
Skeena River Kalum	CWHvm CWHws1 CWHws2, ICHmc2 MHmm1, MHmm2	<33 <42 <37 <27
Beaver	CWHws1 CWHws2 MHmm2	<51 <46 <32
Clore	CWHws1 CWHws2, ESSFmk ESSFmk, MHmm2	<51 <46 <32
Exstew	CWHws1	<51
	CWHws2 MHmm2	<46 <32
Hawkesbury Island West	CWHvh2 MHwh1	<40 <32
Hirsch	CWHvm CWHws1 CWHws2 MHmm1	<40 <51 <46 <32
Ishkheenickh (Ksi Hlgina)	CWHvm CWHws1, CWHws2 MHmm1	<40 <46 <32
Kalum	CWHws1 CWHws2 MHmm2	<51 <46 <32
Kasiks	CWHvm MHmm1	<30 <32
Kemano	CWHvm, CWHvm1, vm2 CWHws2, ESSFmk MHmm1, MHmm2	<40 <46 <32
Lakelse ¹⁴	CWHws1 CWHws2 MHmm2	<51 <46 <32
Tseax (Ksi Sii Aks)	CWHws1 CWHws2, ICHmc1 ICHmc2 MHmm2	<51 <46 <51 <32
Wedeene	CWHvh2, CWHvm CWHws1 CWHws2 MHmm1, MHmm2	<40 <51 <46 <32

Source: Kalum SRMP Table 3

Table 24. Kalum SRMP Table 4 - Undeveloped watersheds

Landscape Unit	Undeveloped Watersheds
Jesse Bish	Jesse / Emsley
Hirsch	Wathlsto
Falls	Hugh
Kemano	Brim / Wahoo / Owyacumish

Source: Kalum SRMP Table 4

Table 25. Kalum SRMP Table 5 - Target old seral stage forest within undeveloped watersheds (% forested land base in each BEC unit/site series)

Undeveloped Watershed	BEC Variant	Site Series	% of old forest predicted by natural disturbance	Old Seral Forest Target (% of forested land base)
Jesse Emsley	CWHvm1	01	89	27
		03	93	28
		05	73	22
		06	88	26
		08	73	22
		09	70	21
		12	93	28
		13	93	28
		14	78	23
	CWHvm2	01	89	27
		03	93	28
		05	73	22
		06	88	26
		08	73	22
		09	70	21
		10	70	21
	MHmm1	01	86	26
		02	93	28
		03	86	26
		04	93	28
		06	82	28
		07	82	28
Wathlsto	CWHvm1	01	89	27
		03	93	28
		05	73	22
		06	88	26
		08	73	22
		12	93	28
		13	93	28
	CWHws2	01	89	27
		03	93	28
		06	88	26
		10	70	21
	MHmm1	01	86	26
		02	93	28
		03	86	26
		04	93	28
Hugh	CWHvm1	01	89	27
		03	93	28
		05	73	22
		06	88	26
		08	73	22
		09	70	21
		12	93	28
		13	93	28
	CWHvm2	01	89	27
		03	93	28
		05	73	22
		06	88	26
		08	73	22
		10	70	21
		11	70	21
	CWHws2	01	86	26
		03	93	28
		06	70	21
		10	93	28
	MHmm1	01	86	26
		02	93	28
		03	86	26
		04	93	28
		06	82	28
		07	82	28

Undeveloped Watershed	BEC Variant	Site Series	% of old forest predicted by natural disturbance	Old Seral Forest Target (% of forested land base)
Wahoo	CWHvm1	01	89	27
		03	93	28
		05	73	22
		06	88	26
		08	73	22
		13	98	29
	CWHws2	01	86	26
		03	93	28
	CWHws2	06	70	21
		07	70	21
		10	93	28
		11	78	23
	ESSFmk	01	70	21
		02	70	21
		03	70	21
		04	70	21
		08	70	21
	MHmm1	01	86	26
		02	93	28
Brim	CWHvm1	01	89	27
		03	93	28
		05	73	22
		06	88	26
		08	73	22
		09	70	21
		12	93	28
		14	78	23
	CWHvm2	01	89	27
		03	93	28
		06	88	26
		10	70	21
	MHmm1	01	86	26
		02	93	28
		03	86	26
		04	93	28
		06	93	28
Owyacumish	CWHvm1	01	89	27
		03	93	28
		05	73	22
		06	88	26
		08	73	22
	CWHws2	01	89	27
		03	93	28
		06	70	21
	CWHws2	10	93	28
		11	78	23
	MHmm1	01	86	26
		02	93	28
		03	86	26
		04	93	28
		06	93	28

Source: Kalum SRMP Table 5

Table 26. Kalum SRMP Table 6 - Wildlife tree patch retention targets

Landscape Unit	BEC Subzone	Target WTP retention ²³ (%)
Nass River (K'alii Aksim Lisims) Kalum	ICHmc	7
Skeena River Kalum	CWHvm	5
	CWHws ICHmc	5
	MHmm	4
		0
Beaver	CWHws	8
	MHmm	0.5
Clore	CWHws	6
	ESSFmk ESSFvw	3
	MHmm	1
		3
Exstew	CWHws	6
	MHmm	3
Hawkesbury Island West	CWHvh	0
	MHwh	0
Hirsch	CWHvm	5
	CWHws	11
	MHmm	0
Ishkheenickh (Ksi Hlginx)	CWHvm	2
	CWHws	2
	MHmm	0
Kalum	CWHws	10
	MHmm	5
Kasiks	CWHvm	0
	MHmm	0
Kemano	CWHvm	0
	CWHws ESSFmk	1
	MHmm	0
		0
Lakelse	CWHws	7
	MHmm	0
Tseax (Ksi Sii Aks)	CWHws	4
	ICHmc	8
	MHmm	0
Wedeeene	CWHvm	3
	CWHvh CWHws	2
	MHmm	10
		3
Dala	CWHvm	3
	CWHws	0.5
	MHmm	0
Dasque	CWHws	7
	MHmm	0
Exchamsiks	CWHvm	0
	MHmm	0
Falls	CWHvm	1
	MHmm	0
Hawkesbury Island East	CWHvh	1
	MHwh	0
Horetzky	CWHws	2
	MHmm	0
Hot Springs	CWHws	7
	MHmm	0.5
Jesse Bish	CWHvm	1
	MHmm	0

Landscape Unit	BEC Subzone	Target WTP retention ²³ (%)
Kiteen (Ksi Gahl't'in)	CWHws	3
	ESSFww ICHmc	1
	MHmm	7
		1
Kitimat	CWHvm	5
	CWHws	7
	MHmm	0
Kleanza Treasure	CWHws	7
	ICHmc	6
	MHmm	2
Ksedin (Ksi Mat'in)	CWHws	6
	MHmm	0
Nelson Fiddler	CWHws	8
	ICHmc	5
	MHmm	2

Source: Kalum SRMP Table 6

²³ % of cut block area**Table 27. Kalum SRMP Table 7 - Patch size distribution targets (harvest units and leave areas)**

Natural Disturbance Type	Patch Size (ha)	Patch Size Distribution Target (% forested area within landscape unit)
NDT1, NDT2	<40	30-40
	40-80	30-40
	80-250	20-40

Table 28. Kalum SRMP Table 8 - Grizzly bear stocking standards

Site Association ²⁷	Subzone Variants	Free growing stocking standards (stems/ha) ²⁸		
		Target	Minimum	Maximum ²⁹
BaSS-Devil's club	vm1 and vm2	600	400	660
BaCw-Devil's club	ws1 and ws2	600	400	660
Cwss-Skunk cabbage	vm1 and vm2 ws1 and ws2	400	200	440
Ss-salmonberry and Act-Red-osier dogwood	vm1 and vm2 ws1 and ws2	500	200	550

²⁷ Stocking levels for low bench floodplain site associations are not listed; site-specific prescriptions for these associations should be developed that account for the naturally low density of microsites appropriate for crop tree growth and high shrub cover.

²⁸ The “well spaced” clause does not apply to forage gaps when stems are clustered as part of the site plan/ forest stewardship plan (FSP). Crop tree size vs. competing brush standards is unchanged from existing regional guidelines. When determining the number of crop trees, minimum inter-tree distances, as stated in the site plan/FSP, still apply to trees within the cluster.

²⁹ If stand exceeds maximum density set in the site plan/FSP at free-growing, these guidelines recommend spacing back to this stocking level.

³⁰ A five year planning cycle will start on the effective date of the “order establishing land use objectives”.

Table 29. Kalum Recreation Sites and Trails - Objectives

Site or Trail	Recreation Experience Objective	Site or Trail	Site or Trail	Recreation Experience Objective
Bornite Mountain Recreation Trail	Semi- primitive non-motorized	Active trail and natural vegetation will be retained within ten metres on either side of the trail centerline.	Hiking and viewing.	n/a
Clearwater Lakes Recreation Site	Semi- primitive non-motorized	Campsite and trail will be retained; the lake shoreline and natural vegetation will be conserved.	Hiking, tent camping, picnicking, and angling.	Non-motorized trail
Copper Mountain Recreation Site	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Deception Lake Recreation Site <i>DECOMMISSIONED</i>	Roaded	Lake shoreline and natural vegetation will be retained within site boundaries.	Camping, picnicking, angling and canoeing.	n/a
Gunsight Peak Recreation Trail	Semi- primitive non-motorized	Active trail and natural vegetation will be retained within ten metres on either side of the trail centerline.	Hiking and viewing.	n/a
Hai Lake Recreation Trail <i>Part of Hai Lakes Provincial Park</i>	Semi- primitive non- motorized	Active trail and natural vegetation will be retained within ten metres on either side of the trail centerline.	Hiking and viewing.	n/a
Harvey Recreation Site	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Lakelse River Recreation Site	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Lucky 7 Recreation Trail	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Onion Lake Recreation Trail	Semi- primitive non- motorized	Active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline.	Hiking, picnicking, snowshoeing and viewing.	n/a
Onion Lake Recreation Ski Trails	<i>Winter, with snow on the ground:</i> Semi- primitive non-motorized <i>Summer, snow free season:</i> Roaded	Trail will be maintained and the natural vegetation will be conserved within ten metres of the trail centerline.	<i>Winter, with snow on the ground:</i> Cross country skiing <i>Summer, snow free season:</i> Hiking and mountain biking.	<i>Winter, snow on the ground:</i> No motorized use permitted, other than for track setting and trail grooming activities.

Site or Trail	Recreation Experience Objective	Site or Trail	Site or Trail	Recreation Experience Objective
				<i>Summer, snow free season: n/a</i>
Salmon Run Recreation Site	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Steinhoe Ridge Recreation Trail	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Terrace Mountain Bike Trails	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Terrace Mountain Hiking Trails	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Thomas Recreation Site	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
Thornhill Mountain Recreation Trail	Semi- primitive non- motorized	Active trail and natural vegetation will be retained within ten metres on either side of the trail centerline.	Hiking and viewing.	n/a
Trapline Mountain Recreation Site	No Established Objectives	No Established Objectives	No Established Objectives	No Established Objectives
West Lake Recreation Site	Roaded	Lake shoreline and natural vegetation will be retained within site boundaries.	Camping, picnicking, angling, and canoeing.	n/a

