



**Skeena**  
**SAWMILLS**

**Copy for Public Review and Comment**

# Forest Stewardship Plan

For operations administered by Skeena Sawmills Ltd. within the Coast Mountains Natural Resource District under Tree Farm Licence 41, Forest Licence A16885, and Forest Licence A16882

**Authorized Licencee Signatory (FRPA s. 5(3))**

Mark Reiter, RPF  
Skeena Sawmills Ltd.

**Date:**

*to be signed at final submission*

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**Authorized RPF Signatory**

Douglas Hodgins, RPF  
Skeena Sawmills Ltd.

**Date:**

*to be signed at final submission*

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The term of this Forest Stewardship Plan is five (5) years, following approval and commencing on the date specified by the Delegated Decision Maker (DDM).

Plan Commencement Date: **TBA**

Plan Expiry Date: **TBA**

## 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 (Kalum SRMP) to provide the government land use

objectives (ILMB, 2006). In December, 2017, an amendment respecting the Kiteen Area to the Land Use Objectives Regulation Order, 2006 for portions of the Kalum SRMP Area was approved and incorporates 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 amendment or the Gitanyow Land Use Plan in the Kalum FDU were made. An additional amendment to the Kalum SRMP signed in December 2017 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 completed in December 2017.

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://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning>

## **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, 6-058, 6-060-62, 6-064-67, 6-282, 6-287, and 6-292) and are available online at the following sites:

For Ungulate Winter Ranges

[http://www.env.gov.bc.ca/wld/frpa/uwr/approved\\_uwr.html](http://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html)

For Wildlife Habitat Areas

<https://www.env.gov.bc.ca/wld/frpa/iwms/wha.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 and 2017) 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, traditional, and technical knowledge, and the use of professionals and guidance documents to support management decisions.

The following are examples of other important expectations of society, respecting the management of the public forest and range lands in B.C.:

#### **1) Indigenous Peoples**

The *Declaration on the Rights of Indigenous Peoples Act* (DRIPA or Declaration Act) became provincial law in 2019. Skeena Sawmills is committed to supporting the five-year action plan (2022) for the Declaration Act, developed by the B.C. Government to advance reconciliation with indigenous people in B.C.

Skeena Sawmills is dedicated to engaging fulsomely with participating Indigenous Peoples where forestry activities overlap an Indigenous Groups traditional territory or treaty area. Additionally, where non-legal land management plans have been developed by an Indigenous Group, Skeena Sawmills will consider the implementation and adoption of the objectives detailed within the plan through information sharing during the development of cutblocks and roads.

Skeena Sawmills is an active participant in the Skeena Sustainability Assessment Forum (SSAF). SSAF is an Indigenous Stewardship Forum which works to generate results and assessments through the use of trusted data, lead in collaboration with government, licencees, and signatory First Nations. The SSAF is a collaborative process involving ten Skeena Nations and Provincial agencies working together on environmental stewardship that creates shared and trusted data through the collaborative design and implementation of environmental monitoring of medicinal plants, grizzly bear, fish and fish habitat, moose, and wetlands.

## 2) Cumulative Effects

### *Monitoring*

In April 2021 Coast Mountains Natural Resource District released its Multiple Resource Assessment (MRVA) Report completed by the Forest and Range Evaluation Program<sup>1</sup> (FREP) for the District. FREP uses effectiveness evaluations to monitor the effects of forest activity on the condition of the FRPA values including biodiversity, cultural heritage, fish/riparian and watershed, forage and associated plant communities, recreation, resource features, soils, timber, visual quality, water, and wildlife. The MRVA report included assessing the values for biodiversity, cultural heritage, visuals, water quality and riparian. Where opportunities for improvement have been identified and as per the recommendations of the report Skeena Sawmills has implemented best management practices through its operations to improve outcomes if and where objectives are not being fully met.