APPENDIX IV – NASS SOUTH LUOR ORDER SCHEDULE AND MAPS

Ministerial Order
Land Use Objectives Regulation Order

Nass South
Sustainable Resource Management Plan



**Ministry of Forests, Lands and Natural
Resource Operations**

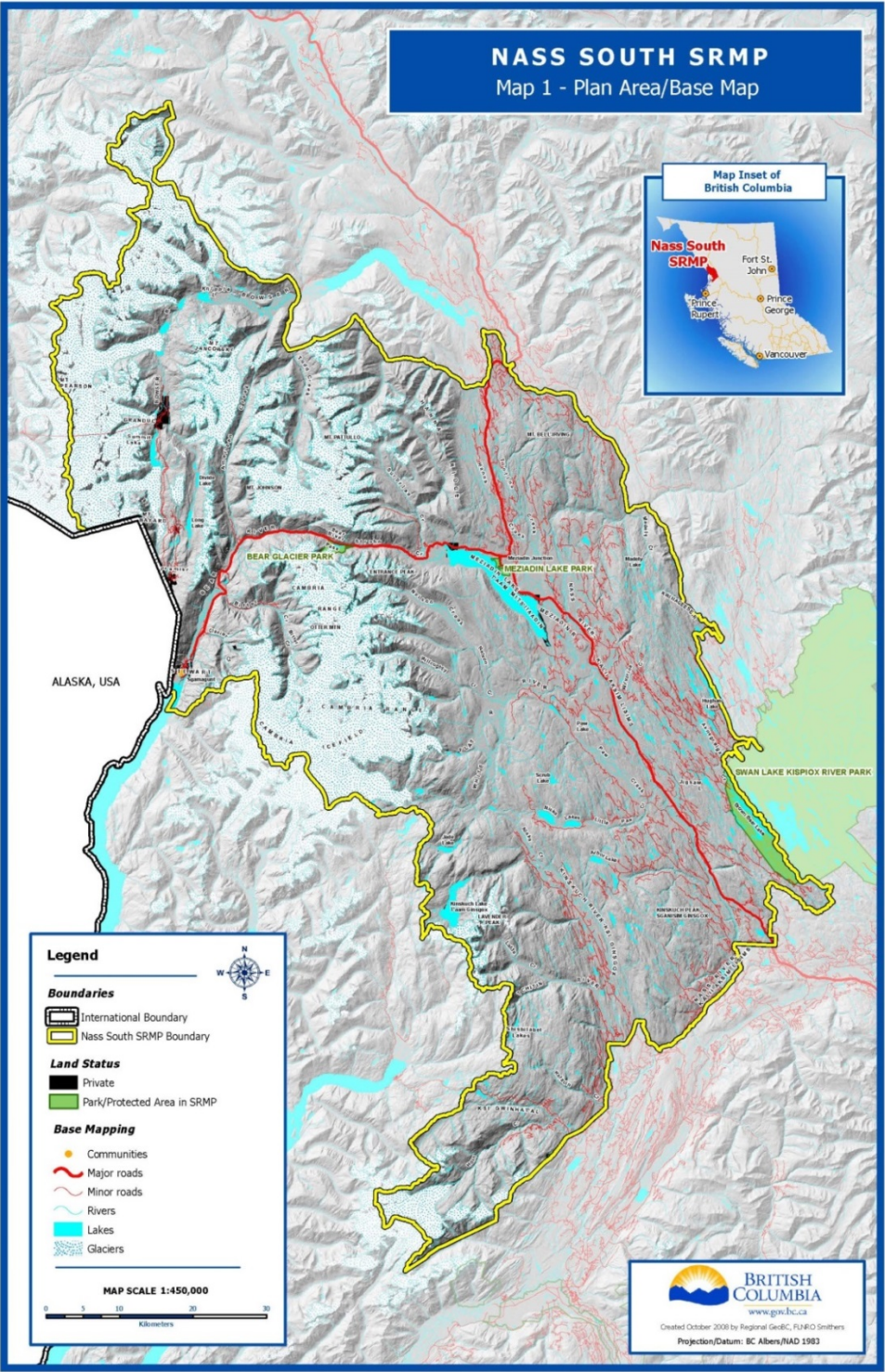


Figure 15. Nass South SRMP Map 1, Plan Area Base Map

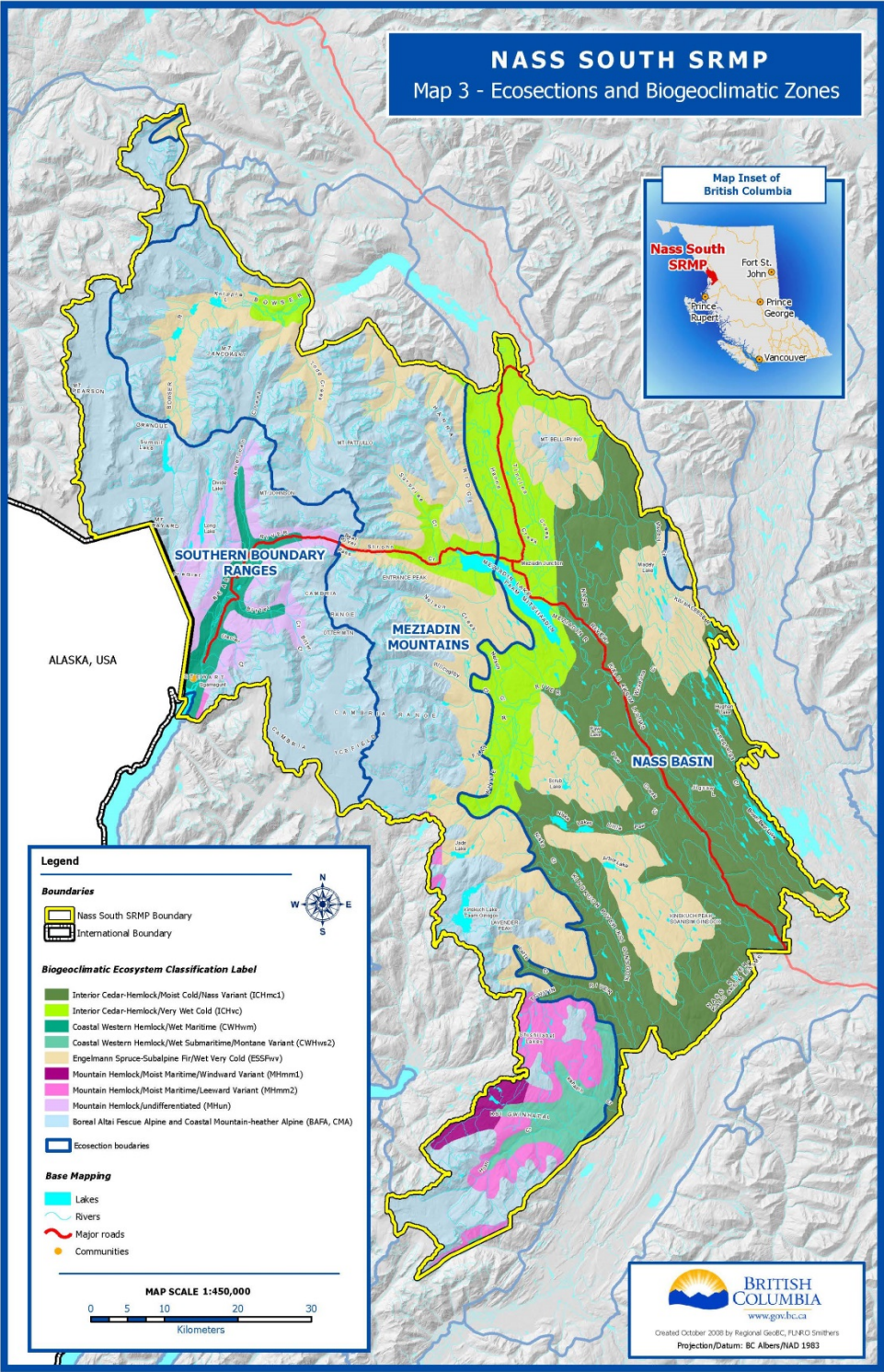


Figure 16. Nass South SRMP Map 2, Ecoregions and Biogeoclimatic Zones

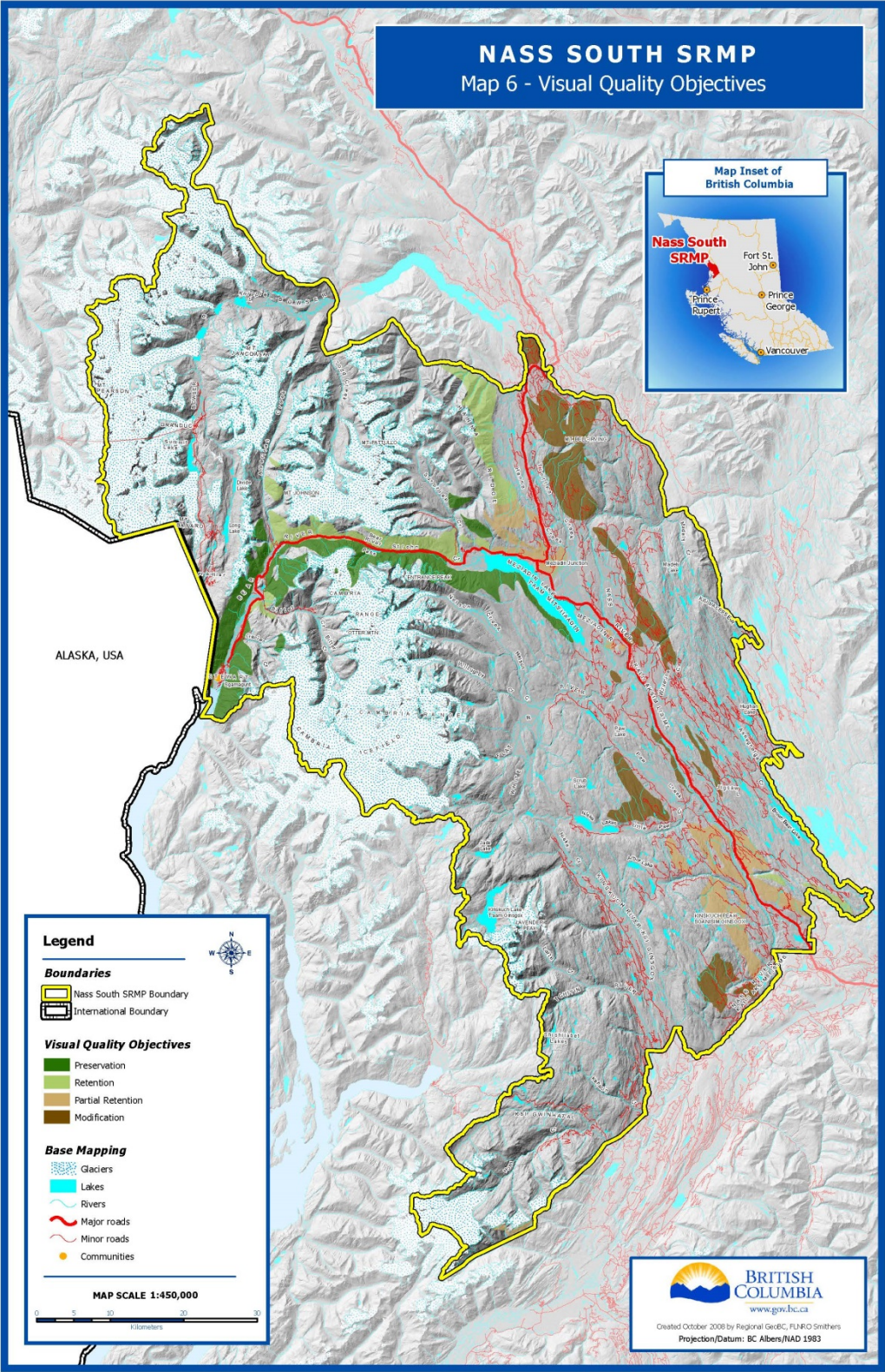


Figure 17. Nass South SRMP Map 6 – Visual Quality Objectives

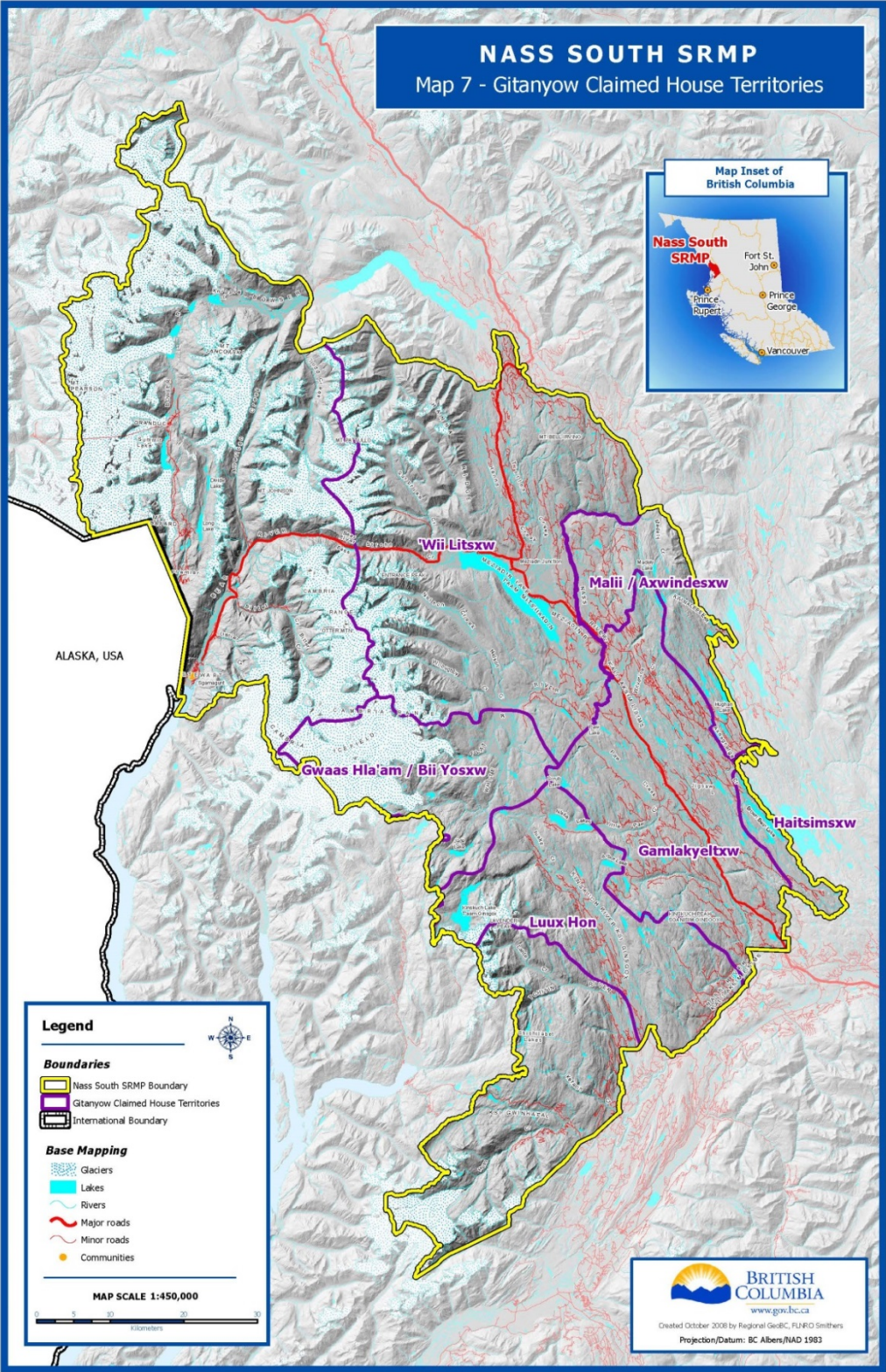


Figure 18. Nass South SRMP Map 7, Gitanyow Houses

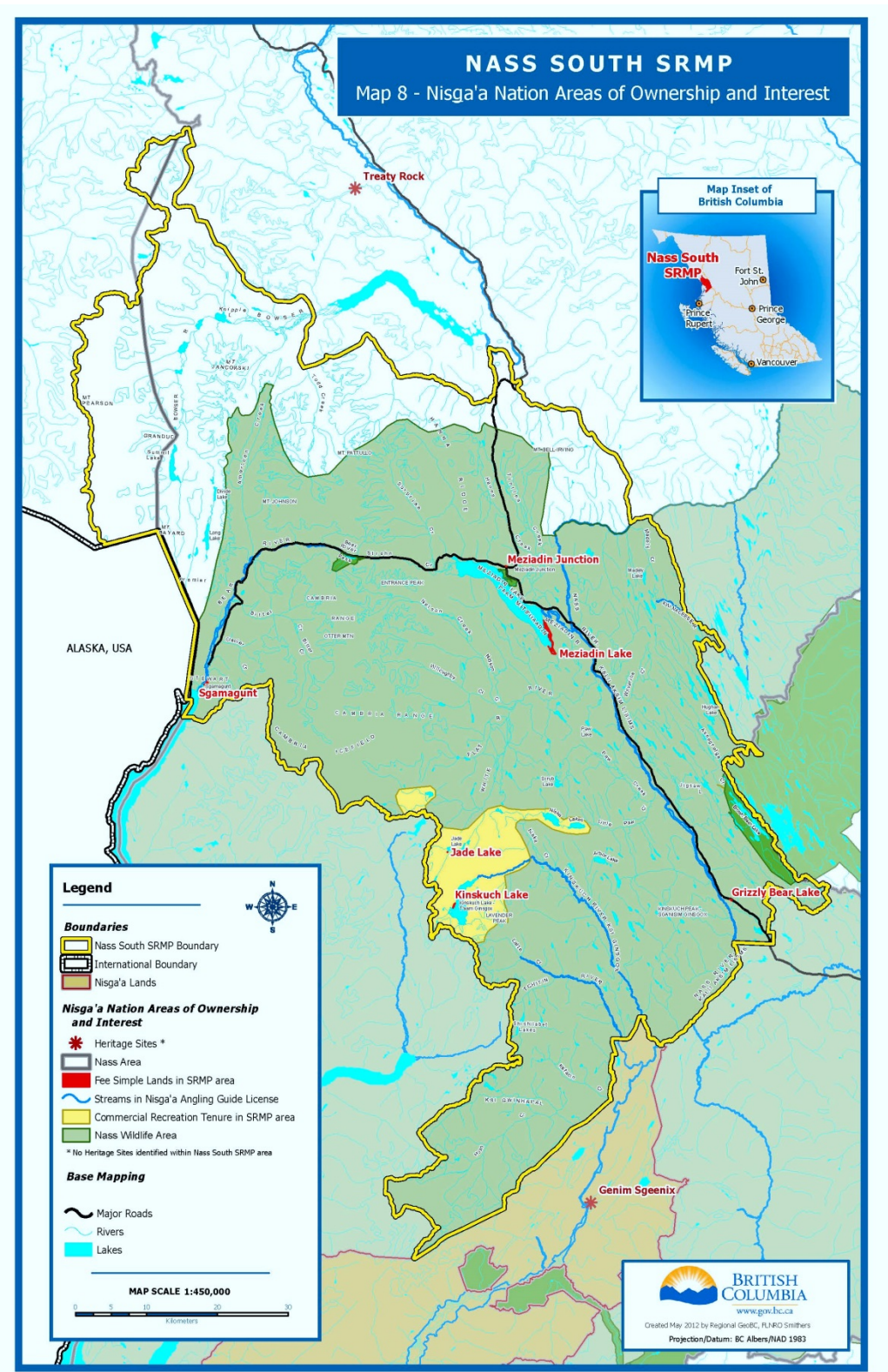


Figure 19. Nass South SRMP Map 8, Nisga'a Nation Areas of Ownership and Interest

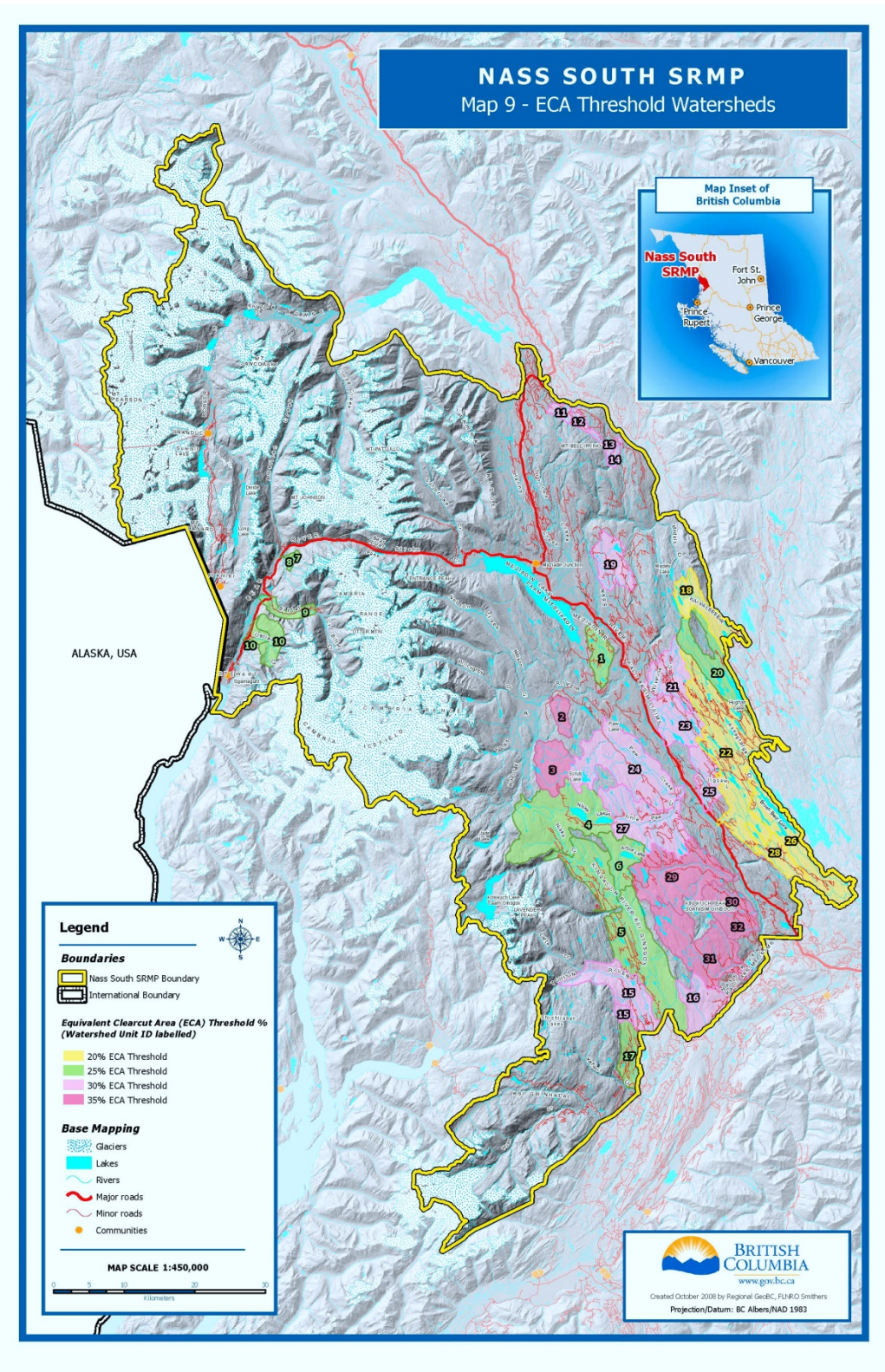


Figure 20. Nass South SRMP Map 9, Equivalent Clearcut Area Threshold Watersheds

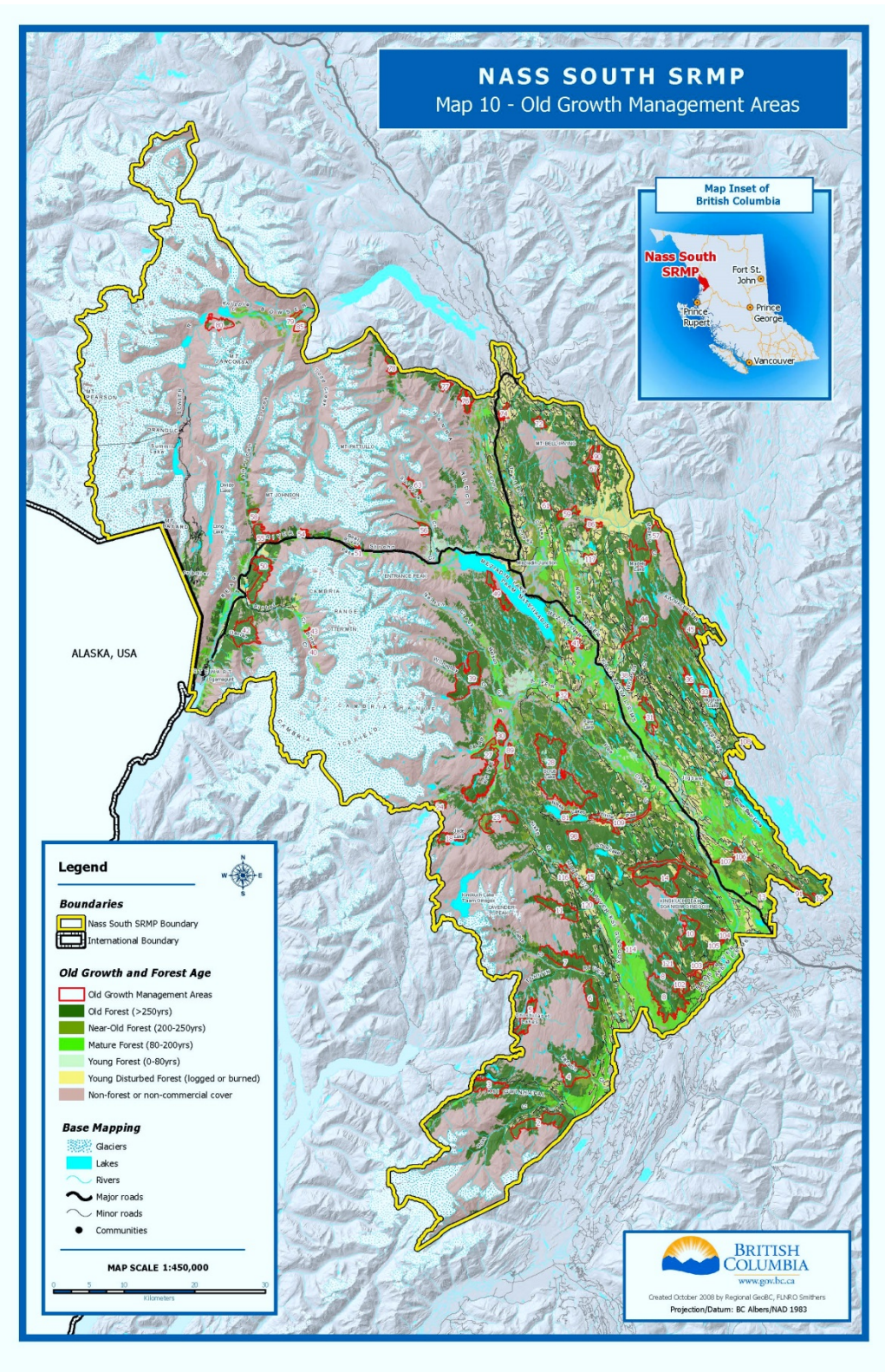


Figure 21. Nass South SRMP Map 10, Old Growth Management Areas

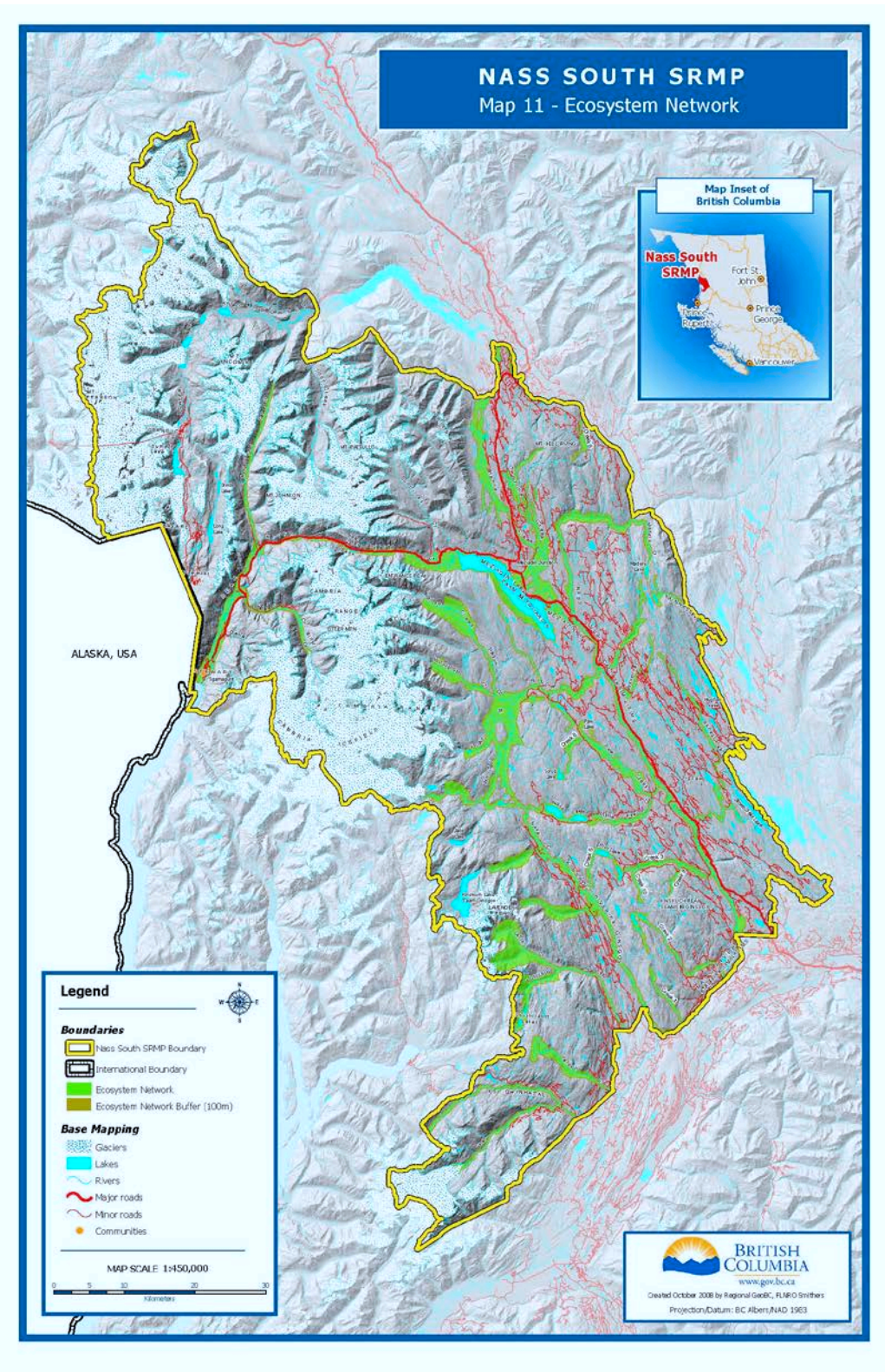


Figure 22. Nass South SRMP Map 11, Ecosystem Networks

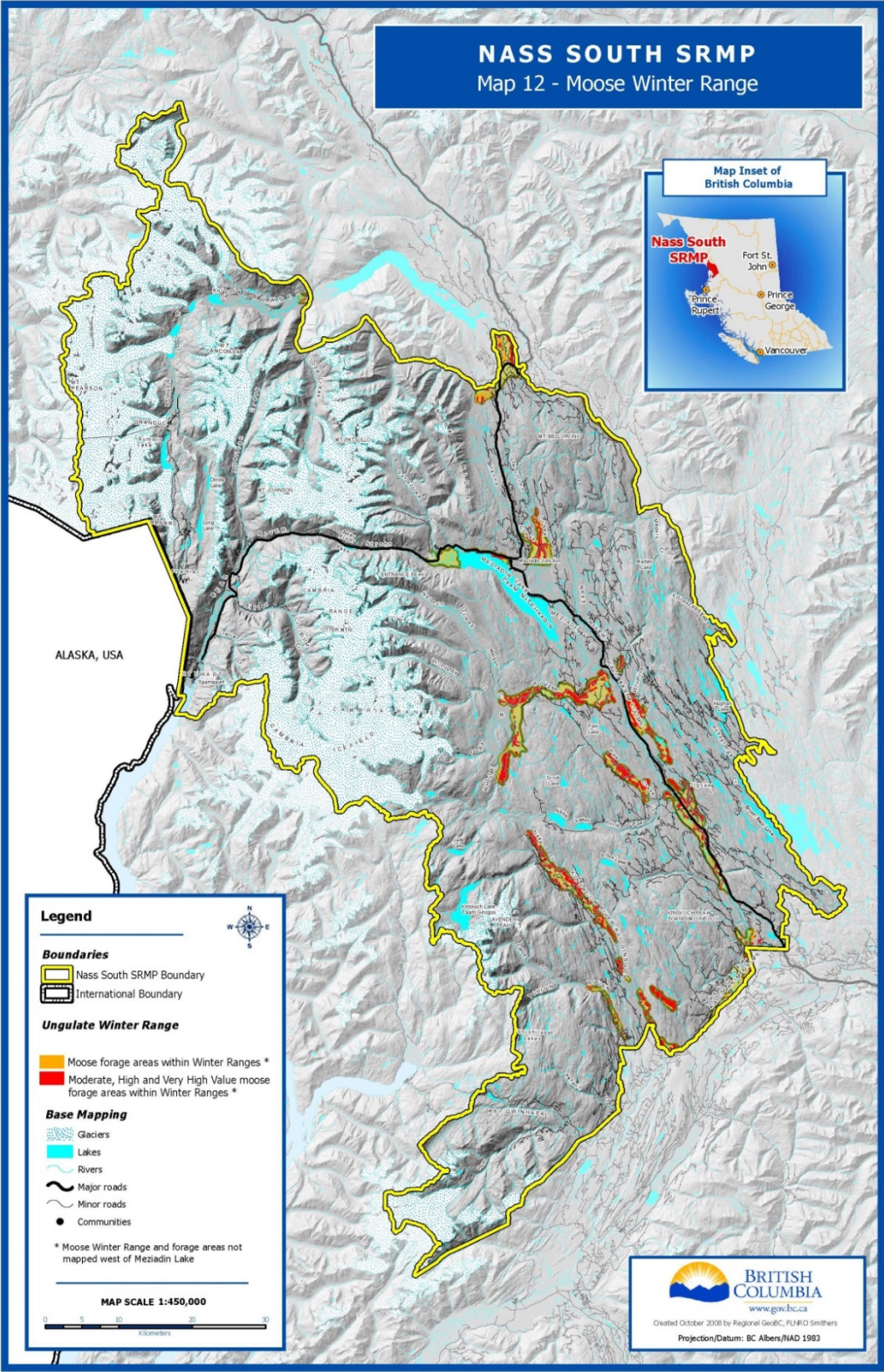


Figure 23. Nass South SRMP Map 12, Moose Winter Range

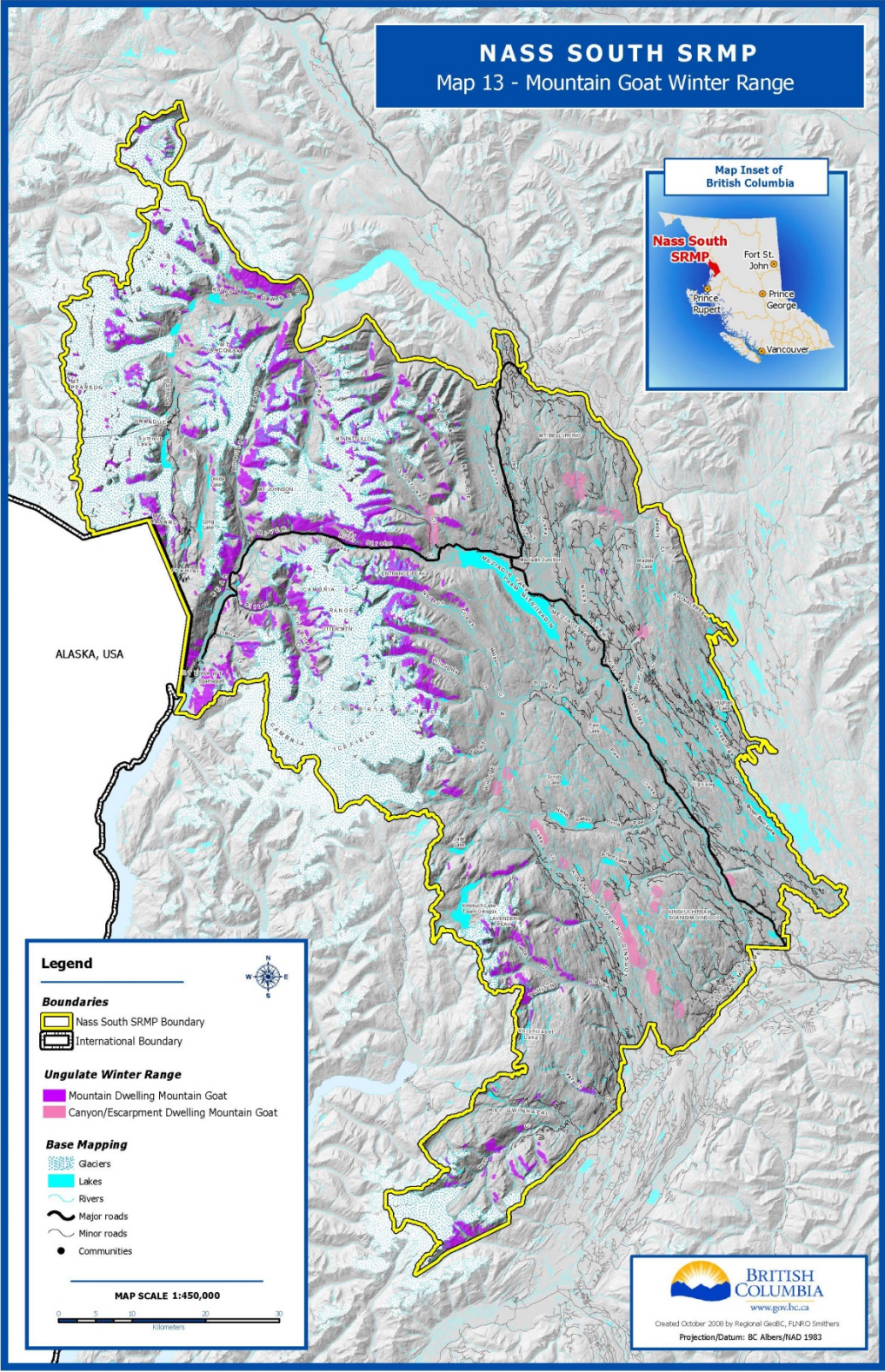


Figure 24. Nass South SRMP Map 13, Mountain Goat Winter Range

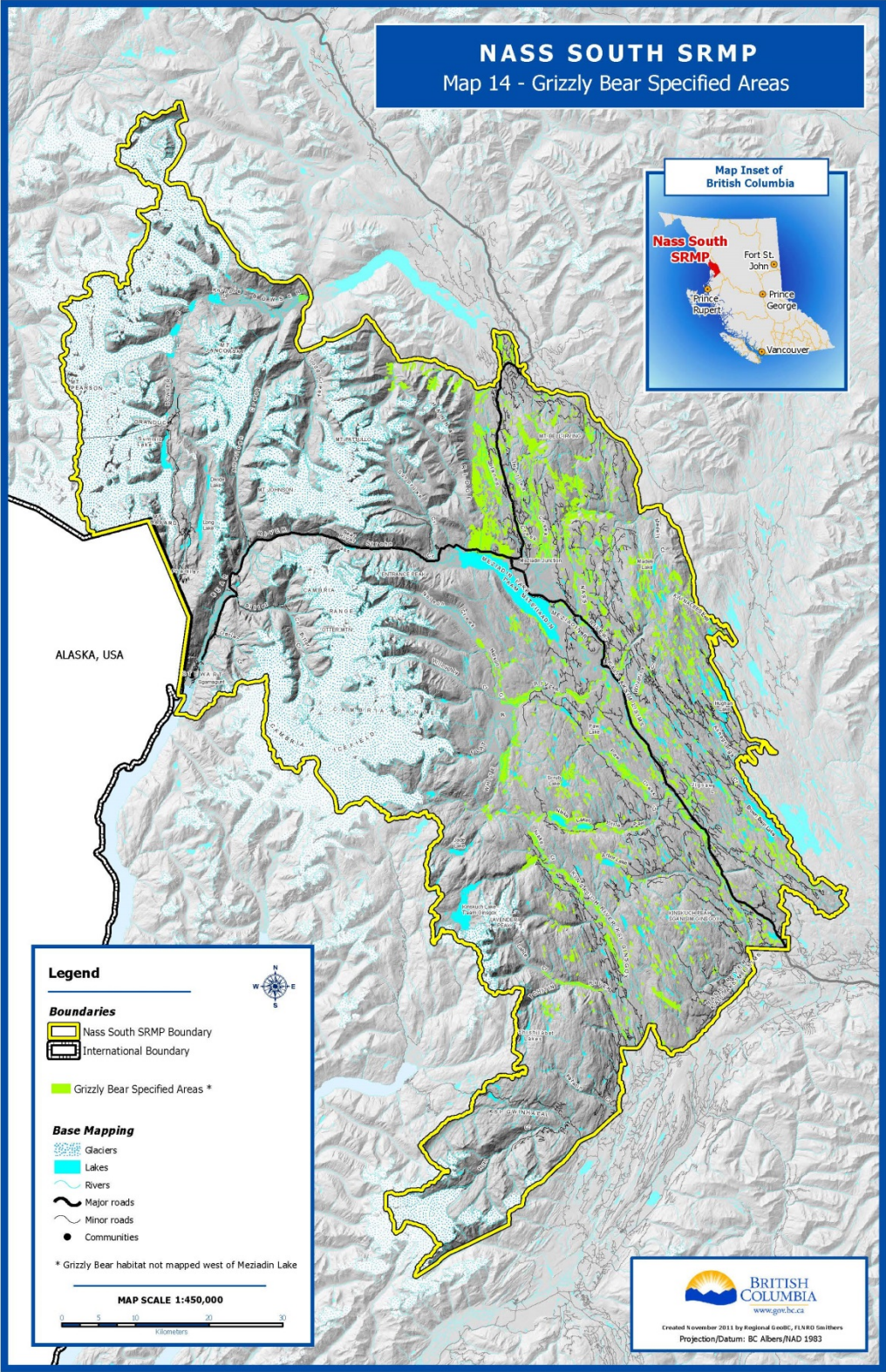


Figure 25. Nass South SRMP Map 14, Grizzly Bear Specified Areas

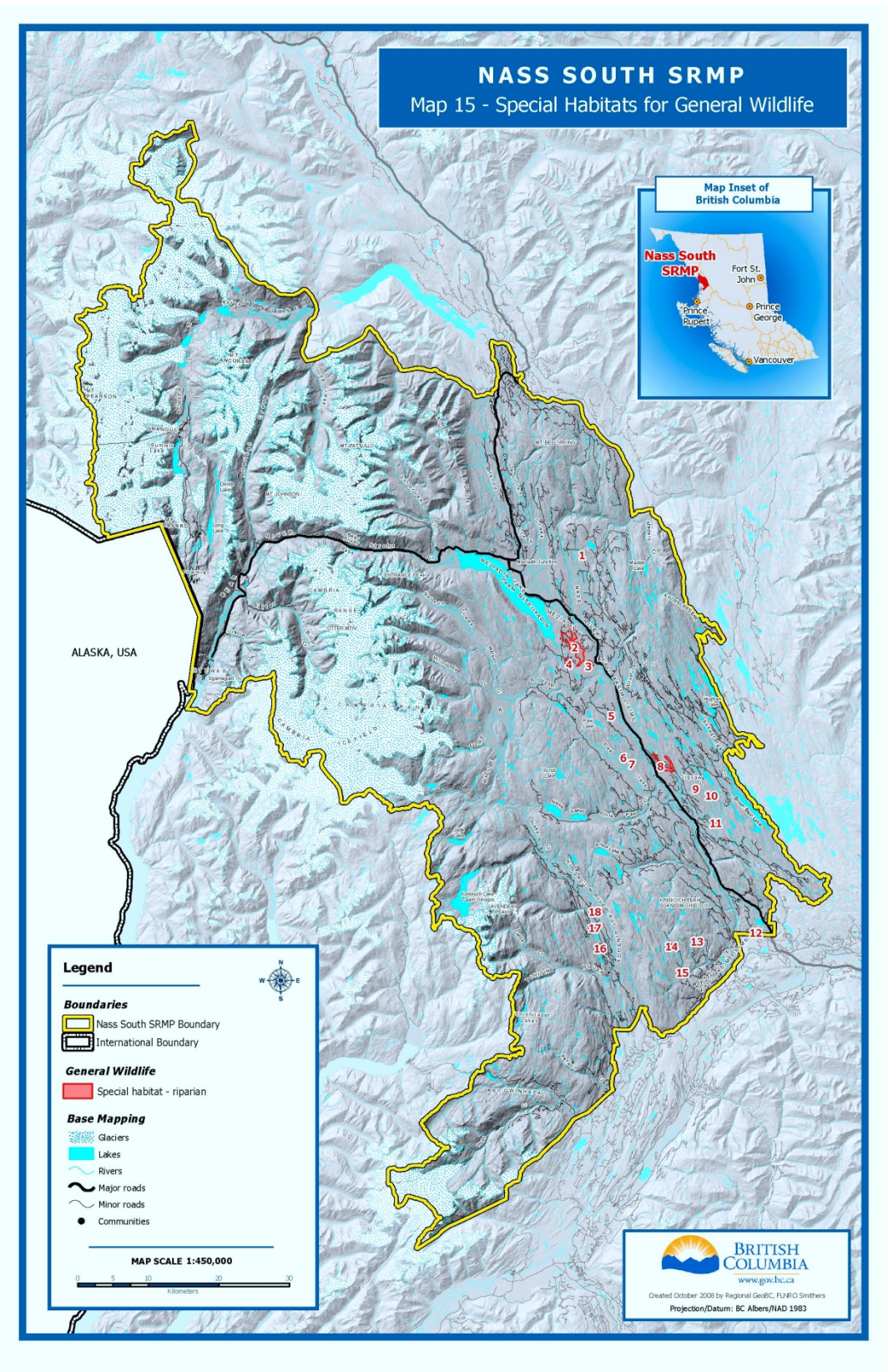


Figure 26. Nass South SRMP Map 15, General Wildlife Areas

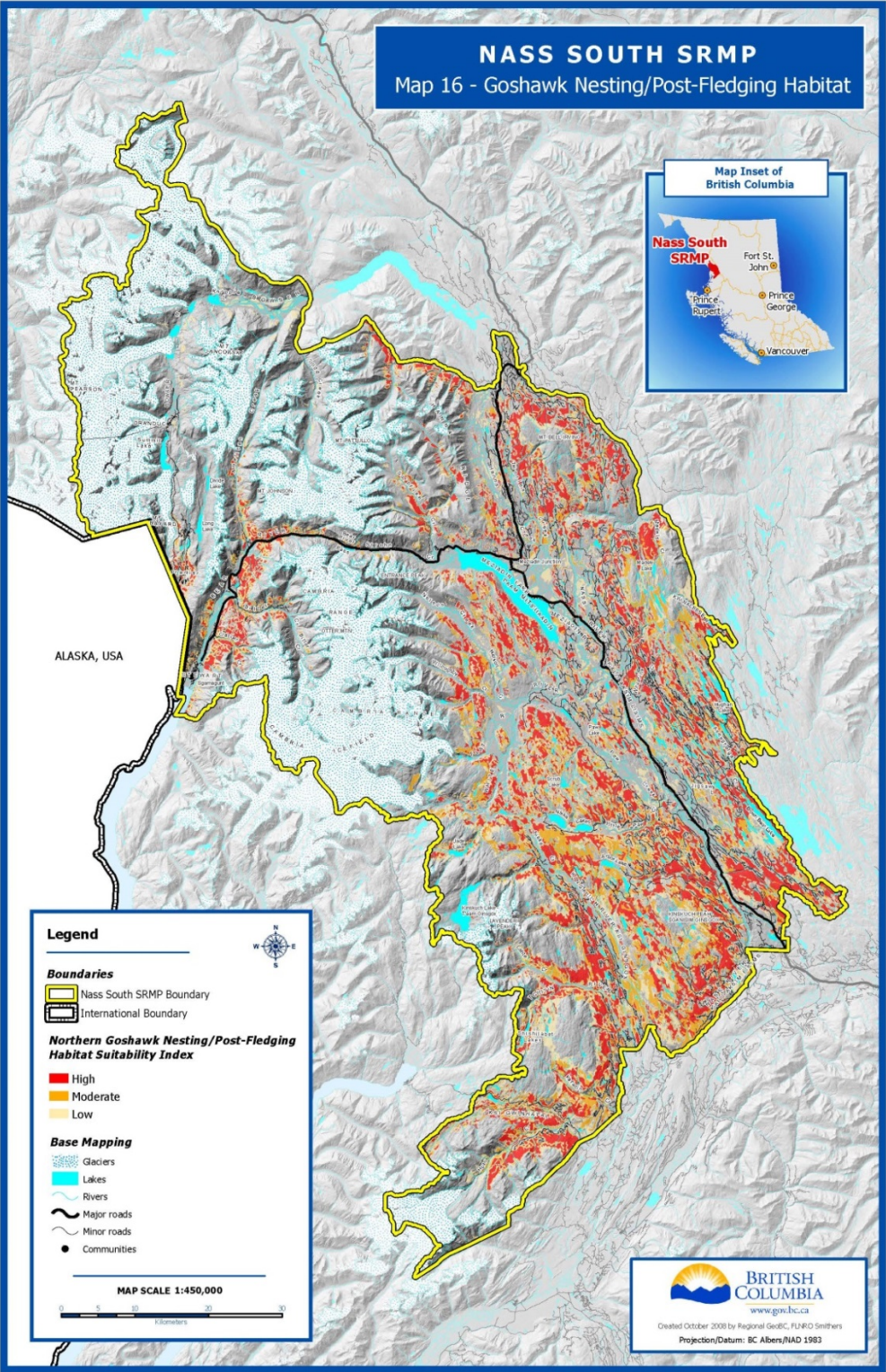


Figure 27. Nass South SRMP Map 16, Northern Goshawk Nesting,/Post-fledgling Habitat

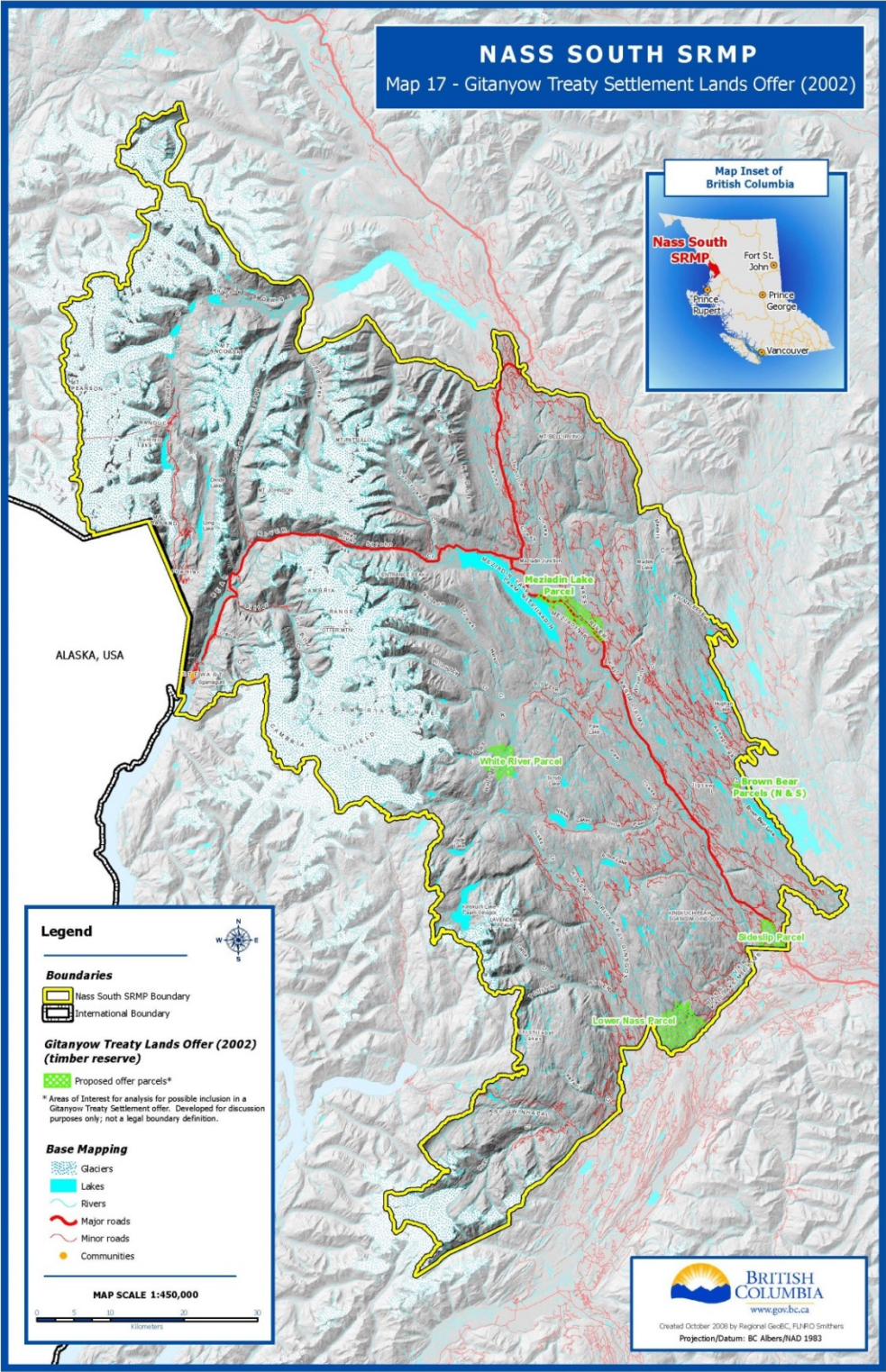


Figure 28. Nass South SRMP Map 17, Gitanyow Treaty Settlement Lands Offer (2002)

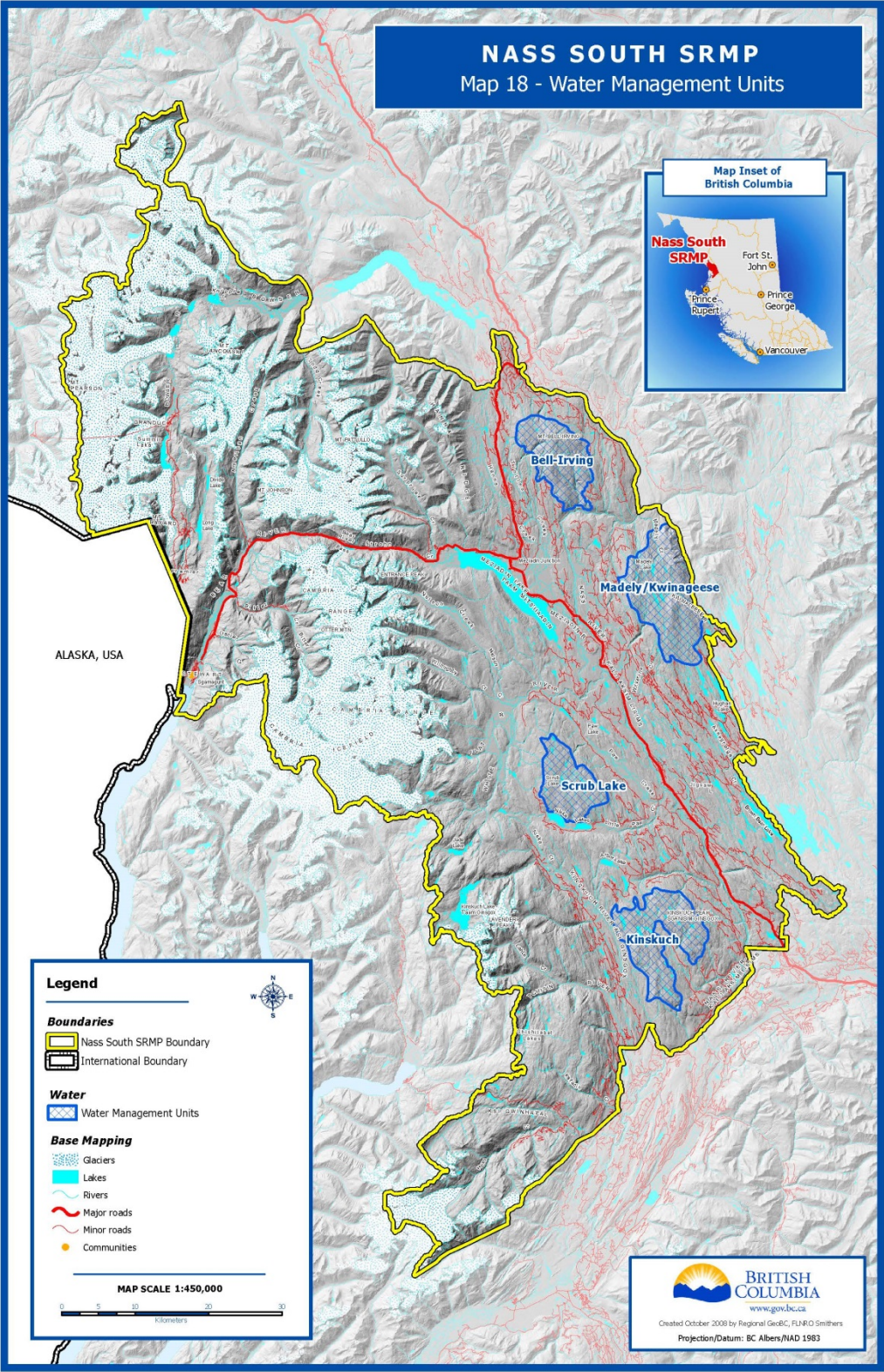


Figure 29. Nass South SRMP Map 18, Water Management Units

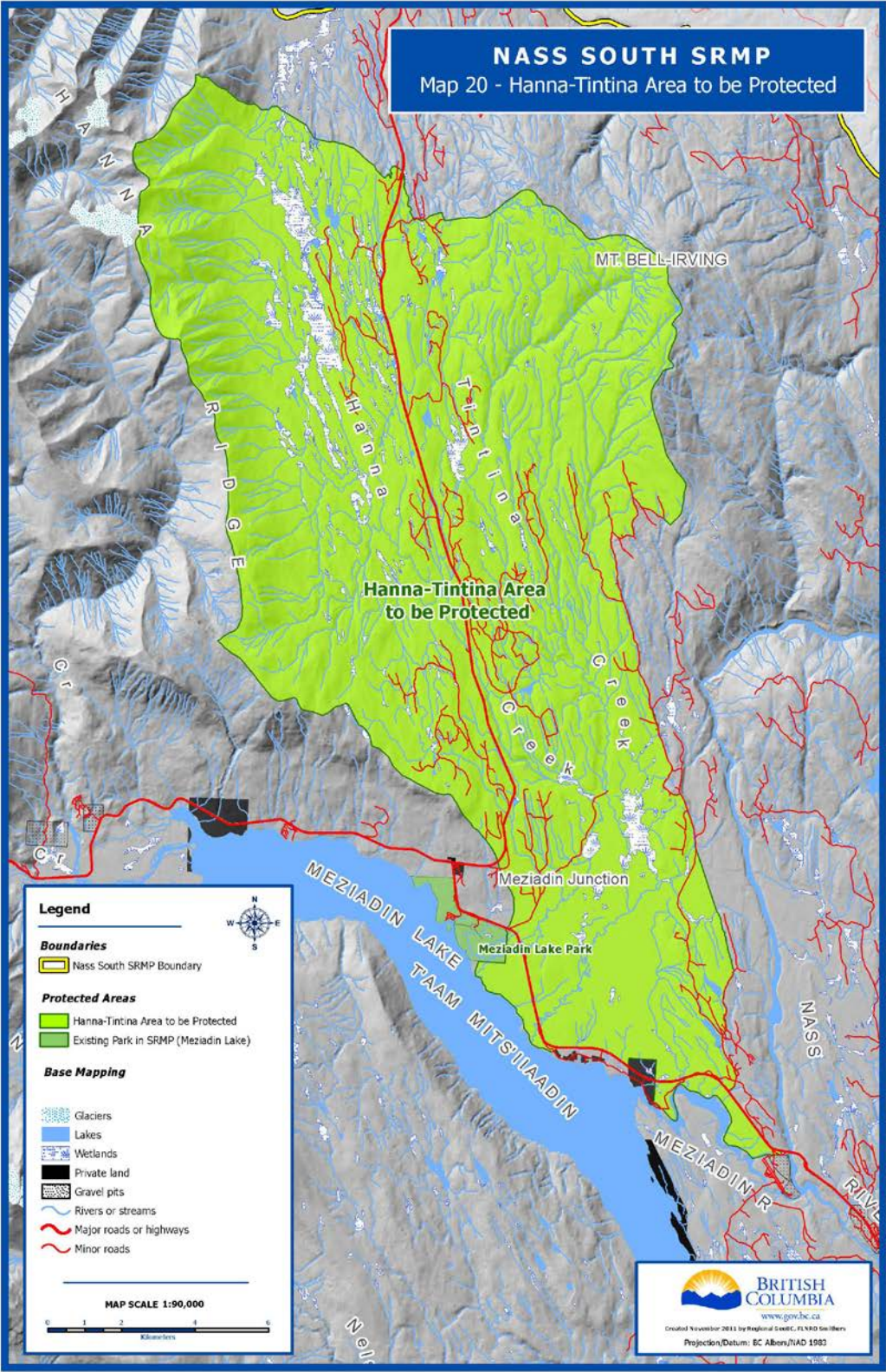


Figure 30. Nass South SRMP Map 20, Hanna-Tintina Area To Be Protected

APPENDIX V – APPLICABLE GOVERNMENT ACTION REGULATION ORDERS

Recreation Sites and Trails Orders

Species at Risk Orders

**Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat
Required for the Survival of Species at Risk in the Kalum Forest District (No Map)**

Specified Area Orders

**GAR Order: Coastal Tailed Frog Wildlife Habitat Area – Order #6-058, #6-059, and #6-060
to #6-067: March 28, 2006**

**GAR Order: Ungulate Winter Range – Order #U-6-001 Mountain goat (Kalum TSA)
November 24, 2005 (including Map)**

**GAR Order: Ungulate Winter Range – Order #6-009 Moose (Kalum TSA, Cascadia TSA,
Pacific TSA, TFL 1 and TFL41): April 21, 2015 (including Map)**

**GAR Order: Ungulate Winter Range – Order #U-6-002 Mountain goat (Nass TSA and
upper portion of the Ningunsaw and Unuk watersheds), December 2008 (including Map)**

**GAR Order: Ungulate Winter Range – Order #6-018 Moose (Nass TSA), September 17,
2014 (including Map)**

**GAR Order-Specified Area #6-282 Grizzly Bear (Nass TSA), October 20, 2014 (including
Map)**

ORDER TO ESTABLISH OBJECTIVES FOR A RECREATION SITE, RECREATION TRAIL OR INTERPRETIVE FOREST SITE

File: 16660-04
16660/20-6321

Dated: August 19, 2011

Notice is hereby given that, pursuant to Section 56 of the *Forest and Range Practices Act*, amended objectives for the following Ministry of Forests, Lands and Natural Resource Operations Trail are to be established effective August 19, 2011

Sterling Mountain Recreation Trail

Project File 16660/20-6321, Kalum Forest District, (established May 10, 1996).

Management Intent

The Sterling Mountain Recreation Trail is being managed for a semi primitive winter motorized recreational experience during the period of November 1 to June 30, with all motorized activities restricted from July 1 to October 31 annually (under Recreation Regulations), unless otherwise approved by the District Recreation Officer. The trail is used by both residents of the Terrace area and visitors to the area and provides opportunities for motorized winter recreational activities.

Objectives

The natural vegetation will be managed within boundaries of the established trail area.

Maintain opportunities for snowmobiling along the trail.

Original signed by

Jim Ladds
Regional Recreation Manager
Northern Interior Region
Recreation Sites and Trails Branch



ORDER TO ESTABLISH OBJECTIVES FOR A RECREATION SITE, RECREATION TRAIL OR INTERPRETIVE FOREST SITE



Ministry of
Forests

File: 16660-04

Dated: November 8, 1996

Pursuant to Section 6.3 of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites, recreation trails and interpretive forest sites have been established:

Glory Hole Recreation Site - Project File 900-0603, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Glory Hole recreation site for a roaded recreation experience. The coniferous vegetation feature will be retained within established site boundaries. Opportunities for swimming, picnicking, and canoeing will be available at this site. Gravel road access to the site will be maintained for two wheel drive vehicles year round, weather permitting.

Jigsaw Lake Recreation Site - Project File 900-3522, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Jigsaw Lake recreation site for a natural recreation experience. The lake shoreline, and coniferous vegetation features will be retained within established site boundaries. Opportunities for camping, picnicking, angling, boating and canoeing will be available at this site. Gravel road access to the site will be maintained for two wheel drive vehicles from May to the first of October, weather permitting.

Dragon Lake Recreation Site - Project File 900-0654, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Dragon Lake recreation site for a roaded recreation experience. The shoreline and high scenic values will be retained within established site boundaries. Opportunities for camping, picnicking, angling, boating, canoeing and swimming will be available at this site. Gravel road access to the site will be maintained for two wheel drive vehicles from May to the first of October, weather permitting.