### *Planning*

To assist in the management of cumulative effects across the landscape and where multiple licencees' Forest Development Units overlap, Skeena Sawmills reviews other licencees Forest Stewardship Plans for consistency. The Objectives, Results and Strategies within this Forest Stewardship Plan align closely with other local FSPs to more effectively achieve landscape level management goals (see section 1.8 Cumulative Effects of Multiple Forest Stewardship Plans).

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 (proportional Objectives) for sharing the responsibility to obtain results consistent with objectives set by government, and this is expected to continue to be the case.

Additionally, Skeena Sawmills alongside other local licencees, communicate through various regional steering committees (e.g. CMNRD steering committee). These committees provide a forum for resource managers to discuss issues, coordinate plans and management strategies, and provide insight into the status of their individual operating areas.

## 3) Old Growth

In 2019, The Government of British Columbia appointed an independent, two-person panel as part of an Old Growth Strategic Review which engaged the public on old growth within the province of B.C. The findings of the report, including 14 recommendations, was published in 2020 as "A New Future for Old Forests: A Strategic Review of how British Columbia Manages for Old Forests Within its Ancient Ecosystems". B.C. has committed to implementing the 14 recommendations in 2021 and developing a provincial Old Growth Forests Strategic Action

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<sup>1</sup> The FREP MRVA Reports can be accessed from the Government of BC website via this URL:  
(<https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program/frep-multiple-resource-value-assessments>)

Plan for the fall of 2023. During this time of rapidly changing forest policy, Skeena Sawmills remains consistent with the latest provincial direction regarding old growth management in B.C.

#### **4) Information Sharing, Stakeholder, and Public engagement**

In addition to engaging with Indigenous Peoples, stakeholders, and the public through the FSP review process, Skeena Sawmills seeks to improve the availability of operational plans for interested parties. Skeena Sawmills will make publicly available future cutblock and access related information that will provide interested parties the opportunity to understand the operations and activities occurring on public land. This information will be conveyed through the use of Skeena Sawmills website, where Forest Operations Maps (FOM) (in .pdf format) will be made available for download. These maps will be updated annually, and provide information regarding the next year of planned development on public land.

#### **5) Climate Change**

Climate change has, and will continue to, affect forest ecosystems and forest management across the region. Forest management addresses climate change by promoting diverse and resilient forest ecosystems. Regionally specific data on climate change indicates that, the Skeena Region has seen an increase in the annual mean temperature, an increase in precipitation, and a decrease in the annual snowfall. The data also suggests that these trends are expected to continue and increase in magnitude. The potential rate of change, the specific characteristics and magnitude of those changes remains uncertain. To remain proactive in forest management, Skeena Sawmills will use the tools available to best manage for change. For instance, in addition to stocking standards that promote forest resiliency through species diversity, Skeena Sawmills is implementing the use of Climate Based Seed Transfer (CBST) guidelines for its reforestation activities when planning for resilient future forests.

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. Mark.Reiter@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 Licences to Which This FSP Applies**

This FSP applies to all primary forest activities, cutblocks and roads developed and managed by Skeena Sawmills under the following licences:

- Tree Farm Licence #41 (TFL 41)
- Forest Licence A16885
- Forest Licence A16882

### **1.3 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.

### **1.4 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**

<b>Forest Development Unit</b>	<b>Source of Land Use Objectives used to define FDU</b>	<b>Applicable Tenure</b>	<b>Spatial Boundaries and Maps</b>
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 I 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 Wildlife Habitat Area Order #6-287 Grizzly Bear (Kalum TSA, Cascadia TSA, Pacific TSA, TFL 1 and TFL41): June 18, 2018
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 II 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 Specified Area 6-292 Schedule A Map applies for Thinhorn Sheep Disease Prevention 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 North FDU Specified Area 6-292 Schedule A Map applies for Thinhorn Sheep Disease Prevention in the Nass North FDU Order establishing provincial Non-spatial Old Growth Objectives, June 30, 2004, under the Forest Practice Code applies in the Nass North FDU

## 1.5 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,**

**, and Figure 3. Maps from the Kalum SRMP and Nass South SRMP are also included in Appendix I and II 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.