Pine Lake Recreation Site - Project File 900-3525, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Pine Lake recreation site for a natural recreation experience. The shoreline, and coniferous features will be retained within established site boundaries. Opportunities for camping, picnicking, canoeing, angling and wildlife viewing will be available at this site. Rough gravel road access to the site will be maintained for two wheel drive vehicles from May to the first of October, weather permitting.

Weewanie Hotsprings Recreation Site - Project File 900-0813, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Weewanie Hotsprings recreation site for a semi-primitive motorized experience. The marine foreshore, thermal springs, and coniferous vegetation will be protected within established site boundaries. Opportunities for bathing, camping, picnicking, angling and boat mooring will be available at this site. Boat access to the site is available year round, weather permitting.

Mt. Elizabeth Recreation Trail - Project File 900-0604, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Mt. Elizabeth recreation trail for a semi-primitive non-motorized recreation experience. The alpine, active trail and coniferous vegetation features will be retained within 10 metres of the established trail perimeters. Opportunities for hiking, viewing and mountaineering will be available along this trail. Road access to the trailhead will be maintained for four wheel drive vehicles from May to the first of October, weather permitting.

Clearwater Lakes Recreation Trail - Project File 900-3506, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Onion Lake recreation trail for a natural recreation experience. The active trail, and coniferous vegetation features will be retained within 10 metres of the established trail perimeters. Opportunities for hiking, picnicking, snowshoeing and viewing will be available along this trail. Road access to the trailhead will be provided by Highway 37.

Maroon Mountain Recreation Trail - Project File 900-0627, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Maroon Mountain recreation trail for a semi-primitive non-motorized recreation experience. The active trail, alpine and coniferous vegetation features will be retained within 10 metres of the established trail perimeters. Opportunities for hiking and viewing will be available along this trail. Rough gravel road access to the trailhead will be maintained for two wheel drive vehicles from May to the first of October, weather permitting.

Pine Lake Recreation Trail - Project File 900-3505, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Pine Lake recreation trail for a natural recreation experience. The active trail, lake shoreline and coniferous vegetation will be retained within 10 metres of the established trail perimeters. Opportunities for hiking, angling, picnicking and wildlife viewing will be available along this trail. Rough gravel road access to the trailhead will be maintained for two wheel drive vehicles from May to the first of October, weather permitting.

Gunsight Peak Recreation Trail - Project File 900-0934, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Gunsight Peak Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline. Opportunities for hiking and viewing will be available along this trail. This trail is not yet fully developed.

Sterling Mountain Recreation Trail - Project File 900-6321, Kalum Forest District, (established May 10, 1996).

The objectives are to manage the Sterling Mountain Recreation Trail for appropriate semi-primitive motorized winter recreational activities from November 1 to June 30, with all motorized activities

restricted from July 1 to October 31. The active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline. Opportunities for snowmobiling will be available along the trail.

Original signed by

B. D. Downie, District Manager
Kalum Forest District

Dated: _____



ORDER TO ESTABLISH OBJECTIVES FOR A RECREATION SITE, RECREATION TRAIL OR INTERPRETIVE FOREST SITE



Ministry of
Forests

File: 16660-04

Notice is hereby given that, pursuant to Section 6 (3) of the *Forest Practices Code Of British Columbia Act*, objectives for the following Ministry of Forests recreation site and trails are to be established effective July 30, 1997.

Bonney Lake Recreation Site - Project 900-0622, Kalum Forest District, (established May 1, 1997).

The objectives are to manage the Bonney Lake Recreation Site for a roaded recreation experience. The lake shoreline and natural vegetation will be retained within site boundaries. Opportunities for camping, picnicking, angling, boating and canoeing will be available at the site.

Bonney Lake Portage Recreational Trails - Project 900-0623, Kalum Forest District, (established May 1, 1997).

The objectives are to manage the Bonney Lake Portage Recreation Trails for a semi-primitive non-motorized recreational experience. The active trails, lake shoreline and natural vegetation will be retained within ten meters on either side of the trail centerline. Opportunities for canoeing, hiking and angling will be available along the trails.

Red Top Recreational Trail - Project 900-0961, Kalum Forest District, (established May 1, 1997).

The objectives are to manage the Red Top Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within ten meters on either side of the trail centerline. Opportunities for hiking and viewing will be available along the trail.

West Lake Recreation Site - Project 900-6418, Kalum Forest District, (established May 1, 1997).

The objectives are to manage the West Lake Recreation Site for a roaded recreation experience. The lake shoreline and natural vegetation will be retained within site boundaries. Opportunities for camping, picnicking, angling, and canoeing will be available at the site.

Chist Creek Recreation Site - Project 900-6419, Kalum Forest District, (established May 1, 1997).

The objectives are to manage the Chist Creek Recreation Site for a roaded recreation experience. The exposed bedrock and natural vegetation will be retained within site boundaries. Opportunities for camping, picnicking, hiking and climbing will be available at the site.

Enso Recreation Site - Project 900-6420, Kalum Forest District, (established May 1, 1997).

The objectives are to manage the Enso Recreation Site for a roaded recreation experience. The river and creek shoreline and natural vegetation will be retained within site boundaries. Opportunities for camping, picnicking and angling will be available at the site.

Deception Lake Recreation Site - Project 900-6460, Kalum Forest District, (established May 1, 1997).

The objectives are to manage the Deception Lake Recreation Site for a roaded recreation experience. The lake shoreline and natural vegetation will be retained within site boundaries. Opportunities for camping, picnicking, angling and canoeing will be available at the site.

Original signed by

B.D. Downie, District Manager
Kalum Forest District

Dated:_____



ORDER TO ESTABLISH OBJECTIVES FOR A RECREATION SITE, RECREATION TRAIL OR INTERPRETIVE FOREST SITE



Ministry of
Forests

File 16660-04

Notice is hereby given that, pursuant to Section 6 (3) of the *Forest Practices Code Of British Columbia Act*, objectives for the following Ministry of Forests recreation trails are to be established effective July 6, 1998.

American Creek Recreation Trail - Project 900-0964, Kalum Forest District (established January 31, 1998)

The objectives are to manage the American Creek Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within ten metres on either side of the trail centreline. Opportunities for hiking and viewing will be available along the trail

Bornite Mountain Recreation Trail - Project 900-0530, Kalum Forest District (established January 31, 1998)

The objectives are to manage the Bornite Mountain Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within ten metres on either side of the trail centreline. Opportunities for hiking and viewing will be available along the trail.

Big Cedar Recreation Trail - Project 900-6459, Kalum Forest District (established January 31, 1998)

The objectives are to manage the Big Cedar Recreation Trail for appropriate semi-primitive motorized winter recreational activities from November 1 to June 30, with all motorized activities restricted from July 1 to October 31. The active trail and natural vegetation will be retained within ten metres on either side of the trail centreline. Opportunities for snowmobiling will be available along the trail.

Hai Lake Recreation Trail - Project 900-3549, Kalum Forest District (established January 31, 1998)

The objectives are to manage the Hai Lake Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within ten metres on either side of the trail centreline. Opportunities for hiking and viewing will be available along the trail.

Ore Mountain Recreation Trail - Project 900-0996, Kalum Forest District (established January 31, 1998)

The objectives are to manage the Ore Mountain Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within ten metres on either side of the trail centreline. Opportunities for hiking and viewing will be available along the trail.

Sleeping Beauty Recreation Trail - Project 900-0645, Kalum Forest District (established January 31, 1998)

The objectives are to manage the Sleeping Beauty Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within ten metres on either side of the trail centreline. Opportunities for hiking and viewing will be available along the trail.

Thornhill Mountain Recreation Trail - Project 900-0585, Kalum Forest District (established January 31, 1998)

The objectives are to manage the Thornhill Mountain Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within ten metres on either side of the trail centreline. Opportunities for hiking and viewing will be available along the trail.

Original signed by

B.D. Downie, District Manager
Kalum Forest District

Dated: _____



ORDER TO ESTABLISH OBJECTIVES FOR A RECREATION SITE, RECREATION TRAIL OR INTERPRETIVE FOREST SITE



Ministry of
Forests

File 16660-04

Notice is hereby given that, pursuant to Section 6 (3) of the *Forest Practices Code Of British Columbia Act*, objectives for the following Ministry of Forests recreation site and trails are to be established effective March 29, 1999.

Robinson Ridge Recreation Trail - Project 900-0992, Kalum Forest District, (established January 28, 1999).

The objectives are to manage the Robinson Ridge Recreation Trail for appropriate semi-primitive motorized winter recreational activities from November 1 to May 30, with all motorized activities restricted from June 1 to October 31. The active trail and natural vegetation will be retained within ten metres on either side of the trail centerline. Opportunities along the trail will include snowmobiling, hiking and viewing.

Kitimat River Recreation Site - Project 900-3521, Kalum Forest District, (established January 28, 1999).

The objectives are to manage the Kitimat River Recreation Site for a roaded recreation experience. The river shoreline and natural vegetation will be retained within site boundaries. Opportunities for camping, picnicking and angling will be available at the site.

Claque Mountain Recreation Trail - Project 900-6595, Kalum Forest District, (established January 28, 1999).

The objectives are to manage the Claque Mountain Recreation Trail for appropriate semi-primitive motorized winter recreational activities from November 1 to May 30, with all motorized activities restricted from June 1 to October 31. The active trail and natural vegetation will be retained within ten metres on either side of the trail centerline. Opportunities along the trail will include snowmobiling, hiking and viewing.

Robinson Lake Recreational Trail - Project 900-6596, Kalum Forest District, (established January 28, 1999).

The objectives are to manage the Robinson Lake Recreation Trail for a semi-primitive non-motorized recreational experience. The active trail and natural vegetation will be retained within ten meters on either side of the trail centerline. Opportunities for hiking and viewing will be available along the trail.

Original signed by

B.D. Downie, District Manager
Kalum Forest District

Dated: _____



**ORDER TO ESTABLISH OBJECTIVES FOR A
RECREATION SITE, RECREATION TRAIL OR
INTERPRETIVE FOREST SITE**



Ministry of
Forests

File 16660-04

Notice is hereby given that, pursuant to Section 6 (3) of the *Forest Practices Code Of British Columbia Act*, objectives for the following Ministry of Forests recreation site and trails are to be established effective August 16, 1999.

Red Sand Lake Interpretive Forest Site - Project 900-6449, Kalum Forest District, (May 21, 1999).

The objectives are to manage the Red Sand Lake Interpretive Forest Site for a roaded recreation experience. The shoreline and natural vegetation will be conserved within the site boundaries. Some small scale timber harvesting and silviculture practices will exist on the site as part of forest interpretation and education. Opportunities for camping, picnicking, hiking, canoeing, biking, and angling will be available at the site. Forest interpretation activities and education on local ecosystems and forest practices will be provided through brochures, self guided interpretive trails and signage.

Onion Lake Recreation Ski Trails - Project 900-6409, Kalum Forest District, (May 21, 1999)

In winter, when snow is on the ground, the objective is to manage the Onion Lake Recreation Ski Trails for a semi primitive non motorized recreation experience; opportunities for cross country skiing are available, no motorized use permitted, other than for track setting and trail grooming activities. During the summer, snow free season, the objectives is to manage the trail for a roaded resource recreation experience; opportunities for hiking and mountain biking are available. The trail will be maintained and the natural vegetation will be conserved within ten metres of the trail centerline.

Clearwater Lakes Recreation Site - Project 900-3506, Kalum Forest District, (May 21, 1999)

The objectives are to manage the Clearwater Lakes Recreation Site for a semi-primitive non-motorized recreation experience. Opportunities for hiking, tent camping, picnicking, and angling will be available at the site. The campsite and trail will be retained; the lake shoreline and natural vegetation will be conserved. Access is by non-motorized trail.

Original signed by

B.D. Downie, District Manager
Kalum Forest District

Dated: _____



December 30, 2004

**NOTICE – INDICATORS OF THE AMOUNT, DISTRIBUTION AND ATTRIBUTES OF
WILDLIFE HABITAT REQUIRED FOR THE SURVIVAL OF SPECIES AT RISK IN
THE KALUM FOREST DISTRICT**

This Notice is given under the authority of section 7(2) of the *Forest Planning and Practices Regulation* (B.C. Reg. 14/04) and 9(3) of the *Woodlot Licence Planning and Practices Regulation* (B.C. Reg. 21/04).

The following Notice includes indicators of the amount, distribution and attributes of wildlife habitat required for the survival of the species at risk outlined in Schedule 1.

Approved Wildlife Habitat Areas are not included in the indicators of amount, distribution and attributes for each of the species outlined in Schedule 1. As per section 7(3) of the *Forest Planning and Practices Regulation*, forest tenure holders are exempt from the obligation to specify a result or strategy in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation*, for approved Wildlife Habitat Areas.

This Notice applies to the Kalum Forest District.

Schedule 1

1) Marbled Murrelet (*Brachyramphus marmoratus*)

Amount:

1. An amount equal to the total amount of currently suitable nesting habitat in the non-contributing landbase. Government policy for determining the amount of suitable nesting habitat is provided in the species account for Marbled Murrelet in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004);
2. An amount of suitable Marbled Murrelet nesting habitat within Old Growth Management Areas consistent with the direction from landscape unit planning; and
3. An amount of suitable nesting habitat to a maximum net mature timber harvesting landbase impact of 1000 ha.

Distribution:

1. The amount of habitat referenced above must be distributed to provide:
 - areas of suitable habitat of the size, spatial distribution and connectivity identified in the species account for Marbled Murrelet in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).

- The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Marbled Murrelet in the *Accounts and Measures for Managing Identified Wildlife* in the Identified Wildlife Management Strategy Version 2004.

Attributes:

**Species:
Marbled
murrelet**

Attribute	Characteristics
Size	Maintain a balanced range of patch sizes including a mix of large (>200 ha), medium (50-200 ha) and small (<50 ha) patches within managed forests. The area should include vertical canopy complexity,
Tree Features	Large branches or branches with deformities, and presence of mossy platforms
Tree Species	It is unlikely that Marbled murrelets select particular tree species, however certain species are more likely to provide large horizontal platforms suitable for nesting. This includes yellow cedar, western hemlock, Sitka spruce, Douglas-fir and western red cedar. Less likely species include mountain hemlock and amabilis fir.
Nesting Habitat Features	Suitable nesting habitat includes old seral stage coniferous forests, providing large trees with platforms (limbs or deformities >15cm diameter) with variable canopy structure and small gaps in the canopy. Readily nest on steep slopes but is not essential if forest canopies are non-uniform.
Tree Size	Most nesting trees in BC are >200 yr. Nest trees are typically >40 m tall and nest heights are typically >30 m. Nest limbs range in size from 15-74 cm diameter.
Structural Stage	7: old forest (>250 yr - age class 9, but 8 is acceptable if older forest is not present and the age class 8 provides platform limbs and other nest attributes).
Additional information	Table 3 of the IWMS Version 2004 species account for Marbled Murrelet provides detailed information about the habitat features that are associated with most likely, moderately likely and least likely habitat within each of the Marbled Murrelet Conservation regions.

2) Coastal Tailed Frog (*Ascaphus truei*)

Amount:

- 2,544 ha not exceeding an impact to the mature timber harvesting landbase of 675 ha.

Distribution:

- The amount of habitat referenced above must be distributed to provide:
 - areas of suitable habitat of the size, spatial distribution and connectivity identified in the species account for Coastal Tailed Frog in the *Accounts and Measures for*

Managing Identified Wildlife (Identified Wildlife Management Strategy Version 2004).

- The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Coastal Tailed Frog in the *Accounts and Measures for Managing Identified Wildlife* in the Identified Wildlife Management Strategy Version 2004.

Attributes:

Species:
Coastal Tailed Frog

Attribute	Characteristics
Size	Approximately 20 ha (depending on number and length of suitable stream reaches). Larger areas may be appropriate in watersheds with unstable terrain (class 4-5). Areas should include at least two streams or stream reaches (i.e., S4 to S6) with previous detections of tailed frogs. The area should include a 30 m core area buffered by a 20m management zone on both sides of occupied stream reaches.
Habitat Attributes	Tailed frog aquatic habitats are generally characterised by year round flow, non fish bearing (S4-S6), intermediate gradient (>2.5%), coarse substrates (>6.4 cm), stable channel beds and forest cover (generally associated with structural stage S6 or S7). Retain 100% of forest cover within the core area. Within the management zone maintain 70% basal area with appropriate structure to maintain riparian forest, important structural elements (e.g., coarse wood debris,) water quality and temperature (5 to 18 degrees), and naturally dispersed water flows.
Elevation	From sea level to 2140 m.

3) Grizzly Bear (*Ursus arctos*)

Amount:

- Within TFL 1 an amount not exceeding a 3 to 5% timber supply impact for critical grizzly bear habitat;
- Within TFL 41 an amount not exceeding a 2 to 4% timber supply impact for critical grizzly bear habitat; and
- Within the Kalum TSA an amount not exceeding a 3 to 5% timber supply impact for critical grizzly bear habitat.

Distribution:

- The amount of habitat referenced above must be distributed to provide:
 - areas of suitable foraging and security habitat of the size and spatial distribution identified in the species account for Grizzly Bear in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).
- The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Grizzly Bear in the *Accounts and*

Measures for Managing Identified Wildlife in the Identified Wildlife Management Strategy Version 2004, consistent with Grizzly Bear Management Areas as identified in the Kalum LRMP and considering the attributes identified below.

Attributes

1) Attributes of critical Grizzly Bear habitat:

Species:
Grizzly Bear

Attribute	Characteristics
Size	1-500 ha, depending on the area of use, extent of seasonal habitat and buffer size required.
Critical patch habitats	Critical patch habitats include herb dominated avalanche tracks with adjacent forest, non-forested fens, herbaceous riparian meadow/wetland complexes and seepage sites, skunk cabbage swamps, sub alpine parkland meadows, whitebark pine stands, salmon fishing areas and old burns or other successional areas dominated by <i>Vaccinium</i> (blueberry) species. Non-forested critical habitats include a core area and buffer of forested cover. Forested critical habitats are not buffered.
Denning Habitat Features	Hibernating habitats tend to be high elevation areas that are sloped with dry, stable soil conditions that remain frozen throughout the winter. Dens are typically located on steep north-facing slopes, areas where vegetation will stabilize the den roof and where snow will accumulate for insulation. Dens are rarely re-used but Grizzly bears will often return to the same vicinity to dig new dens.
Foraging Habitat Features	Habitat selection is strongly influenced by meeting nutritional requirements, access to mates, thermal cover (i.e., dens), social interactions and the presence and activities of people. Habitat requirements vary greatly as some bears are more transient while others are more resident. Both residents and transients select patches or complexes of habitats within landscapes.
Structural Stage	Generally, foraging is more abundant in non-forested sites, sites with partial forest or sites with many tree gaps in older forest. Closed forest sites near quality habitat may be used for security and day bedding areas. Many or all structural stages can be used seasonally or for specific needs and as such, forage type is not necessarily tied to one particular structural stage.
Elevation	All elevations from sea level estuaries to high alpine meadows and talus slopes.



ORDER – AMENDMENT TO KALUM MOUNTAIN GOAT UNGULATE
WINTER RANGE U-6-001

This order is given under the authority of sections 9(1), 9(2) and 12(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004).

The Regional Executive Director of the Ministry of Forests, Lands and Natural Resource Operations orders that:

5. “pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan are hereby exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for the winter survival of Mountain Goat in the Kalum TSA, TFL 41 and TFL 1; and”, is replaced with:

“pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan are hereby exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for the winter survival of Mountain Goat in the Kalum TSA, Cascadia TSA, Pacific TSA, TFL 41 and TFL 1.”

6. “the general wildlife measures outlined in schedule 1 do not apply for the purposes of exploration, development and production activities when these activities have been authorized for the purpose of subsurface resource exploration, development or production by the Mineral Tenure Act, the Coal Act, the Mines Act, the Petroleum and Natural Gas Act, the Pipeline Act or the Geothermal Resources Act.”, be deleted.

Definitions:

Include an additional definition of material or adverse disturbance:

- c) “material or adverse disturbance” means inducing stress to mountain goats to the point of either temporary winter range abandonment, diminishment of individual health and fitness, or diminishment of population well being.

General Wildlife Measure 3:

“Primary forest activities that occur within 500 meters horizontal distance of a mountain goat winter range will not result in material or adverse disturbance to goats. Operational activities that have not been exempted will take place during the period starting June 15 and ending October 31”, is replaced with:



“Primary forest activities that occur within 500 metres horizontal distance of a mountain goat winter range, or within 1000 metres horizontal distance of a specified canyon/escarpment mountain goat winter range, will not result in material or adverse disturbance to goats. Primary forest activities will take place during the period starting June 15 and ending October 31”.

General Wildlife Measure 4:

“Access roads and structures required for primary forest activities within 500 meters of mountain goat winter range will be constructed in a manner that will facilitate effective deactivation. All roads or structures that have not been exempted will be deactivated within one year following forest harvesting activities”, is replaced with:

“Access roads and structures required for primary forest activities within 500 metres horizontal distance of mountain goat winter range, or within 1000 metres horizontal distance of a specified canyon/escarpment mountain goat winter range, will be constructed in a manner that will facilitate deactivation. All roads or structures that have not been exempted will be deactivated within one year following forest harvesting activities”.

General Wildlife Measure 5:

“All helicopter logging activities conducted within 2000 meters line of sight of a mountain goat winter range that have not been exempted will take place during the period starting June 15 and ending October 31”, is replaced with:

“All helicopter logging activities conducted within 2000 metres line of sight of a mountain goat winter range will take place during the period starting June 15 and ending October 31.”

Appendix 1:

Clarity of when the Order does not apply is added to be consistent with other Orders:

1. As per section 2(2) of the *Government Actions Regulation*, the order entitled “ORDER –SA 6-001 does not apply in respect of:
 - a. any of the following entered into before the order takes effect:
 - i. a cutting permit;
 - ii. a road permit;
 - iii. a timber sale licence that does not provide for cutting permits;
 - iv. a forestry licence to cut issued by a timber sales manager under section 47.6(3) of the *Forest Act*;



- v. subject to subsection (3), a minor tenure.
 - b. a declared area;
 - c. areas described in section 196(1) of the *FRPA*; and
 - d. areas referred to in section 110 of the *FPPR*.
- 4. "Primary forest activities should avoid road or trail construction within 500 meters horizontal distance of a mountain goat winter range", is replaced with:

"Primary forest activities should avoid road or trail construction within 500 metres horizontal distance of a mountain goat winter range, or within 1000 metres horizontal distance of a specified canyon/escarpment mountain goat winter range."
- 5. "A person conducting forestry activities may consider seeking an exemption from the requirement to comply with the applicable General Wildlife Measures. Authority to consider an exemption is provided in section 92(1) of the *Forest Planning and Practices Regulation*," is replaced with:

"A person conducting forestry activities may consider seeking an exemption from the requirement to comply with the applicable General Wildlife Measures. Authority to consider an exemption is provided in section 92(1) of the *Forest Planning and Practices Regulation* and section 79(1) of the *Woodlot Licenses Planning and Practices Regulation*."
- 5 h) "The construction of semi-permanent mainline roads within 500 meters horizontal distance of a mountain goat winter range when it can be demonstrated that no other road location options exist to access timber beyond a specific mountain goat winter range", is replaced with:

"The construction of semi-permanent mainline roads within 500 metres horizontal distance of a mountain goat winter range , or within 1000 metres horizontal distance of a canyon/escarpment mountain goat winter range, when it can be demonstrated that no other road location options exist to access timber beyond a specific mountain goat winter range."
- 7. "It is recommended that existing roads and trails within 500 meters of a mountain goat winter range be assessed for disturbance risk to mountain goat populations", is replaced with:

"It is recommended that existing roads and trails within 500 metres horizontal distance of a mountain goat winter range, or within 1000 metres horizontal distance of a specified canyon/escarpment mountain goat winter range, be assessed for disturbance risk to mountain goat populations."



8. "...place mountain goat populations and their habitat at risk", is replaced with:

"...place mountain goat populations and their habitat at risk.", and

"silvicultural" is replaced with "silvicultural"

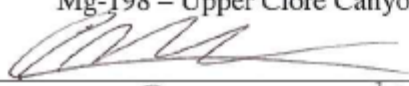
Section 9. was added to define locations of canyon/escarpment dwelling goats:

9. The following goat winter range polygons are considered canyon/escarpment dwelling for purposes of this Order:

Mg-004, 007, 008 & 009 – Kiteen Watershed

Mg-017 – Near Dragon Lake

Mg-198 – Upper Clore Canyon


Signed this 17 day of sept, 2014

Eamon O'Donoghue, Regional Executive Director, Skeena Region, Ministry of Forests,
Lands and Natural Resource Operations



ORDER – UNGULATE WINTER RANGE (mountain goat) #U-6-002
Nass Timber Supply Area + Upper Portion of Ningunsaw & Unuk Watersheds

This order is given under the authority of sections 9(2) and 12(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004).

The Deputy Minister of Environment orders that:

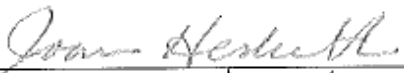
1. the ungulate winter range shown in the map set out in the attached Schedule A (#U-6-002) is established;
2. the ungulate winter range in the attached Schedule A is established for mountain goat (*Oreamnos americanus*);
3. the general wildlife measures outlined in Schedule 1 are established for the ungulate winter range in the attached Schedule A;
4. the specified areas outlined in general wildlife measure 4, 5 and 6, Schedule 1, are established;
5. where there is any discrepancy between the ungulate winter range boundaries as shown in the attached Schedule A and the GIS file *tuwra_bc*, the boundaries as detailed in the GIS file will take precedent. The centre point of the line on the map denoting the ungulate winter range is what establishes the boundary; and,
6. pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan are hereby exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for the winter survival of mountain goat in the Nass, Ningunsaw, Unuk and Bear River watersheds covered by the map set out in the attached Schedule A (#U-6-002).

Schedule 1 – General Wildlife Measures

In this schedule:

- a) “primary forest activity” is defined as in the *Forest Planning and Practices Regulation*,
- b) “access structure” is defined as in the *Forest Planning and Practices Regulation*,
- c) “mountain goat winter range” are those winter ranges established by way of this Order,
- d) “deactivate” or “deactivation” refers to either partial or complete treatment of roads and trails with the intent to prevent, as much as possible, motor vehicle access while taking into account site specific operating constraints; where practicable this activity will include right-of-way revegetation activities to manage long-term access, and
- e) “reforestation” means the re-establishment of trees on denuded forest land by natural or artificial means, such as planting and seeding.

1. Timber harvesting and road construction must not occur within the mountain goat winter range except where provided for by GWM 2.
2. GWM 1 does not apply where guyline tiebacks are required to facilitate timber harvesting.
3. Trees felled in accordance with GWM 2 or section 2(3) of the *Forest Planning and Practices Regulation* that fall within the mountain goat winter range must be retained on-site.
4. Primary forest activities that occur within 500 meters horizontal distance of a mountain goat winter range must not result in material or adverse disturbance to goats. Primary forest activities must take place during the period starting June 15 and ending October 31.
5. Access structures required for primary forest activities within 500 meters of mountain goat winter range, and within 1000 meters of specified canyon/escarpment mountain goat winter range, must be constructed in a manner that will facilitate effective deactivation. All access structures must be deactivated within one year following completion of reforestation.
6. All helicopter logging activities conducted within 2000 meters line of sight of a mountain goat winter range must take place during the period starting June 15 and ending October 31.


Signed this 12 day of December, 2008
Joan Hesketh, Deputy Minister
Ministry of Environment

Appendix 1 – General Information

The following information is intended to provide background information and support to the legal order establishing U-6-002. This appendix is not part of the legal order.

1. As per section 2(2) of the *Government Actions Regulation*, the order entitled “ORDER – Ungulate Winter Range #U-6-002” does not apply in respect of:
 - a. any of the following entered into before the order takes effect:
 - i. a cutting permit;
 - ii. a road permit;
 - iii. a timber sale license that does not provide for cutting permits;
 - iv. a forestry license to cut issued by a timber sales manager under section 47.6(3) of the *Forest Act*;
 - v. a minor tenure.
 - b. a declared area;
 - c. areas described in section 196(1) of the *Forest and Range Practices Act*; and
 - d. areas referred to in section 110 of the *Forest Planning and Practices Regulation*.

In these instances the requirement to comply with the order and the general wildlife measures does not apply.

2. Authority to consider an exemption from these general wildlife measures is provided in Section 92(1) of the *Forest Planning and Practices Regulation*. An exemption may be provided if the Minister’s delegate is satisfied that the intent of the general wildlife measure will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the Minister’s delegate (Regional Manager – Ministry of Environment, for the Region that the UWR is located) with a rationale describing the nature of the problem and options to integrate UWR conservation with proposed forest practices. A spatially explicit strategy for conservation of mountain goat winter range is recommended as part of the submission. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 14 days of arrival. Incomplete packages will be returned to the proponent for re-submission.

Exemptions may be considered for:

- a) The construction of roads or trails in a mountain goat winter range, including the harvest of associated right-of-way timber, where it can be demonstrated that no other access options exist.

These roads and trails will be:

- i. designed, as much as possible, to prevent all motorized vehicle access outside of the June 15th to October 31st timing window, and
 - ii. will be deactivated (consistent with the definition for “deactivation” in the order) as soon as practicable, and no later than one year, following primary forest activities.
- b) The construction of semi-permanent mainline roads within 500 meters horizontal distance of a mountain goat winter range when it can be demonstrated that no other road location options exist to access timber beyond a specific mountain goat winter range.

These roads and trails will be:

- i. designed, as much as possible, to prevent all motorized vehicle access outside of the June 15th to October 31st timing window, and
 - ii. will be deactivated (consistent with the definition for “deactivation” in the order) as soon as practicable, and no later than one year, following primary forest activities.
- c) Singular, site-specific extensions may be granted before the beginning of the timing window in June where it can be demonstrated by a qualified professional biologist that, due to exceptional circumstance(s), there is no risk to goats.

Appendix 2 – Supporting Information

Note: this appendix is not part of the legal Order for U-6-002. It is intended to provide guidance/best management practices for meeting the general wildlife measures addressed in the order.

1. Retention of forest cover in mountain goat winter range is required to deliver habitat attributes critical to the survival of this species. These attributes include patches of mature/old forest in areas adjacent to escape terrain that provide winter forage production, snow interception, and thermal/security cover.
2. Improvements in scientific and biological information may lead to amendment(s) consistent with the *Government Actions Regulation* of the mountain goat winter range measures including:
 - a) the addition of new, or deletion of existing, mountain goat winter range polygon units,
 - b) the adjustment of mountain goat winter range unit boundaries including their associated buffer sizes, and
 - c) modification of a specific measure to address operational constraints while protecting mountain goat populations and their habitat.

3. Primary forest activities should avoid road or trail construction within 500 meters horizontal distance of a mountain goat winter range. Where no other practicable access options exist, roads and trails should utilize strategies to protect goats and their habitat from disturbance including:
 - a) placing adequate timber buffers around mountain goat winter range boundaries,
 - b) locating a road or trail no closer to mountain goat winter range than made necessary by operational site constraints, or
 - c) other suitable techniques.
4. It is recommended that where forests within mountain goat winter range have been disturbed either by forest fire or prior logging, and where habitat is limited, these units be silviculturally treated to accelerate their restoration and rehabilitation to achieve mature and old forest habitat attributes (snow interception, security and thermal cover, and forage production). Treatments should be based on the recommendations of a qualified professional forester and qualified professional biologist.
5. It is recommended that existing roads and trails within 500 meters of a mountain goat winter range, and within 1000 meters of canyon dwelling goat winter range meters be assessed for disturbance risk to mountain goat populations. Where assessment determines that access to mountain goat winter range on such roads and trails has increased risk to goats, plans for the deactivation of these roads should be developed and implemented. Where the deactivation of specific existing roads conflicts with operational activities, the licensee and the Minister's designate should work cooperatively to develop strategies which address both operational objectives and minimize disturbance to mountain goats without constraining operational activities. This may include access restrictions on permanent roads through the development and implementation of an official Access Management Plan.
6. It is recommended that historic and planned (FRPA S. 196(1)) primary forest activities within mountain goat winter ranges be assessed to determine if these activities have, or will, place mountain goat populations and their habitat at risk. Where an assessment determines that winter range is, or will be, limited relative to historic levels, the Minister's designate and the licensee(s) should work cooperatively to develop short- and long-term strategies aimed at offsetting and re-establishing winter range shortfalls (e.g. temporarily reserving mature or old forest reserves, silvicultural treatments [see item 5 above], and others as deemed appropriate). Where necessary, strategies should include the establishment and implementation of spatially explicit plans.
7. It is recommended that extra due diligence is required in proximity to canyon and escarpment winter ranges since the habitat model and aerial validation work does not adequately capture foraging habitat in proximity to cliffs within these habitat types. However, the majority of foraging habitat should be captured within the winter range boundary given that the 500 meter primary forest activity exclusion zone associated with canyon and escarpment winter ranges has been incorporated into the winter range boundary.



ORDER – Ungulate Winter Range
6-009

Moose –Kalum TSA, Cascadia TSA, Pacific TSA, TFL 1 and TFL 41.

This order is given under the authority of sections 9(1), 9(2), and 12(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004) (GAR).

1. The Regional Executive Director, Skeena region, of Forests, Lands and Natural Resource Operations, Skeena Region, being satisfied that
 - i. the following area contains habitat that is necessary to meet the habitat requirements for moose (*Alces alces*); and
 - ii. the habitat requires special management that is not otherwise provided for under GAR or another enactment;

orders that:

- a) the area shown in the map set out in the attached Schedule A (U-6-009) and contained in the Ungulate Winter Range (UWR) spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_SP) are established as ungulate winter range U-6-009 for moose. The centre point of the line on the attached Schedule A is what establishes the UWR boundary; and
- b) if there is a discrepancy between the areas shown in the map set out in the attached Schedule A and the UWR spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.W WCP_UNGULATE_WINTER_RANGE_SP), the areas as detailed in the UWR spatial layer will take precedent; and
- c) pursuant to section 7(3) of the *Forest Planning and Practices Regulation* (FPPR), the person(s) required to prepare a forest stewardship plan are hereby exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* (FPPR) for moose in the portion of the Kalum TSA, Cascadia TSA, Pacific TSA, TFL 1 & 41 covered by this Order.

2. The Regional Executive Director of Forests, Lands and Natural Resource Operations, Skeena Region, being satisfied that
 - i. the general wildlife measures (GWMs) described below are necessary to protect or conserve moose and moose habitat and
 - ii. GAR or another enactment does not otherwise provide for that protection or conservation;

orders that:

- a) the GWMs outlined in Schedule 1 are established for UWR U-6-009; and
- b) the GWM 8 outlined in Schedule 1 is applied to the area specified in that GWM.

Schedule 1 – General Wildlife Measures

In this schedule:

- a) Words and expressions not defined in this order have the meaning given to them in the Forest and Range Practices Act (FRPA) and the regulations made there under, unless context indicates otherwise.
- b) **Regeneration delay** is defined as in Ministry of Forests and Range Glossary of Forestry Terms in British Columbia March 2008: The period of time between harvesting and the date at which an area is occupied by a specified minimum number of acceptable well-spaced trees.
- c) **Moisture Regime** (subhygric to subhydric) : refer to Field Manual for Describing Terrestrial Ecosystems.
- d) The minimum size for a silvicultural treatable unit is:
 - One hectare for pure subhygric to subhydric sites;
 - Two hectares of noncontiguous subhygric to subhydric sites within ecosystem complexes where the individual sites are greater than 0.25 ha and such sites comprise 20% or more of the ecosystem complex area.
- e) The minimum size for a willow or red-osier dogwood complex is:
 - One hectare for pure willow and/or red-osier dogwood sites;
 - Two hectares of noncontiguous willow and/or red-osier dogwood sites within ecosystem complexes where the individual sites are greater than 0.25 ha and such sites comprise 20% or more of the ecosystem complex area.
- f) **Thermal Cover** is defined as canopy cover that moderates air temperature which results in cooling during the summer and a reduction of wind chill in the winter.
- g) **Security Cover** is defined as sufficient vegetation cover and/or terrain features that prevent displacement or disturbance behavior in moose, despite adjacent activities or predator movement that might otherwise elicit these behaviours.
- h) **Mainline Road** is an artery road providing access to a watershed or a given geographic area. A mainline road is usually a long-term permanent road that may be used continuously or intermittently.
- i) **Deactivated** refers to either partial or complete treatment of roads and trails with the intent to deter motor vehicle access, while taking into account site specific operating constraints.
- j) **Motor Vehicle** means a device in, on or by which a person or thing is being or may be transported or drawn, and which is designed to be self-propelled, and includes an ATV or snowmobile, but does not include:
 - (a) a device designed to be moved by human, animal or wind power,

- (b) a device designed to be used exclusively on stationary rails or stationary tracks, or
 - (c) a boat propelled by motorized power.
- k) **Moose Winter Range Management Units** are defined in the spatial file contained in the Ungulate Winter Range (UWR) spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_SP), under the field name MWR_MU, identified as being the Upper Skeena, Copper, Nass, Kitsumkalum, Mid Skeena and Kitimat moose management units.
1. No timber harvesting is permitted within willow and red-osier dogwood complexes within the portion of the Kalum SRMP shown in the map set out in the attached Schedule A (U-6-009).
 2. Less than 20% of the area of any given cutblock shall be more than 100 metres away from adjacent mature forest cover for snow interception.
 3. Maintain, enhance or restore moose forage production, post-timber harvest, on all subhygric to subhydric sites that are large enough to be considered a silvicultural treatable unit.
 4. Security cover within or adjacent to cut blocks must be maintained and at least 80% of the security cover shall be separated by no greater than 200 metres.
 5. Retain existing security cover directly adjacent to subhygric to subhydric sites that are large enough to be considered a silvicultural treatable unit that contain willow and red-osier dogwood as the main shrub species.
 6. Retain greater than 30% of the area in each moose winter range management unit as mature + old forest for snow interception and thermal cover with distribution weighted to willow and red-osier dogwood forage area adjacency.
 7. Variances to GWM 6. are permitted as follows:
 - (a) Kitimat moose winter range management unit: allow variance to no less than 20% mature + old forest while working towards the targeted management objective of >30%;
 - (b) Mid-Skeena moose winter range management: allow variance to no less than 28% mature + old forest while working towards the targeted management objective of >30%; and
 - (c) for all moose winter range management units, and to ensure no timber supply impact due to the targeted management objective of >30% mature + old forest: variance is acceptable but shall be limited to no more than is necessary to ensure no timber supply impact due to the target.

8. All forest development roads, excluding mainlines, within 500 metres of a moose winter range must be deactivated following achievement of regeneration delay or within 1 year following harvest completion date by cutting permit area.
9. All forest development roads, excluding mainlines, within moose winter range must be deactivated following achievement of regeneration delay or within 1 year following harvest completion date by cutting permit area.
10. Variance of GWMs 1-9 are permitted under a moose winter range plan prepared by a qualified registered professional and reviewed jointly by the province of British Columbia and respective First Nations.



Signed this 22nd day of April, 2015

Anthony Pesklevits, Acting Regional Executive Director
Ministry of Forests, Lands and Natural Resource Operations
Skeena Region

Appendix 1 – General Information

The following information is intended to provide background information and support to the legal order establishing UWR 6-009. This appendix is not part of the legal order.

1. As per section 2(2) of the *Government Actions Regulation*, the order entitled “ORDER – Ungulate Winter Range # 6-009” does not apply in respect of:
 - a. any of the following entered into before the order takes effect:
 - i. a cutting permit;
 - ii. a road permit;
 - iii. a timber sale licence that does not provide for cutting permits;
 - iv. a forestry licence to cut issued by a timber sales manager under section 47.6(3) of the *Forest Act*;
 - v. subject to subsection (3), a minor tenure.
 - b. a declared area;
 - c. areas described in section 196(1) of the FRPA; and
 - d. areas referred to in section 110 of the FPPR.

In these instances the requirement to comply with the order and the general wildlife measures does not apply.

2. Authority to consider an exemption from these general wildlife measures is provided in section 92(1) of the *Forest Planning and Practices Regulation*, section 79(1) of the *Woodlot Licenses Planning and Practices Regulation* and section 36(3) of the *Range Planning and Practices Regulation*. An exemption may be provided if the Minister’s delegate is satisfied that the intent of the general wildlife measure will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the Minister’s delegate (Director, Resource Management – Ministry of Forests, Lands and Natural Resource Operations), with a rationale describing the nature of the problem and options to integrate UWR conservation with proposed forest and/or range practices. A spatially explicit strategy for conservation of moose winter range habitat will assist in timely consideration of the matter when submitted to the Minister’s delegate, and will inform the conditions, if any, of the exemption that may be granted. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 14 days of arrival. Incomplete packages will be returned to the proponent for re-submission.

3. Improvements in scientific and biological information, including field assessments completed by qualified professionals, may lead to amendment(s) consistent with the *Government Actions Regulation* of moose UWR measures including:
 - a. the addition of new, or deletion of existing moose UWR polygon units,

- b. the adjustment of moose winter range unit boundaries, and
 - c. modification of a specific measure.
- 4. For cut blocks that fall under section 196 (1) of FRPA or S. 14(4) of FPPR (declared area), a meeting and or site visit should take place to discuss the overlap and develop suitable mitigation measures where practicable.
- 5. Within identified moose UWR polygons, harvest using silviculture systems, block configurations, patch sizing and patch distribution that will provide forage, visual screening, thermal and security cover, and snow interception while integrating timber and silvicultural management objectives.
- 6. Emphasis for thermal cover, snow interception and security cover management within UWR polygons is adjacent to forage areas such as willow and red-osier dogwood complexes. A forested buffer of 50 to 100 m wide is recommended, depending on topography. It is also recommended that forest types be retained adjacent to forage areas.
- 7. Moose forage production can be facilitated post timber harvest by promoting gap openings through reduced stocking standards, cluster planting, spacing and pruning at the silvicultural treatment unit level.
- 8. Moose winter range management plans should be prepared for winter ranges that are subject to forest development, where funding is available. These plans should include a monitoring component to ensure adaptive management can correct any errors, should they be found, in moose winter range placement or the management regime. The intent of moose winter range plans is to spatially identify areas where forage production and security cover are to be emphasized along with thermoregulation consideration during summer use. Limiting road development, the amount of active roads and access will also be components of moose winter range plans. Preparation of moose winter range plans is anticipated to be a partnership arrangement between forest licensee and the Ministry of Forests, Lands and Natural Resource Operations. Moose winter range plans will integrate into existing work such as the Skeena Islands Project.
- 9. Establish moose forage production guidelines within a moose winter range plan that are based on ecological parameters such as site series or plant communities. Depending on site classification the following are options for consideration: (1) maintain the native mixed deciduous-conifer stand profile; (2) reduce the density of conifer stocked; (3) concentrate varied spacing of conifers on higher dry ground; (4) allow willow and dogwood regeneration on lower wet ground; (5) thin dense alder stands to encourage willow and dogwood growth; (6) prune a percentage of old woody willows and dogwoods that are more than 3 meters tall to encourage new growth, giving preference to the use of manual treatments rather than herbicides for vegetation control; and, (7) where possible, use brushing treatments to enhance moose winter forage.

10. Moose winter range management plans should address both the risk of disturbance and methods for limiting access to moose winter ranges during their wintering period (November 1 to May 1).
11. An exemption from GWM 8 or 9 may be granted if the intent of road deactivation can be achieved through access restrictions. Access restrictions include attempt to prevent access by 4WD and off-road vehicles, and legislative authorities for vehicle closure.
12. A mainline, for purposes of this Order, includes main roads and major branch roads. It may be defined and/or described as a road that:
 - is the primary road in a valley-bottom or at the lowest-elevation practicable that provides access through order 4 and larger watersheds, or large landscapes where the terrain is rolling plateau and not defined valleys;
 - is defined and constructed (grade, alignment, width, surfacing and drainage) primarily for long-term efficient transportation of logs and equipment, not as a road intended for yarding, skidding, or loading of logs;
 - is used continuously or frequently throughout the full rotation of the forest (through time) and inactivity for primary forest operations is generally weeks or months, not years;
 - is subject to regular maintenance so that road deactivation is not required to protect and maintain the integrity of the road prism, drainage structures, and the adjacent ecological resources; and
 - may have extended periods (several years) of inactivity, planned for operational or wildlife conservation purposes, requiring temporary deactivation or access control.
13. Within a moose winter range, primary forest activities to focus within a short time frame, followed by a long phase of inactivity to reduce access related impacts to wintering moose.
14. Within the Skeena Islands Complex, co-locate moose thermal cover in areas that emphasize large conifer protection, rare plant communities and Wildlife Habitat Management Areas.
15. With respect to the transition strategy (GWM 7), it is the agreed upon intent with forest licensee to achieve a 30% or greater mature + old forest seral stage distribution for the Kitimat and Mid-Skeena moose winter range management units as soon as it is possible without impacting timber supply as per standard timber supply analysis.

Kalum LRMP direction for moose winter range also provides best management practice guidance as summarized below:

1.0 Within primary moose winter range:

- 1.1 The forest management focus of the slope adjacent to the floodplain is to provide for security cover.
- 1.2 Thermal cover retention on the adjacent forested slope will be managed for in the absence of large conifers on the floodplain. This management will generally occur within the immediate forested slope except where significant forage exists on such slopes.
- 1.3 Adjacent forested slopes within moose winter range will have a forage management emphasis when the site series (subhygric to hydric) that produce deciduous browse species (willow - *Salix spp.*, dogwood – *Cornus stolonifera*, cottonwood – *Populus trichocarpa*) become the predominant (>50%) site series from a stand level perspective (e.g. cutblock or overview mapping perspective at 1:20 000 scale).
- 1.4 Incorporate moose winter ranges in the design and application of forest connectivity.
- 1.5 Retain willow and dogwood browse, particularly along island and floodplain channels.
- 1.6 Prescribe forestry operations to address the risk of salmonberry (*Rubus spectabilis*) encroachment on site associations that could support red-osier dogwood or willow.
- 1.7 Retain security and thermal cover (i.e. conifers) in proximity to useable forage areas appropriate to the size of the habitat unit as defined in the moose winter range plan.
- 1.8 Retain a proportion of mature and old growth conifer stands with canopy structures which will trap snow, and provide bedding sites particularly adjacent to foraging areas identified in moose winter range plans.
- 1.9 Retain a percentage of large spruce trees within deciduous leading stands for thermal cover and bedding microsites.
- 1.10 In regenerating areas and plantations where security and thermal cover is lacking, identify conifer stands or large patches suitable for future cover and manage for cover attributes that mimic natural forests in terms of visual screening and large well formed branchy vets capable of snow interception and thermoregulation.

2.0 Within secondary moose winter range:

- 2.1 Encourage rotational forest stand development (i.e. harvest at early stand maturity) on sites conducive to both early seral forage and conifer production.
- 2.2 Promote the duration of early seral stage conditions on prime forage sites (subhygric to hydric) that produce deciduous browse species (willow, dogwood, cottonwood) where such sites predominate (>50%) from a stand level perspective (e.g. cutblock or overview mapping perspective at 1:20 000 scale). Stand spacing, pruning, reduced conifer stocking standards, and varied conifer spacing will assist in promoting the duration of early seral stage conditions.
- 2.3 Provide that adequate thermal cover and screening are available to a maximum range of 75 to 125 metres within and to prime forage areas (i.e. mature to old stands or large wildlife tree patches to be in the range of 150 to 250 metres apart).

- 2.4 Preference will be given to ground based vegetation management.
- 2.5 Maintain the natural deciduous/conifer mix of tree species and shrubs as expected for early seral conditions in prime forage potential sites.
- 2.6 Allow for natural establishment of willows along decommissioned road right-of-ways.

3.0 Within both primary and secondary moose winter range:

- 3.1 Limit road development and recreational use within moose winter ranges. Where road avoidance is not practicable, use measures to maintain security, such as maintaining dense coniferous visual screens, deactivating roads before November, building temporary roads or conducting road rehabilitation.
- 3.2 Where practicable, minimize moose disturbance in winter by using measures such as: geographically focusing roads and operations within a given winter range, restricted access and timing of activities.
- 3.3 Where practicable, retain, enhance or plant visual screens to obscure the winter ranges from high use transportation corridors.
- 3.4 Leave a proportion of large old growth trees for moose predator-response behaviour.

Appendix 2: Moose Habitat Attributes

Compiled by Len Vanderstar, R.P. Bio, R.P.F., Ecosystems, Skeena Region, MFLNRO, from surveys and published species accounts.

Life Requisite	Habitat Attribute and Description
Forage Habitat	<p>Structural Stage</p> <ul style="list-style-type: none"> • Early seral stages (3 and 4: herb-shrub and pole-sapling) usually provide ideal foraging conditions, supporting abundant deciduous browse year-round within secondary winter range. • Valley bottom fluvial complexes that define primary winter range are noted for providing abundant forage, by virtue of containing many pocketed or larger seasonally wet open areas, regardless of structural stage. • Aquatic habitats provide moose with aquatic forage during spring and summer. Buckbean (<i>Menyanthes trifoliata</i>), pondweed (<i>Potamogeton spp.</i>), and sedges are the predominant aquatic forage species. <p>Shrub Cover</p> <ul style="list-style-type: none"> • Shrub-dominated habitats that occupy 15 to 30% of a defined area (e.g. moose winter range) generally provide sufficient forage in both growing and winter seasons, provided that height requirements (below) are met. <p>Shrub Height</p> <ul style="list-style-type: none"> • 1 to 5 m for growing season (also assists in providing visual screening); >2.5 m for winter forage. <p>Shrub Species Composition</p> <ul style="list-style-type: none"> • Important woody browse includes willow, red-osier dogwood, high-bush cranberry, western red cedar and young subalpine fir; black twinberry, elderberry, mountain ash, aspen and cottonwood are also utilized depending on availability. <p>Aspect</p> <ul style="list-style-type: none"> • Site aspect is generally not important. However, south- and west-facing slopes have reduced snow depths and are first to be snow-free in spring. This provides moose access to shrub cover, early spring herbaceous emergents and green-up forage. <p>Landscape Position</p> <ul style="list-style-type: none"> • Valley bottom floodplains and other fertile drainages/areas have high forage productivity and diversity, particularly for early spring green-up forage.