## **1.6 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 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), Specified Areas (SA), and Ungulate Winter Ranges (UWR) as well as non-spatial old growth objectives established for the Nass North FDU. These include UWRs for Moose and Mountain Goats, SAs for Thinhorn Sheep and Grizzly Bears.

## **1.7 Effect of Approval of the FSP**

In accordance with FPPR 14, Table 20. FPPR s.14(4) and FRPA s. 196 Declared Areas 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.

## **1.8 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 – Community Forest Agreement K1X

## 2. For the Nass North and Nass South FDUs:

- BC Timber Sales;
- Canada Resurgence Ltd. - FL A16884; and,
- Gitanyow Economic Development Corporation – Non-Renewable Forest Licence A96100

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.

## 1.9 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.

## 1.10 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.

## 1.11 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.

<b>Active floodplain</b>	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.
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<b>Basal Area (BA)</b>	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)
<b>BCTS</b>	British Columbia Timber Sales.
<b>BEC</b>	Biogeoclimatic Ecosystem Classification.
<b>Community watershed</b>	a drainage basin that is managed to provide a domestic water supply to a particular community of users.
<b>Climate Based Seed Transfer (CBST)</b>	a science-based methodology and framework that uses climate variables to match seed sources (seedlots) to climatically suitable planting sites. CBST in BC also includes the use of Assisted Migration as a climate change adaptation strategy.
<b>Connectivity</b>	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.
<b>Cultural Heritage Resource (CHR)</b>	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.
<b>Cutblock</b>	<p>“Cutblock” means, for any individual area that has or will be harvested under a cutting permit to which this FSP applies:</p> <ol style="list-style-type: none"> <li>the net area to reforest;</li> <li>the area occupied by permanent access structures required to harvest the area;</li> <li>all riparian reserve zones and wildlife tree retention areas associated with the harvest area; and</li> <li>areas that are not harvested as a result of the selected silviculture system.</li> </ol>
<b>Delegated Decision Maker (DDM)</b>	the delegated decision maker appointed by the Minister.
<b>EVQO</b>	Established Visual Quality Objective.
<b>Fan destabilization</b>	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.
<b>Forest Development Unit (FDU)</b>	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.