Life Requisite	Habitat Attribute and Description
Thermal Cover	<p>Basal Area</p> <ul style="list-style-type: none"> • 10% measured by pre-harvest mature & old forest cover. <p>Species Composition</p> <ul style="list-style-type: none"> • Thermal cover species should be composed of large canopy, somewhat open grown conifer species, notably very mature and old-growth spruce and subalpine fir.
Snow Interception	<p>Canopy Cover</p> <ul style="list-style-type: none"> • In areas of high snowfall, moose movement is facilitated by forests with crown closure of exceeding 50%, preferably >65% (Moose Wildlife Habitat Decision Aid, JEM-Vol. 11, No. 3). Snow interception cover is three dimensional and is optimized through both horizontal and vertical (canopy depth) structural development. <p>Area Coverage</p> <ul style="list-style-type: none"> • Literature recommends more than 50% of winter range to have favourable snow interception canopy cover in high snow depth wetter biogeoclimatic zones.
Security Cover	<p>Visual Screening</p> <p>Stem density that obscures 90% of the moose at 60 m provides optimum visual screening. A measureable criteria would be when a 2 meter x 2 meter dark surface area has only 0.4 m² visible, keeping in mind broadleaf leafless winter conditions.</p> <ul style="list-style-type: none"> • A diverse understory that obscures a moose at close range also provides effective security cover. • Gullied terrain may offer security opportunities, and could be considered good security habitat. <p>Structural Stage</p> <ul style="list-style-type: none"> • Suitable security cover could occur in structural stages 3, 4, 5, 6 and 7; however, the best security cover will likely occur in structural stages 3, 4 and 5 (5 being young forests).
Calving	<p>Landscape Position</p> <ul style="list-style-type: none"> • Forested patches with good security cover, surrounded by extensive wetland complexes, forested peninsulas (water or wetland), and islands, are primary calving sites. <p>Adjacency</p> <ul style="list-style-type: none"> • Isolation or seclusion of calving sites is critical.
Rutting Areas	<p>Landscape Position</p> <ul style="list-style-type: none"> • Optimum rutting areas include subalpine meadow complexes, wetland complexes, extensive floodplains, early to mid-seral natural wildfire burned areas, and deciduous stands adjacent to high forage areas. <p>Adjacency</p> <ul style="list-style-type: none"> • Isolation or seclusion of rutting areas ensures minimal disturbance to moose activity, and thus more successful mating behaviour.



ORDER – Ungulate Winter Range

#U-6-018

Moose – Nass TSA

This order is given under the authority of sections 9(1), 9 (2) and 12 (1) of the *Government Actions Regulation* (B.C. Reg. 582/04).

The Regional Executive Director of Forests, Lands and Natural Resource Operations orders that:

1. the ungulate winter ranges (UWR) shown in the maps set out in the attached Schedule A (UWR U-6-018) are established for moose (*Alces alces*);
2. the general wildlife measures (GWMs) outlined in Schedule 1 are established for UWR U-6-018 and boundaries contained in the GIS file *tuwr_bc*;
3. the specified areas outlined in general wildlife measure 8 are established;
4. where there is a discrepancy between the UWR boundaries as shown in the attached Schedule A and the GIS file *tuwr_bc*, the boundaries as detailed in the GIS file will take precedent. The centre point of the line on the map denoting the UWR is what establishes the boundary;

Schedule 1 – General Wildlife Measures

In this schedule:

- a) Words and expressions not defined in this order have the meaning given to them in the *Forest and Range Practices Act* (FRPA) and the regulations made there under, unless otherwise defined in the order.
- b) “regeneration delay” is defined as in Ministry of Forests and Range Glossary of Forestry Terms in British Columbia (March 2008) as “*the period of time between harvesting and the date at which an area is occupied by a specified minimum number of acceptable well-spaced trees*”.
- c) Moisture Regime –refer to *Field Manual for Describing Terrestrial Ecosystems* (BC Ministry of Forests and Range and BC Ministry of Environment, Research Branch) for definitions of subhygric to subhydric.
- d) The minimum size for a silvicultural treatable unit is:
 - One hectare for pure subhygric to subhydric sites;
 - Two hectares of noncontiguous subhygric to subhydric sites within ecosystem complexes where the individual sites are greater than 0.25 ha and such sites comprise 20% or more of the ecosystem complex area.

- e) Thermal Cover is defined as canopy cover that moderates air temperature which results in cooling during the summer and a reduction of wind chill in the winter.
 - f) Security Cover is defined as sufficient vegetation cover and/or terrain features that prevent displacement or disturbance behaviour in moose, despite adjacent activities or predator movement that might otherwise elicit these behaviours.
 - g) The designation, identification and definition of mainline roads must be considered in context of the applicable circumstances in consultation among qualified resource professionals, inclusive of a government biologist responsible for habitat protection.
 - h) Deactivated refers to either partial or complete treatment of roads and trails with the intent to prevent motor vehicle access, while taking into account site specific operating constraints.
1. No timber harvesting is permitted within moderate, high and very high value mapped forage areas as depicted on the maps set out in the attached Schedule A.
 2. Less than 20% of the area of any given cutblock shall be more than 100 m away from adjacent mature forest cover (for the purposes of security cover).
 3. Maintain, enhance or restore moose forage production, post timber harvest, on 100% of subhygric to subhydric sites large enough to be considered a silvicultural treatable unit.
 4. Retain 10% of mature forest as thermal cover within 100m of mapped forage areas as depicted in colour outline or colour shading shown on the maps set out in the attached Schedule A.
 5. Security cover within or adjacent to cut blocks must be provided and at least 80% of the security cover shall be separated from other areas of security cover by no greater than 200 meters.
 6. All security cover shall be retained directly adjacent to moderate, high and very high value mapped forage areas as depicted on the maps set out in the attached Schedule A.
 7. Retain >30% mature + old forest canopy for snow interception in each winter range polygon outside of mapped forage areas.
 8. All roads, excluding mainline roads, within 500 m of moose winter range must be deactivated following achievement of regeneration delay or within 1 year of cessation of industrial activities.
 9. All roads within moose winter range must be deactivated following achievement of regeneration delay or within 1 year of cessation of industrial activities.



Signed this 17 day of Sept, 2014

Eamon O'Donoghue, Regional Executive Director
Ministry of Forests, Lands and Natural Resource Operations, Skeena Region

Appendix 1 – General Information

The following information is intended to provide background information and support to the legal order establishing UWR U-6-018. This appendix is not part of the legal order.

1. As per section 2(2) of the *Government Actions Regulation*, the order entitled “ORDER – Ungulate Winter Range # U-6-018” does not apply in respect of:
 - a. any of the following entered into before the order takes effect:
 - i. a cutting permit;
 - ii. a road permit;
 - iii. a timber sale licence that does not provide for cutting permits;
 - iv. a forestry licence to cut issued by a timber sales manager under section 47.6(3) of the *Forest Act*;
 - v. subject to subsection (3), a minor tenure.
 - b. a declared area;
 - c. areas described in section 196(1) of the FRPA; and
 - d. areas referred to in section 110 of the FPPR.

In these instances the requirement to comply with the order and the general wildlife measures does not apply.

2. Authority to consider an exemption from these general wildlife measures is provided in section 92(1) of the FPPR, section 79(1) of the *Woodlot Licenses Planning and Practices Regulation* and section 36(3) of the *Range Planning and Practices Regulation*. An exemption may be provided if the Minister’s delegate is satisfied that the intent of the general wildlife measure will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the Minister’s delegate (Regional Executive Director – MFLNRO, for the Region that the UWR is located) with a rationale describing the nature of the problem and options to integrate UWR conservation with proposed forest and/or range practices. A spatially explicit strategy for conservation of moose winter range habitat will assist in timely consideration of the matter when submitted to the Minister’s delegate, and will inform the conditions, if any, of the exemption that may be granted. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 14 days of arrival. Incomplete packages will be returned to the proponent for re-submission.

3. Improvements in scientific and biological information, including field assessments completed by qualified professionals, may lead to amendment(s) consistent with the *Government Actions Regulation* of moose UWR measures including:
 - a. the addition of new, or deletion of existing moose winter range polygon units,
 - b. the adjustment of moose winter range unit boundaries, and
 - c. modification of a specific measure.

4. For cut blocks that fall under section 196 (1) of FRPA or S. 14(4) of FPPR (declared area), a meeting and or site visit should take place to discuss the overlap and develop suitable mitigation measures where practicable.
5. Within identified moose winter range, harvest using silviculture systems, block configurations, patch sizing and patch distribution that will provide forage, visual screening, thermal and security cover, and snow interception while integrating timber and silvicultural management objectives.
6. Emphasis for thermal cover, snow interception and security cover management is adjacent to mapped forage areas. A forested buffer of 50 to 100 m wide is recommended, depending on topography. It is also recommended that forest types be retained adjacent to moderate, high and very high value mapped forage areas.
7. Moose forage production can be facilitated post timber harvest by promoting gap openings through reduced stocking standards, cluster planting, spacing and pruning at the silvicultural treatment unit level.
8. Moose winter range management plans should be prepared for winter ranges that are subject to forest development, where funding is available. These plans should include a monitoring component to ensure adaptive management can correct any errors, should they be found, in moose winter range placement or the management regime.
9. An exemption from GWM 8 or 9 may be granted if the intent of road deactivation can be achieved through access restrictions. Access restrictions include attempt to prevent access by 4WD and off-road vehicles, and legislative authorities for vehicle closure.
10. A mainline, for purposes of this Order, includes main roads and major branch roads, and may be defined/described as a road that is the primary valley bottom or lowest practicable elevation road that provides access through order 4 and larger watersheds, or large landscapes where the terrain is rolling plateau and not defined valleys; is defined and constructed (grade, alignment, width, surfacing and drainage) primarily for long-term efficient transportation of logs and equipment, not as a road intended for yarding, skidding, or loading of logs; is used continuously or frequently throughout the full rotation of the forest (through time) and inactivity for primary forest operations is generally weeks or months, not years; is subject to regular maintenance so that road deactivation is not required to protect and maintain the integrity of the road prism, drainage structures, and the adjacent ecological resources; may have extended periods (several years) of inactivity, planned for operational or wildlife conservation purposes, requiring temporary deactivation or access control.
11. Within a moose winter range, primary forest activities to focus within a short time frame, followed by a long phase of inactivity to reduce access related impacts to wintering moose.
12. Moose winter range management plans should address both the risk of disturbance and methods for limiting access to moose winter ranges during their wintering period (November 1 to May 1).

Appendix 2: Moose Habitat Attributes

Compiled by Len Vanderstar, R.P. Bio, R.P.F., MFLNRO: Skeena Region, from surveys and published species accounts.

Life Requisite	Habitat Attribute and Description
Forage Habitat	<p>Structural Stage</p> <ul style="list-style-type: none"> • Early seral stages (3 and 4: herb-shrub and pole-sapling) usually provide ideal foraging conditions, supporting abundant deciduous browse year-round within secondary winter range. • Valley bottom fluvial complexes that define primary winter range are noted for providing abundant forage, by virtue of containing many pocketed or larger seasonally wet open areas, regardless of structural stage. • Aquatic habitats provide moose with aquatic forage during spring and summer which is important for lactating females. Buckbean (<i>Menyanthes trifoliata</i>), pondweed (<i>Potamogeton spp.</i>), and sedges are the predominant aquatic/wetland forage species noted in the Nass watershed. <p>Shrub Cover</p> <ul style="list-style-type: none"> • Shrub-dominated habitats that occupy 15 to 30% of a defined area (e.g. moose winter range) generally provide sufficient forage in both growing and winter seasons, provided that height requirements (below) are met. <p>Shrub Height</p> <ul style="list-style-type: none"> • 1 to 5 m for growing season (also assists in providing visual screening); >2.5 m for winter forage. <p>Shrub Species Composition</p> <ul style="list-style-type: none"> • Important woody browse includes willow, red-osier dogwood, high-bush cranberry and young subalpine fir within the Nass South SRMP area; black twinberry, elderberry, mountain ash, aspen and cottonwood are also utilized depending on availability. <p>Aspect</p> <ul style="list-style-type: none"> • Site aspect is generally not important. However, south- and west-facing slopes have reduced snow depths and are first to be snow-free in spring. This provides moose access to shrub cover, early spring herbaceous emergents and green-up forage. <p>Landscape Position</p> <ul style="list-style-type: none"> • Valley bottom floodplains and other fertile drainages/areas have high forage productivity and diversity, particularly for early spring green-up forage.

Life Requisite	Habitat Attribute and Description
Thermal Cover	<p>Basal Area</p> <ul style="list-style-type: none"> 10% measured by pre-harvest mature & old forest cover. <p>Species Composition</p> <ul style="list-style-type: none"> Thermal cover species should be composed of large canopy, somewhat open grown conifer species, notably very mature and old-growth spruce and subalpine fir.
Snow Interception	<p>Canopy Cover</p> <ul style="list-style-type: none"> In areas of high snowfall, moose movement is facilitated by forests with crown closure exceeding 50%, preferably >65% (Moose Wildlife Habitat Decision Aid, JEM-Vol. 11, No.3). Snow interception cover is three dimensional and is optimized through both horizontal and vertical (canopy depth) structural development. <p>Area Coverage</p> <ul style="list-style-type: none"> Recommend more than 50% of winter range to have favourable snow interception canopy cover in high snow depth, wetter biogeoclimatic zones.
Security Cover	<p>Visual Screening</p> <ul style="list-style-type: none"> Stem density that obscures 90% of the moose at 60 m provides optimum visual screening, thus enhancing the animals' sense of security. A measureable criteria would be when a 2 meter x 2 meter dark surface area has only 0.4 m² visible, keeping in mind broadleaf leafless winter conditions. A diverse understory that obscures a moose at close range also provides effective security cover. Gullied terrain may offer security opportunities, and could be considered good security habitat. <p>Structural Stage</p> <ul style="list-style-type: none"> Suitable security cover could occur in structural stages 3, 4, 5, 6 and 7; however, the best security cover will likely occur in structural stages 3, 4 and 5 (5 being young forests).
Calving	<p>Landscape Position</p> <ul style="list-style-type: none"> Forested patches with good security cover, surrounded by extensive wetland complexes, forested peninsulas (water or wetland), and islands, are primary calving sites.

Life Requisite	Habitat Attribute and Description
	<p>Adjacency</p> <ul style="list-style-type: none"> • Isolation or seclusion of calving sites is critical.
<p>Rutting Areas</p>	<p>Landscape Position</p> <ul style="list-style-type: none"> • Optimum rutting areas include subalpine meadow complexes, wetland complexes, extensive floodplains, early to mid-seral natural wildfire burned areas, and deciduous stands adjacent to high forage areas. <p>Adjacency</p> <ul style="list-style-type: none"> • Isolation or seclusion of rutting areas ensures minimal disturbance to moose activity, and thus more successful mating behaviour.



ORDER – Specified Area # 6-282

Grizzly Bear – Nass Timber Supply Area

This order is given under the authority of sections 9(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004) (GAR).

1. The Regional Executive Director of Forests, Lands and Natural Resource Operations - Skeena region, being satisfied that

- i. the general wildlife measures (GWMs) described below are necessary to protect or conserve grizzly bear; and
- ii. GAR or another enactment does not otherwise provide for that protection or conservation;

orders that

- a) the GWMs outlined in Schedule 1 are established for SA6-282, for grizzly bear;
- b) the specified area shown in the map set out in the attached Schedule A (6-282) and contained in the wildlife habitat area (WHA) spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_WILDLIFE_HABITAT_AREA_POLY) are established as a Specified Area (6-282) for grizzly bear. The centre point of the line on the attached Schedule A is what establishes the specified area boundary;
- c) if there is a discrepancy between the areas shown in the map set out in the attached Schedule A and the WHA spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_WILDLIFE_HABITAT_AREA_POLY), the areas as detailed in the WHA spatial layer will take precedent; and

Schedule 1 – General Wildlife Measures (GWM)

Definitions

- a) Words and expressions not defined in this order have the meaning given to them in the *Forest and Range Practices Act (FRPA)* and the regulations made there under, unless otherwise defined in the order.
 - b) Thermal Cover is defined as canopy cover that moderates air temperature which results in cooling during the summer and a reduction of wind chill in the winter.
 - c) Security Cover is defined as sufficient vegetation cover and/or terrain features that prevent displacement or disturbance behaviour in grizzly bear, despite adjacent activities or predator movement that might otherwise elicit these behaviours.
 - d) Permanent roads are defined as either a main forestry road that provide primary access through a valley or landscape and are never deactivated, or branch roads that provide access to two or more cutblocks, that may or may not be de-activated, and that are intended to be used in the future for forestry-related activities.
1. In order to provide functional thermal or security cover, 100% of the forested area of each specified area (SA) polygon must be retained in a mature and old-growth condition with allowance to 90% to address operational flexibility where necessary. Harvesting should be located along the edge of the SA polygon and should only occur for the following purposes:
 - access
 - operational safety considerations
 - to minimize impacts on adjacent environmental values.
 2. GWM 1 does not apply where:
 - a. the SA polygon boundary has been inaccurately mapped with respect to topographic features and causes an overlap with an adjacent primary forest activity; and making the small change will not affect the intent or integrity of the SA polygon; or
 - b. a minor mapping error has occurred between a cutblock, road, trail or landing at final design stage and a SA polygon boundary, or
 - c. points a) and/or b) above are agreed to by the decision-maker prior to the commencement of primary forest activities.
 3. Do not use pesticides, except as provided in GWM 4.
 4. GWM 3 does not apply for the application of herbicides to control for noxious weeds and invasive plants.
 5. Ensure that, where ever practicable, 150 meters is the minimum distance between permanent roads and the mapped Specified Area.


Signed this 20 day of Oct, 2014

Eamon O'Donoghue, Regional Executive Director, Skeena Region
Ministry of Forests, Lands and Natural Resource Operations

Appendix 1 – General Information

This appendix is intended to provide background information and support to the legal order establishing Specified Area #6-282 (SA 6-282). This appendix does not form part of the legal order.

1. As per section 2(2) of the *Government Actions Regulation*, the order entitled “ORDER – SA 6-282 does not apply in respect of:
 - a. any of the following entered into before the order takes effect:
 - i. a cutting permit;
 - ii. a road permit;
 - iii. a timber sale licence that does not provide for cutting permits;
 - iv. a forestry licence to cut issued by a timber sales manager under section 47.6(3) of the *Forest Act*;
 - v. subject to subsection (3), a minor tenure.
 - b. a declared area;
 - c. areas described in section 196(1) of the *FRPA*; and
 - d. areas referred to in section 110 of the *FPPR*.

In these instances the requirement to comply with the order and the general wildlife measures does not apply.

2. Authority to consider an exemption from these general wildlife measures is provided in section 92(1) of the *Forest Planning and Practices Regulation*, section 79(1) of the *Woodlot Licenses Planning and Practices Regulation* and section 36(3) of the *Range Planning and Practices Regulation*. An exemption may be provided if the decision-maker is satisfied that the intent of the general wildlife measure will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the decision-maker for the region in which the SA is located, with a rationale describing the nature of the problem and options to integrate SA conservation with proposed forest and/or range practices. A spatially explicit strategy for conservation of grizzly bear wildlife habitat will assist in timely consideration of the matter when submitted and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 14 days. Incomplete packages will be returned to the proponent for re-submission.

3. Where an exemption is provided to the requirements of GWM 1 the delegated decision maker may consider adding the following conditions to the approval of the exemption:
 - Design roads or trails, as much as possible, to prevent all motorized vehicle access throughout the snow free season.

- Deactivate roads or trails as soon as practicable, and no later than one year, following primary forest activities.

Exemptions to GWM 1 may be considered when it can be demonstrated that no practicable road location options exist to access timber beyond a SA polygon or for the harvest of associated right-of-way timber.

4. Improvements in scientific and biological information, including field assessments completed by qualified professionals, may lead to amendment(s) consistent with the *Government Actions Regulation* of grizzly bear SA measures including:
 - a. the addition of new, or deletion of existing grizzly bear polygon units,
 - b. the adjustment of grizzly bear unit boundaries including their associated buffer sizes, and
 - c. modification of a specific measure to address operational constraints while maintaining grizzly bear populations and their habitat.
5. Primary forest activities should consider the seasonal use by grizzly bears within the SA, and where practicable, conduct operations outside of high seasonal use to mitigate human/bear interactions.
6. While it is recognized that within a SA polygon there is generally a 50 metre buffer around the core habitats to supply thermal and security cover as well as other attributes, strategies should be put in place to minimize wind throw to protect the integrity of the SA polygon. Strategies should include, but are not limited to wind firm treatments, increasing buffer protection, and other techniques used in Riparian Management Areas proven to minimize wind throw.
7. Overhead aircraft activity should attempt to keep to a minimum of 500 vertical metres above grizzly bear SA polygons in the spring, summer and fall, when practicable.
8. Where practicable from a harvest block layout and forest operations perspective, major grizzly bear trails leading to or connecting grizzly bear SAs, as noted by bite and marked trees, shall have their integrity maintained in terms of existing natural stand structure.
9. Maintenance of the quality and effectiveness of grizzly bear forage supply outside of the SAs is directed by the Nass South SRMP.
10. The intent of GWM 1 reflects the agreement associated with the Nass South SRMP to accommodate operational flexibility where necessary.
12. The intent of GWM 2 is to facilitate SA polygon boundary adjustment without having to go through an amendment process where a SA polygon boundary has been either: a) inaccurately mapped (e.g. when the intent was to follow a creek or road and the boundary inadvertently extends slightly beyond the creek or road), or b) when unintentional overlap

occurs with a cutblock, road, trail or landing at final design stage that becomes evident when comparing map scales (e.g. 1:20000 vs 1:5000). In almost all instances the amount of overlap is anticipated to affect a small area (<0.5 ha). The appropriate government agency should be notified of boundary adjustments specific to GWM 2 for tracking purposes. Spatial file submission would be most appropriate. Boundary adjustments meeting the conditions identified in GWM 2 will be periodically reviewed by government and the SA polygon boundary officially amended under the *Government Actions Regulation*. It remains the proponent's responsibility to keep records of each occurrence. Records must be made available to a government official upon request.

13. It is the expectation that no timber felling within the high value forage area will occur. The objective is to protect this core habitat while providing suitable forested buffer for screening and thermal cover immediately adjacent to the high value forage area.