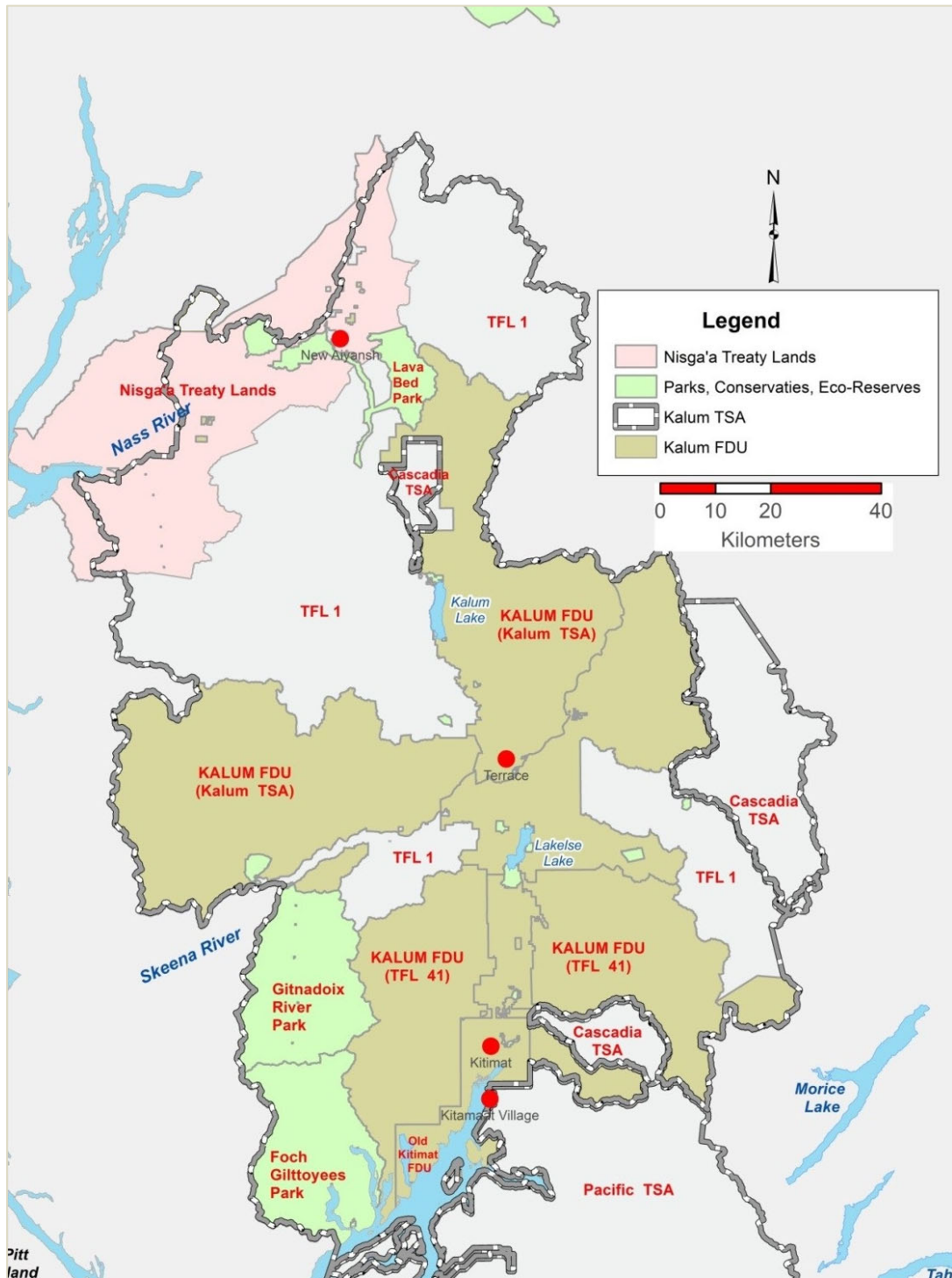
<b>FPC</b>	the Forest Practices Code of British Columbia Act, RSBC 1996, c.159.
<b>FPPR</b>	the Forest Planning and Practices Regulation, B.C. Reg. 14/2004 (includes amendments up to B.C. Reg. 157/2012, June 25, 2012).
<b>FREP</b>	the Forest and Range Evaluation Program, used by the Government of British Columbia to evaluate the effectiveness of forest and range practices in achieving management objectives, including sustainable resource management.
<b>FRPA</b>	the <i>Forest and Range Practices Act</i> , SBC 2002, c.69 (current to June, 2016).
<b>FSP</b>	Forest Stewardship Plan.
<b>GAR</b>	the <i>Government Action Regulation</i> B.C. Reg. 582/2004.
<b>High bench floodplain ecosystem</b>	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.
<b>LRMP</b>	Land and Resource Management Plan.
<b>Landscape unit</b>	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.
<b>Legal objective</b>	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.
<b>Low bench floodplain ecosystem</b>	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.
<b>Middle bench floodplain ecosystem</b>	an ecosystem that experiences prolonged elevated water tables during the 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.
<b>Minor Salvage Operations</b>	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.
<b>Monumental Cedar</b>	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.
<b>NDT</b>	natural disturbance type.

<b>Natural disturbance types</b>	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.
<b>Net Area to Reforest (NAR)</b>	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 non-commercial 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.
<b>OGMA(s)</b>	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).
<b>Primary Forest Activity</b>	one or more of the following: (a) timber harvesting; (b) silviculture treatments; and, (c) road construction, maintenance and deactivation.
<b>Qualified Person</b>	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.
<b>Qualified Professional</b>	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.
<b>Road Construction</b>	the construction of a road, and includes bridges and major culverts.
<b>Roadside Work Area</b>	the area adjacent to a road where decking, processing, or loading timber; and/or piling or disposing of logging slash is/are carried out.
<b>RVQC</b>	Recommended Visual Quality Class (including these classes: preservation, retention, partial retention, modification, and maximum modification).
<b>SRMP</b>	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).
<b>Scenic area</b>	any visually sensitive area of scenic landscape identified through a visual landscape inventory or planning process carried out or approved by a district manager.