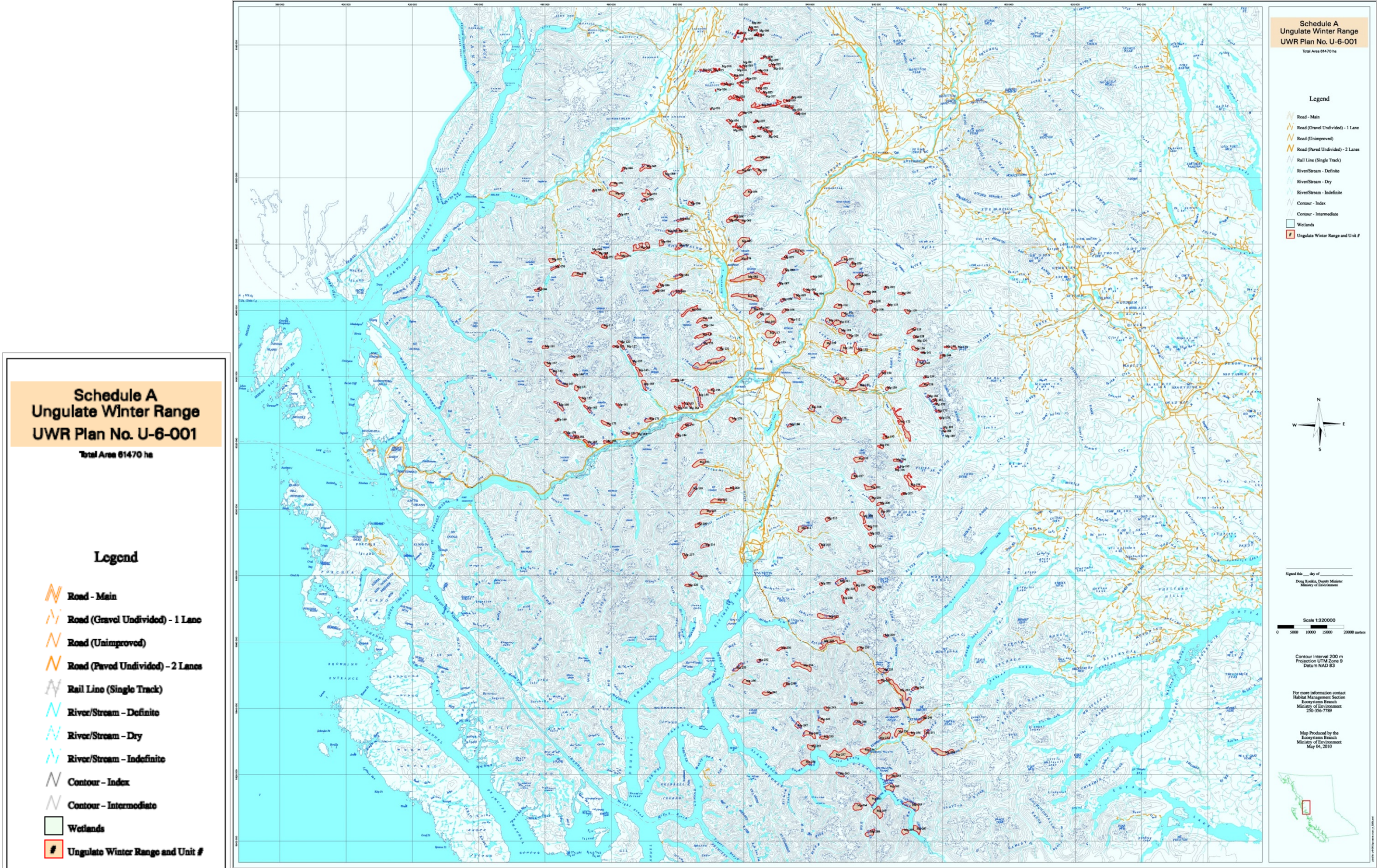


Figure 31. Ungulate Winter Range U-6-001 for Mountain Goat

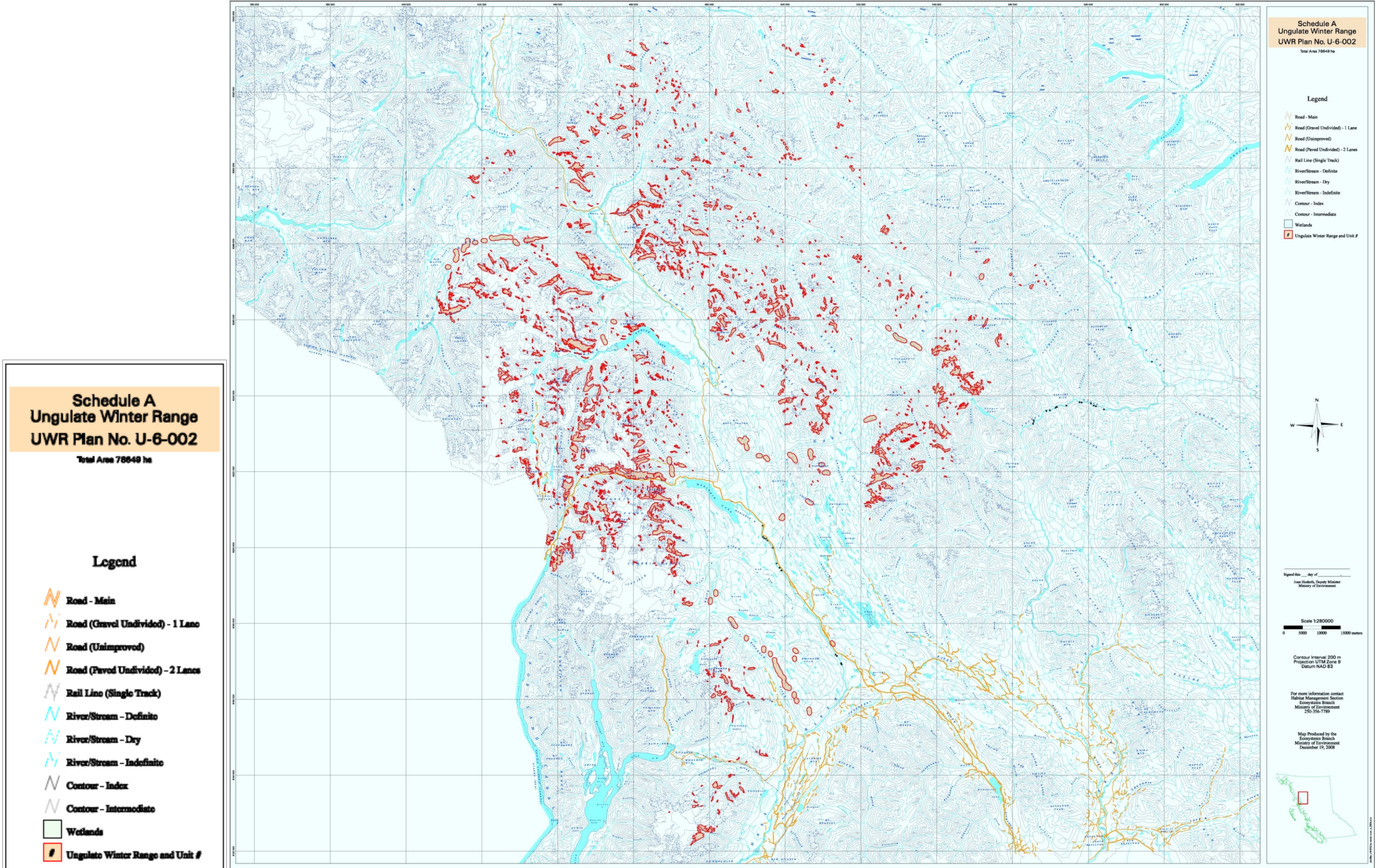


Figure 32. Ungulate Winter Range U-6-002 for Mountain Goat

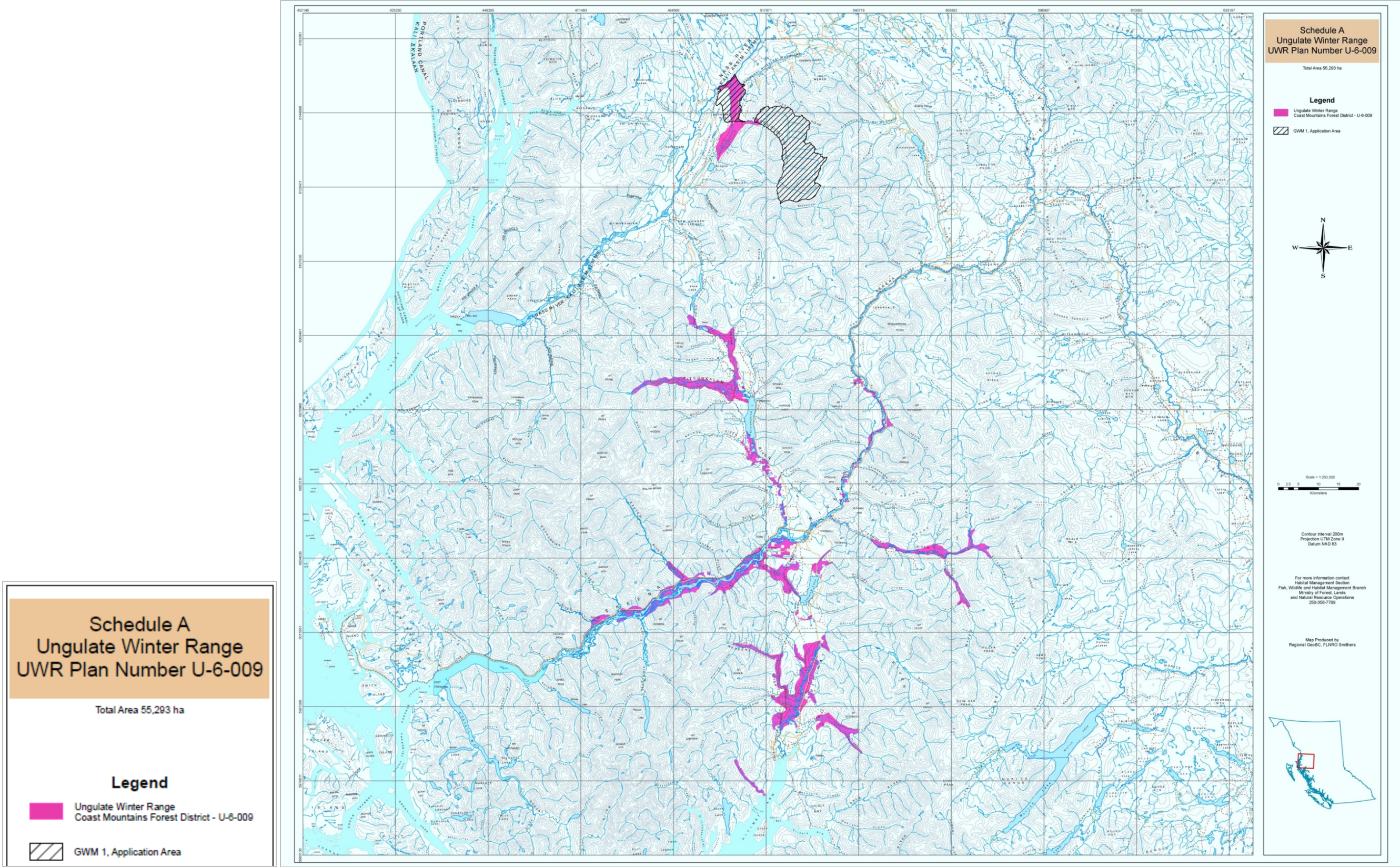


Figure 33. Ungulate Winter Range U-6-009 for Moose

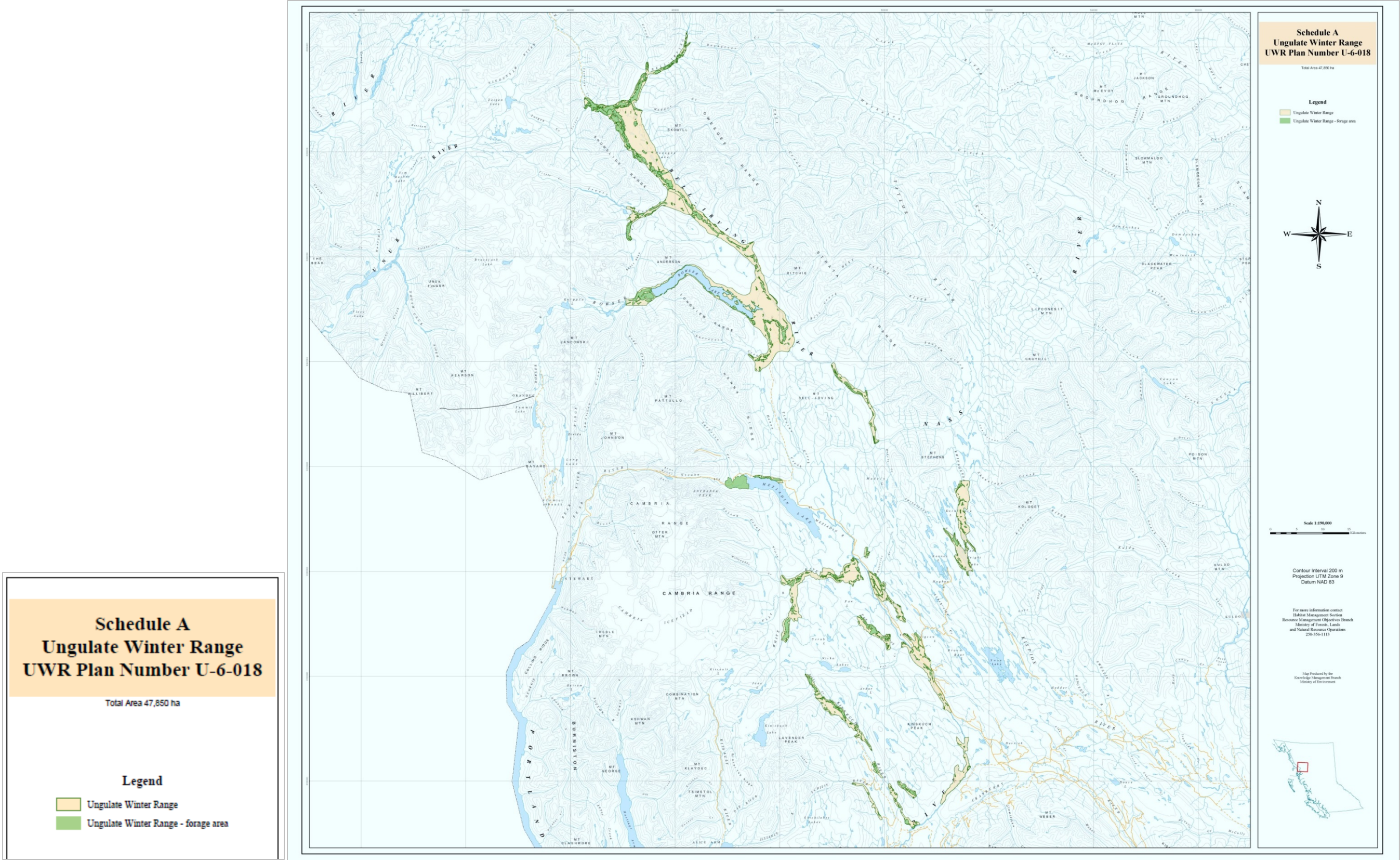


Figure 34. Ungulate Winter Range U-6-018 for Moose

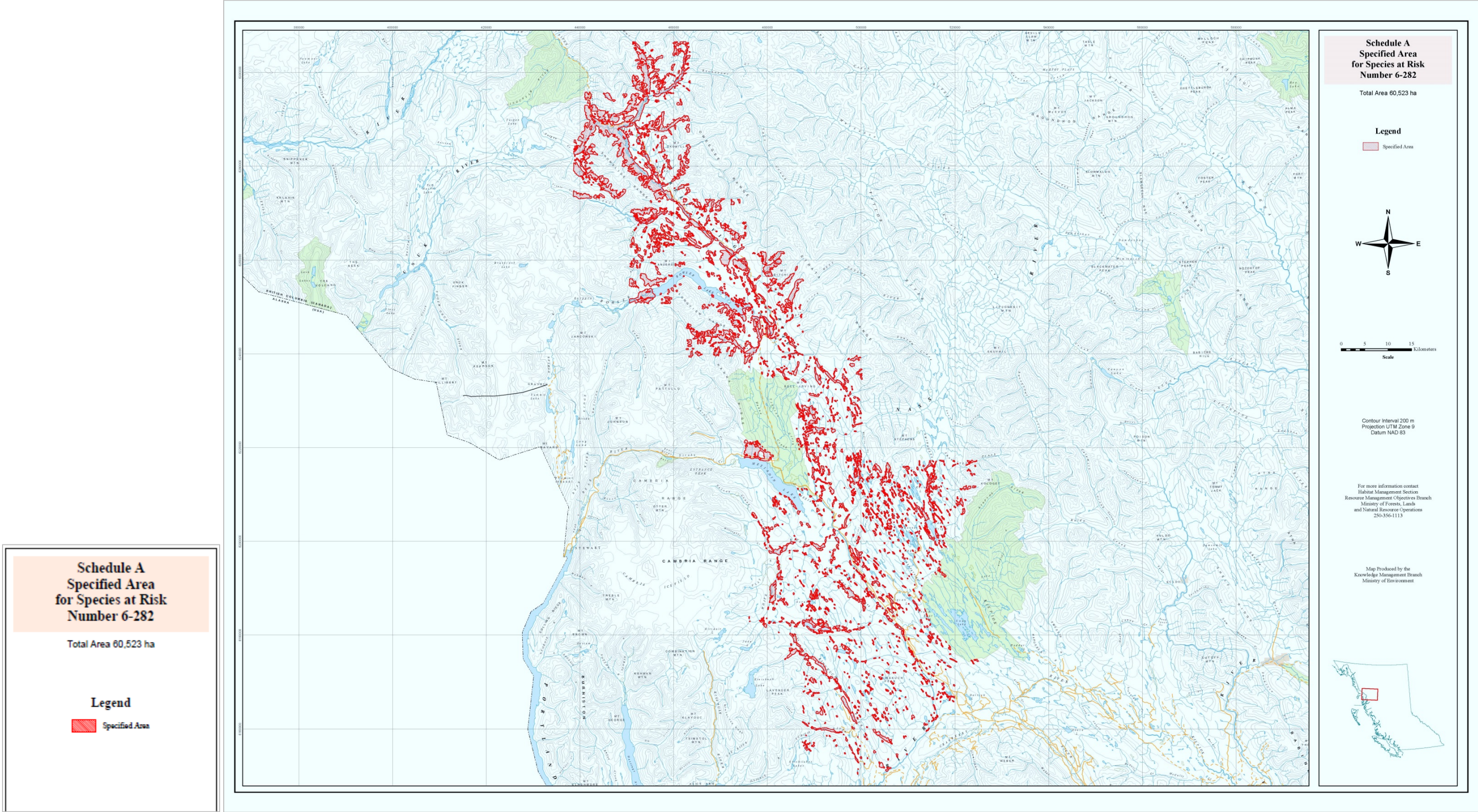


Figure 35. Specified Area U-6-282 for Grizzly Bear



ORDER – Wildlife Habitat Areas # 6-058 and 6-059

This order is given under the authority of sections 9(2) and 10(1) of the *Government Actions Regulation* (B.C. Reg. 582/04).

The Deputy Minister of Environment orders that:

1. the wildlife habitat area shown in the map set out in the attached Schedules A (6-058 and 6-059) and boundaries contained in the GIS file *twha_bc* are established;
2. the wildlife habitat area in the attached Schedule A and boundaries contained in the GIS file *twha_bc* are established for Coastal Tailed Frog (*Ascaphus truei*);
3. the general wildlife measures outlined in Schedule 1 are established for the wildlife habitat areas in the attached Schedule A and boundaries contained in the GIS file *twha_bc*;
4. where there is any discrepancy between the wildlife habitat area boundaries as shown in the attached Schedules A and the GIS file *twha_bc*, the boundary as detailed in the GIS file will take precedent. The centre point of the line on the map denoting the wildlife habitat area is what establishes the boundary; and
5. pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan are hereby exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for Coastal Tailed frog in the Kalum Forest District.

Schedule 1 – General Wildlife Measures

Access

- No road construction or stream crossings will be established within the core area. Where other options are not practicable, and roads or stream crossings are determined to be necessary for access, an exemption is required from the Minister of Environment or delegate.
- When roads are determined to be necessary, minimize their length and width to alleviate as much as practicable, site disturbance. Reduce groundwater interception in the cut-slope; use sediment-control measures in cut-and-fill slopes (e.g., grass-seeding, armouring ditch lines, and culvert outfalls); deactivate roads but minimize digging and disturbance to adjacent roadside habitat; and minimize site disturbance during road right-of-way clearing, especially in terrain polygons with high sediment transfer potential to natal streams.
- Where stream crossings are required, fall and yard away from, or bridging, all other stream channels (ephemeral or perennial) within the WHA, to reduce channel disturbance and slash loading; and ensure the type of crossing structure and any associated roads are

designed and installed in a way that minimizes impacts to tailed frog in-stream and riparian habitats. Use temporary clear span bridges where practicable.

Harvesting and silviculture

- Do not harvest or salvage timber within the core area or special management zone.

Pesticides

- Do not use pesticides unless an exemption is approved by the Minister of Environment or delegate.

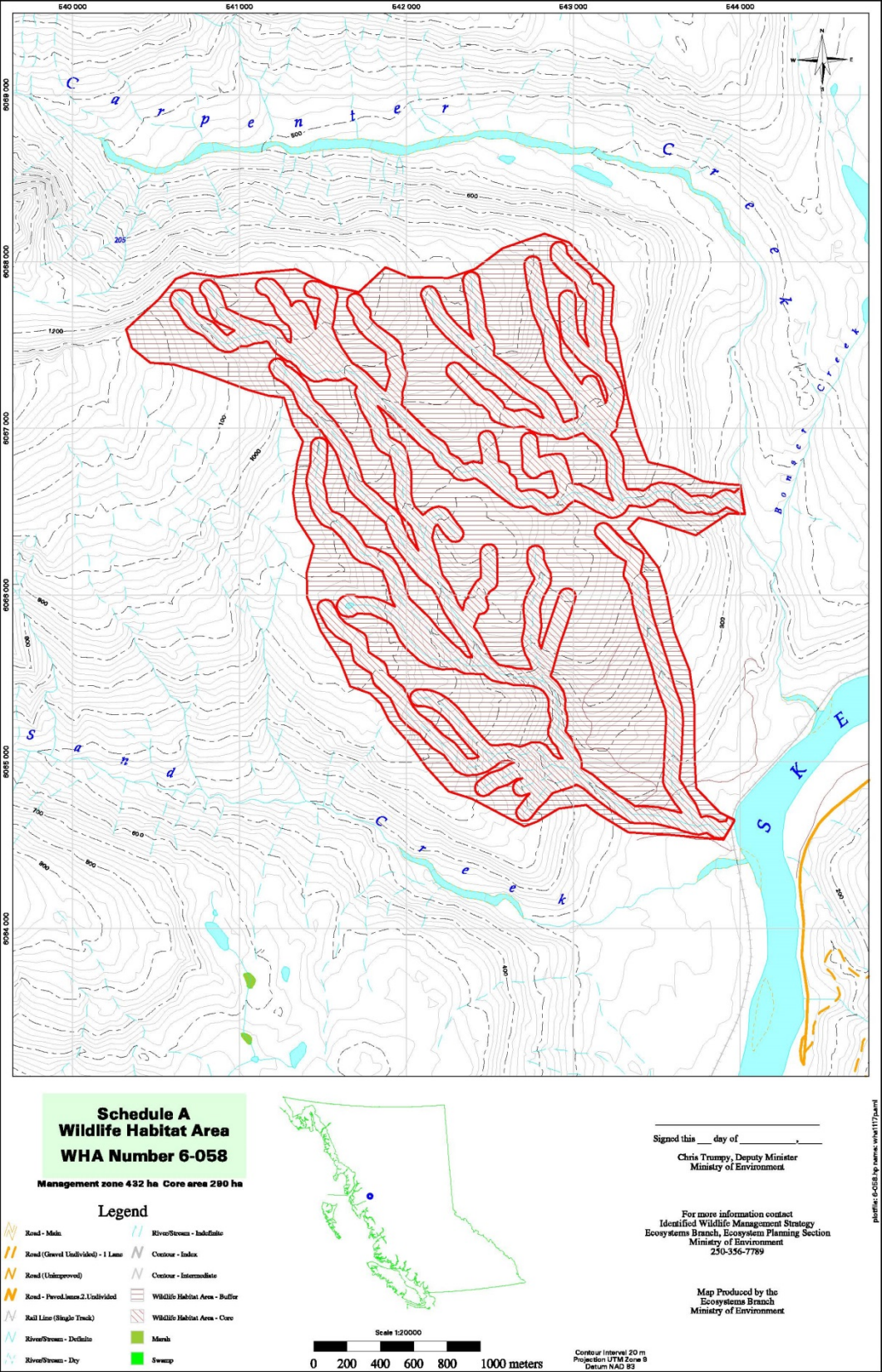


Figure 36. Wildlife Habitat Area 6-058 – Kalum FDU



ORDER – Wildlife Habitat Areas # 6-060 to 6-067

This order is given under the authority of sections 9(2) and 10(1) of the *Government Actions Regulation* (B.C. Reg. 582/04).

The Deputy Minister of Environment orders that:

1. the wildlife habitat area shown in the map set out in the attached Schedules A (6-060, 6-061, 6-062, 6-063, 6-064, 6-065, 6-066 and 6-067) and boundaries contained in the GIS file *twha_bc* are established;
2. the wildlife habitat area in the attached Schedules A and boundaries contained in the GIS file *twha_bc* are established for Coastal Tailed Frog (*Ascaphus truei*);
3. the general wildlife measures outlined in Schedule 1 are established for the wildlife habitat areas in the attached Schedule A and boundaries contained in the GIS file *twha_bc*;
4. where there is any discrepancy between the wildlife habitat area boundaries as shown in the attached Schedule A and the GIS file *twha_bc*, the boundary as detailed in the GIS file will take precedent. The centre point of the line on the map denoting the wildlife habitat area is what establishes the boundary; and
5. pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan are hereby exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for Coastal Tailed frog in the Kalum Forest District.

Schedule 1 – General Wildlife Measures

Access

- No road construction or stream crossings will be established within the core area. Where other options are not practicable, and roads or stream crossings are determined to be necessary for access, an exemption is required from the Minister of Environment or delegate.
- When roads are determined to be necessary, minimize their length and width to alleviate as much as practicable, site disturbance. Reduce groundwater interception in the cut-slope; use sediment-control measures in cut-and-fill slopes (e.g., grass-seeding, armouring ditch lines, and culvert outfalls); deactivate roads but minimize digging and disturbance to adjacent roadside habitat; and minimize site disturbance during road right-of-way clearing, especially in terrain polygons with high sediment transfer potential to natal streams.
- Where stream crossings are required, fall and yard away from, or bridging, all other stream channels (ephemeral or perennial) within the WHA, to reduce channel disturbance and slash loading; and ensure the type of crossing structure and any associated roads are

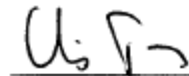
designed and installed in a way that minimizes impacts to tailed frog in-stream and riparian habitats. Use temporary clear span bridges where practicable.

Harvesting and silviculture

- Do not harvest in the core area or within the gully where the gully extends beyond the core area.
- For the special management zone, develop a spatially explicit management plan for approval by the Minister of Environment or delegate, prior to development, which is consistent with the goals of the general wildlife measures. Use a silviculture system that maintains 70% residual stand volume and attributes of the natural stand structure profile, evenly dispersed, including:
 - 70% of all original diameter classes represented in proportion to the average stand profile for the site series.
 - Rare site series will be retained in greater proportion than they occur in the landscape unit.
 - At least 50% of area will have interior-forest conditions (2 tree lengths defines edge habitat along topographic features such as gullies and bluffs, or 4 tree lengths for clear-cut edges).
 - Connectivity of natural forest along and between streams, and over low heights of land.
 - 70% snags, large green trees, understory plant community, vertical and horizontal structure.
 - coarse woody debris including large-diameter, long logs with horizontal and vertical structure.
- No timber salvage should be carried out.
- Avoid cross-stream yarding.
- Do not use chemical applications (e.g., dust palliative polymer stabilizers and soil binders that can be sprayed within ditch lines).

Pesticides

- Do not use pesticides unless an exemption is approved by the Minister of Environment or delegate.



Signed this 28th day of March, 2006
Chris Trumpy, Deputy Minister
Ministry of Environment

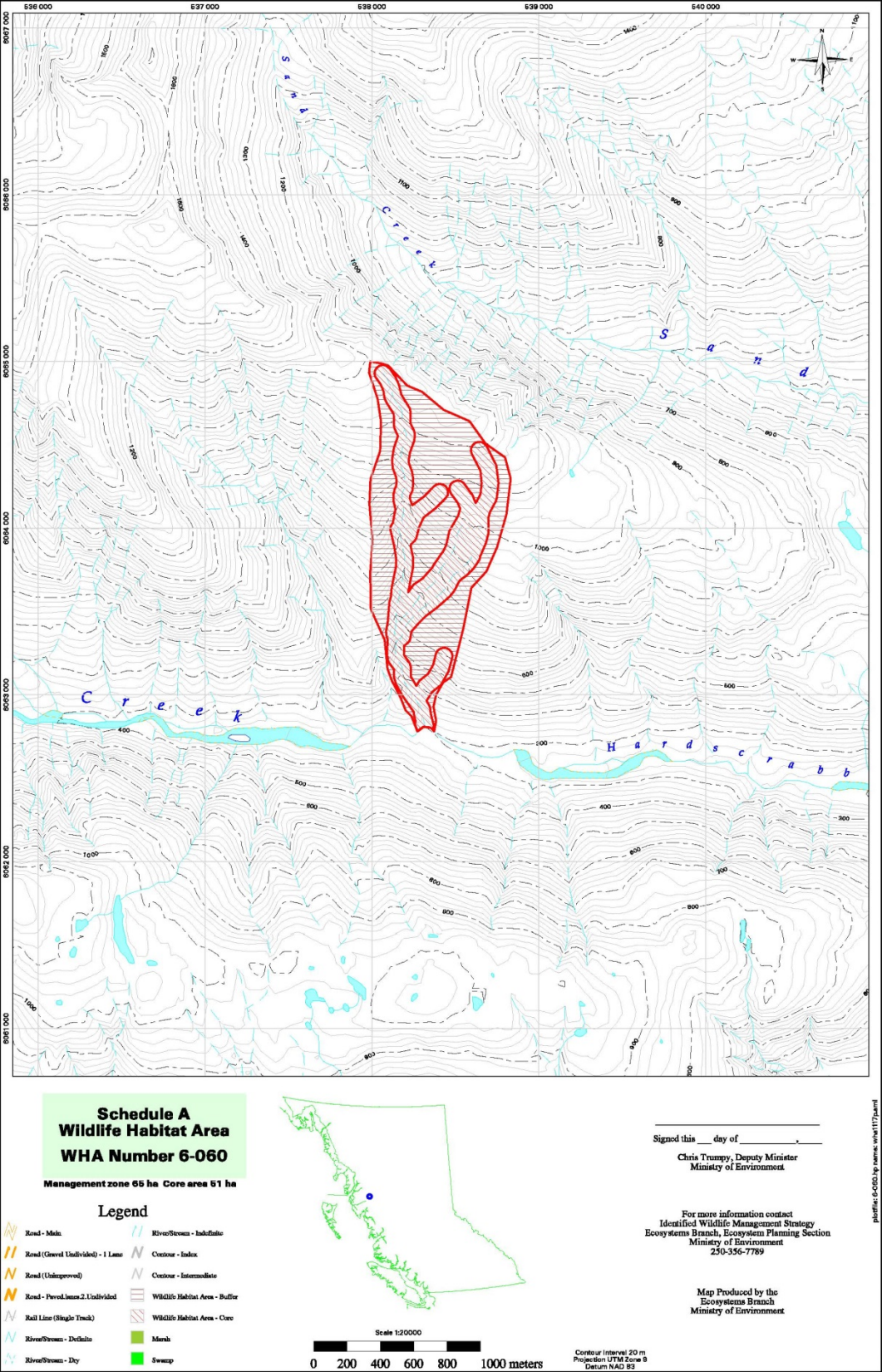


Figure 37. Wildlife Habitat Area 6-060 – Kalum FDU

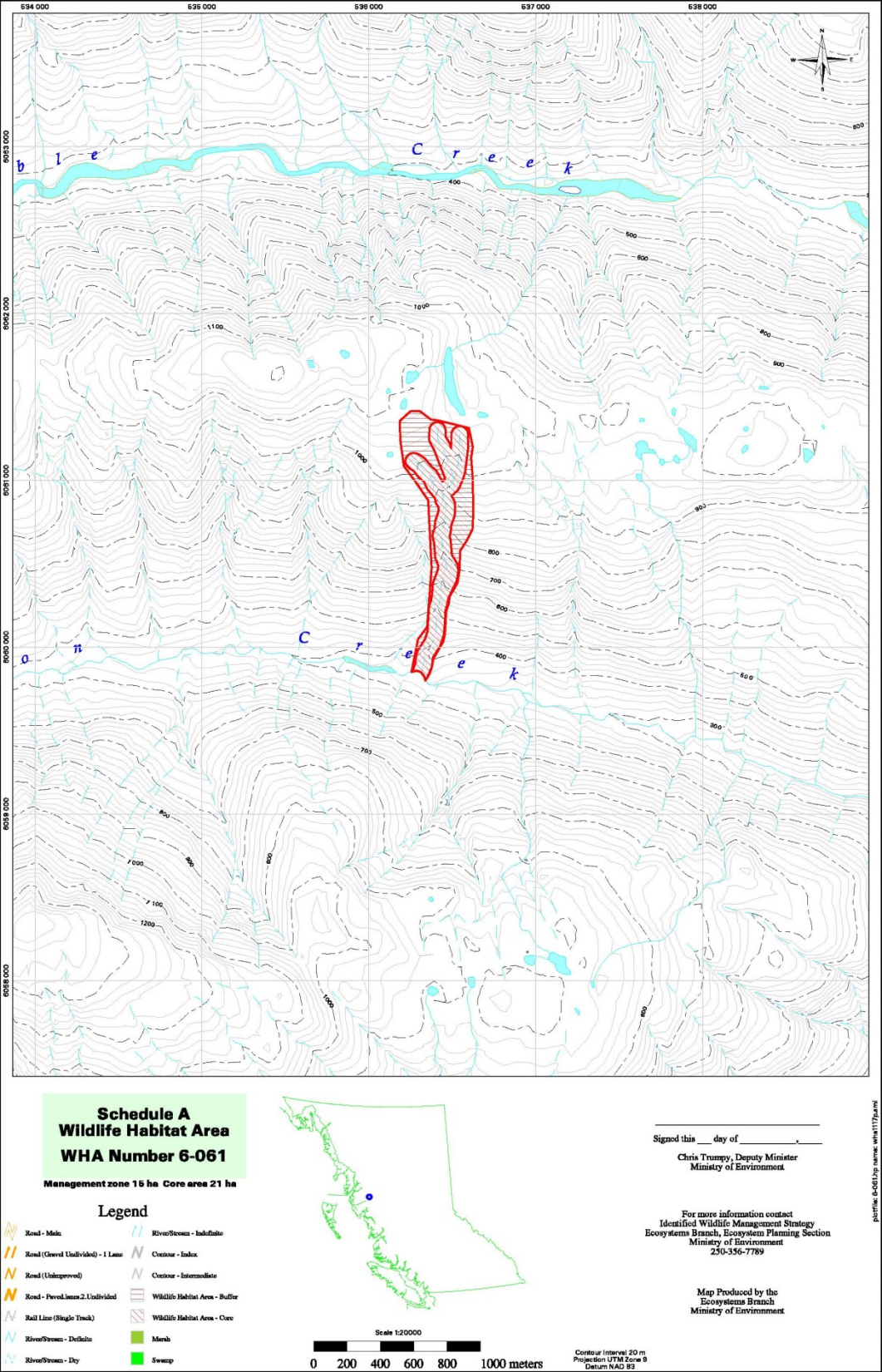


Figure 38. Wildlife Habitat Area 6-061 – Kalum FDU

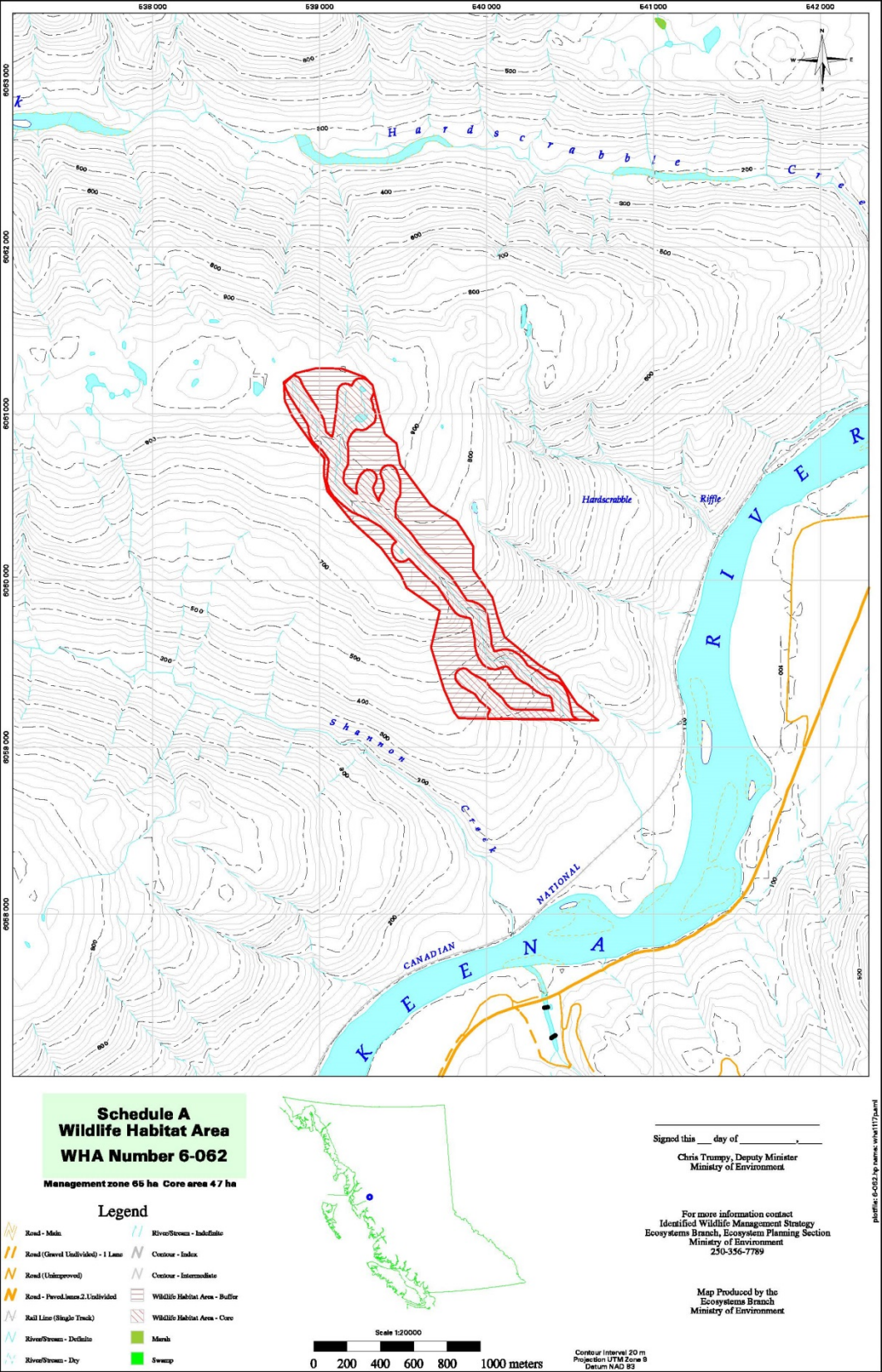


Figure 39. Wildlife Habitat Area 6-062 – Kalum FDU

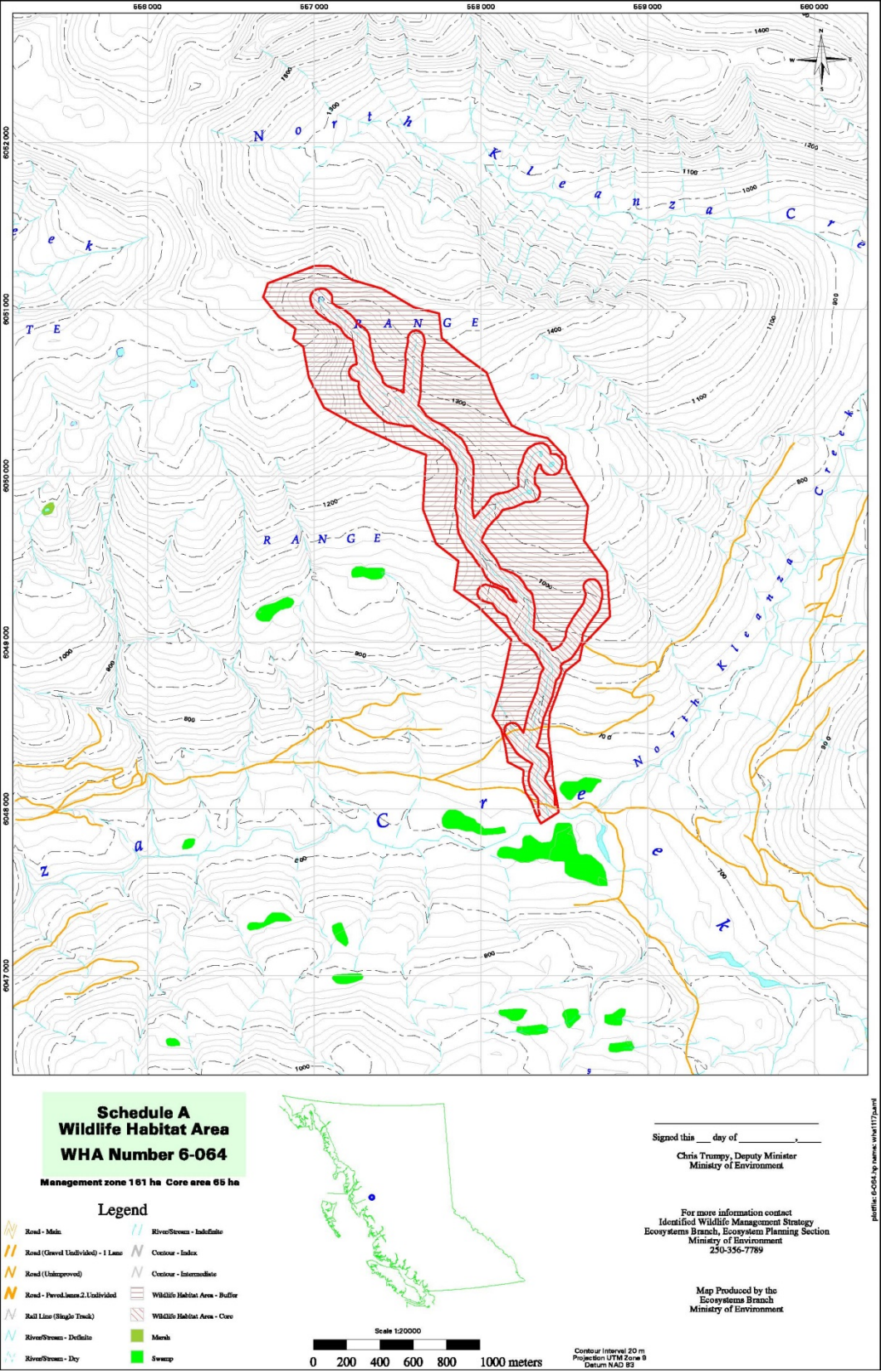


Figure 40. Wildlife Habitat Area 6-064 – Kalum FDU

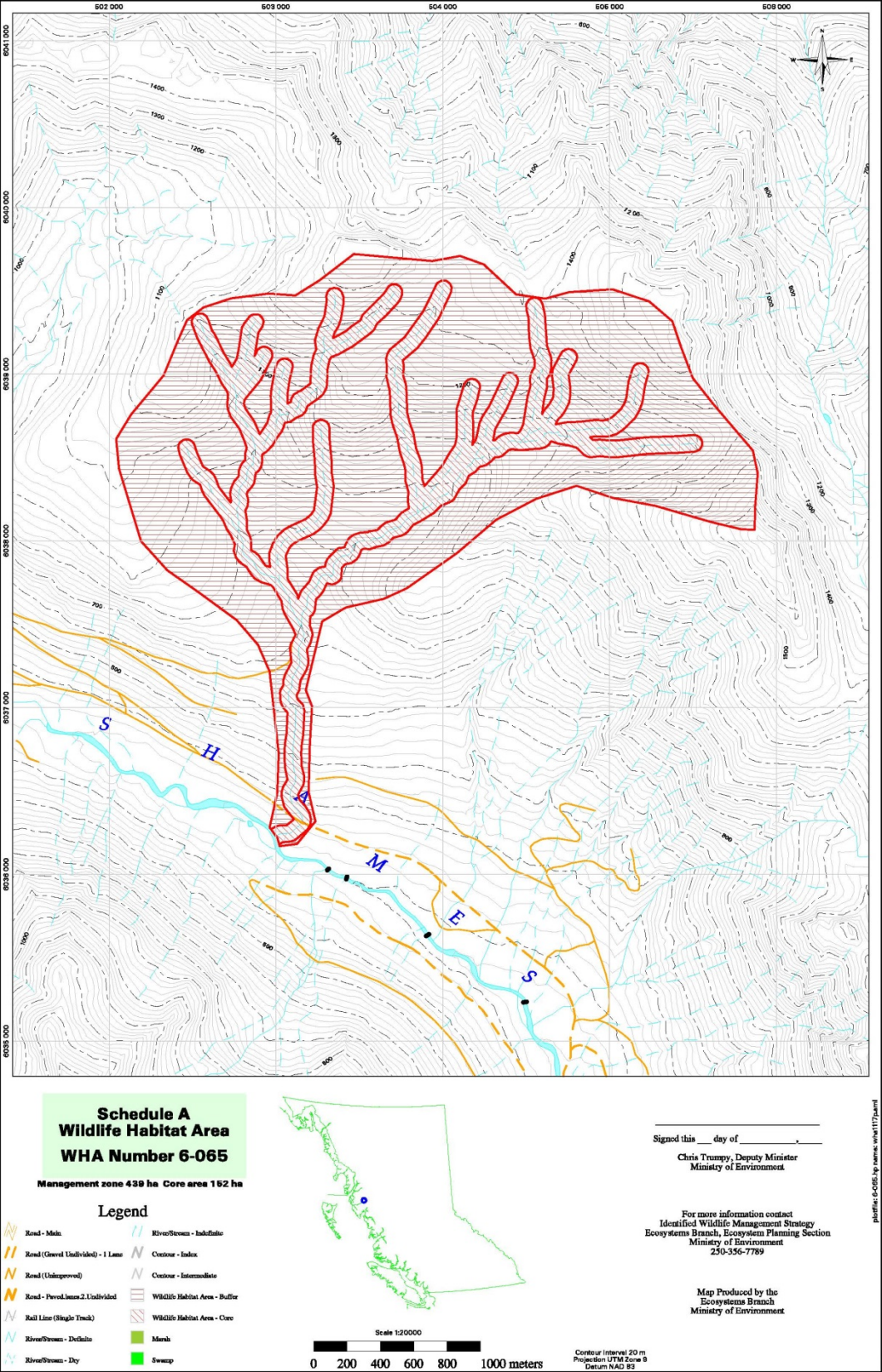


Figure 41. Wildlife Habitat Area 6-065 – Kalum FDU

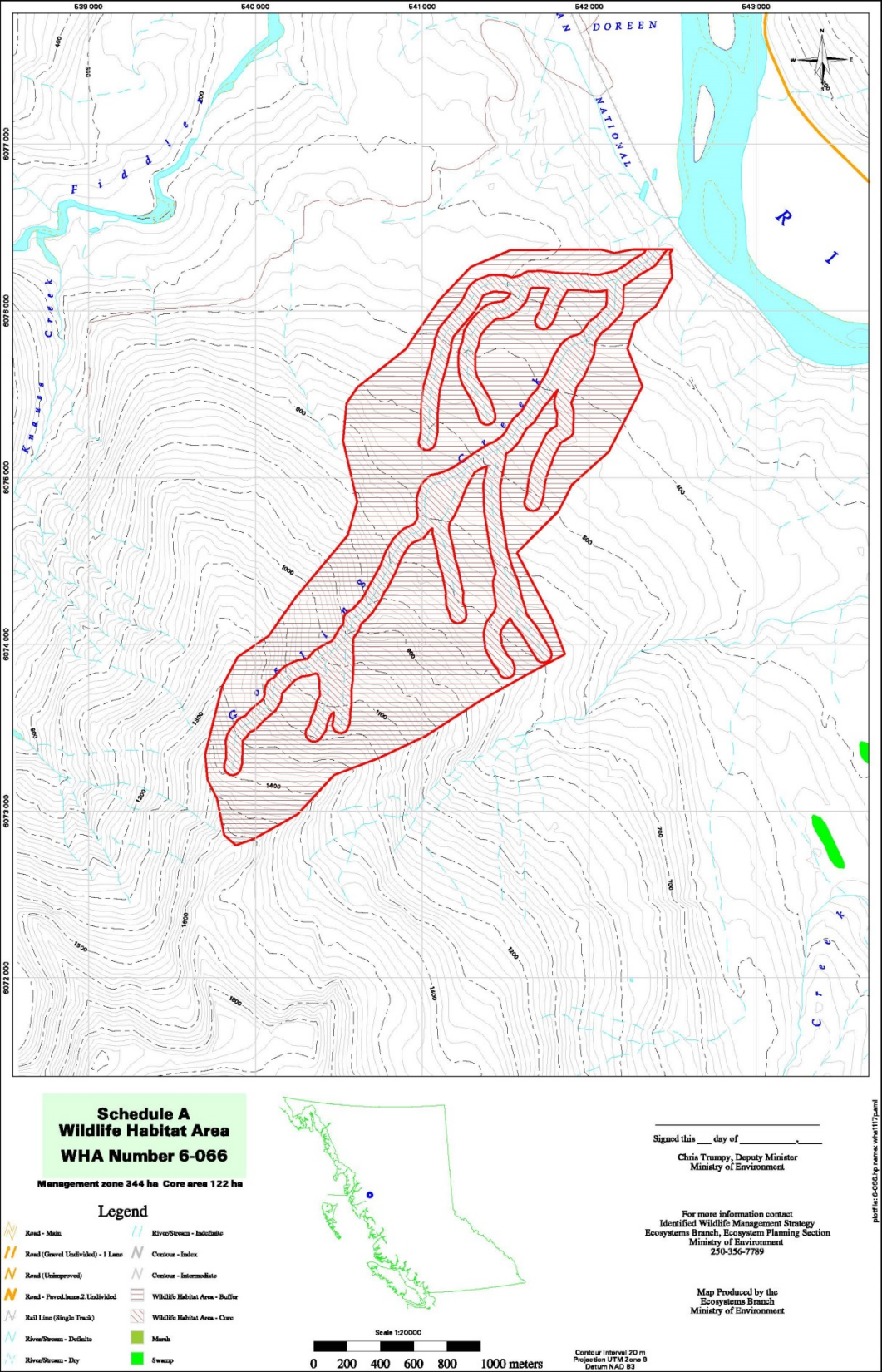


Figure 42. Wildlife Habitat Area 6-066 – Kalum FDU

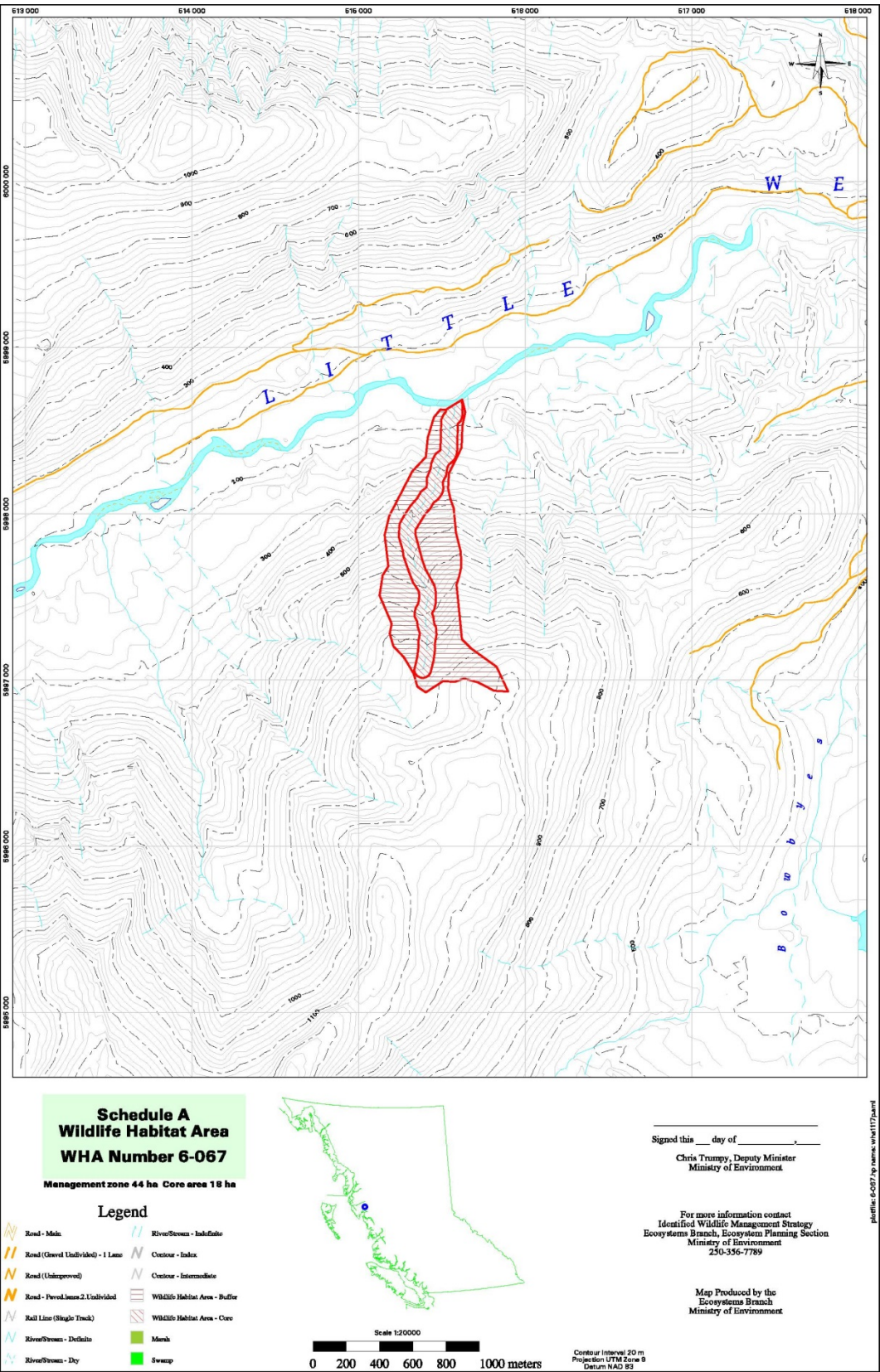


Figure 43. Wildlife Habitat Area 6-067 – Kalum FDU