<b>Sustainability</b>	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.
<b>TSA</b>	Timber Supply Area.
<b>Timber Sale Licence (TSL)</b>	a Timber Sale Licence entered into under the Forest Act between the BC Timber Sales Manager and its holder.
<b>TSR</b>	Timber Supply Review.
<b>UWR</b>	Ungulate Winter Range.
<b>Visual Quality Objective (VQO)</b>	(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.
<b>WHA</b>	Wildlife Habitat Area.
<b>WTP</b>	Wildlife Tree Patch.
<b>WTR</b>	Wildlife Tree Retention.
<b>Watershed</b>	an area of land that collects and discharges water into a single main stream through a series of smaller tributaries.
<b>wildlife trees</b>	a tree or group of trees that (a) provide wildlife habitat, and (b) assist in the conservation of stand level biodiversity.
<b>wildlife tree retention area (WTRA)</b>	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 I 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 and 2017);
- 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 s. 37, 38, 39, & 40 as per section 149 of the forest act	
Practice Requirement(s) Eligible for Exemption	FPPR s.12.2	<u>Decision:</u> Exemption per FPPR s. 12.2 applied as follows - FPPR s. 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 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 s. 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 GAR section 5 ( e ) March, 11 2021 B.C Reg. 64/2021
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

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.

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

During the term of this FSP, where timber harvesting and road construction are planned, 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 potential archaeological and cultural sites (location, nature and extent of cultural heritage resources) proximal to proposed harvest blocks and roads by conducting an initial office review of known information<sup>2</sup> and documenting the results.
2. Information share by providing the results of the initial review to potentially affected First Nations identified through the Consultative Areas Database and requesting 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. Where traditional use information is made available, the FSP Holder will hold any information received in confidence.
3. The FSP Holder will ensure that a Cultural Heritage Resource Evaluation (CHRE)<sup>3</sup> will be completed on all blocks and roads prior to harvesting or road construction activities occurring.

<sup>2</sup> Known information may include AOA's, traditional use information, archaeological information, cultural sites and traditional use studies or other information made known to the FSP holder by an affected First Nation.

<sup>3</sup> **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;

4. Timber harvesting and or road construction will be consistent with the recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (3) 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;
5. If the FSP Holder(s) and a specific First Nation have agreed to a written information sharing process, (1) through (4) above will not apply where they are inconsistent with that written information sharing process.
6. Ensure that if during timber harvesting and or road construction a previously unidentified cultural heritage resource feature is encountered on their cutblock or road, the FSP Holder will:
  - a. stop activity to the extent necessary to protect the cultural heritage resource until an assessment is carried out,
  - b. consult with the potentially affected First Nations with the details of the previously unidentified cultural heritage resource feature, and
  - c. ensure the FSP Holder's harvesting, road construction, or mechanical site preparation activities continue in a manner that follows the recommendations given in the assessment, that are practicable and are required to conserve or, if necessary, protect a cultural heritage resource if it is of continuing importance to the First Nations.
7. For the purpose of Objective 2.3.1, during the term of this FSP, minor removal of western red cedar and yellow cedar 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.<sup>4</sup> The FSP holder will:
  - a. communicate with First Nations identified through strategy 2.3.1.1 (2) cutblocks with a component of cedar prior to the start of harvesting operations.
8. At the request of a First Nation Council or Hereditary Chief, and prior to the lapsing of the cutting permit for any particular harvest area, authorize by letter of agreement between the First Nation Council or Hereditary Chief and the FSP holder the removal of western red cedar or yellow cedar for cultural purposes from retention areas, including Wildlife Tree

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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.
  - 4 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.

Retention Areas (WTRA) or Riparian Management Zones<sup>5</sup> (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,
9. provide a copy of agreement(s) resulting from section (8) above to the Coast Mountains Natural Resource District Manager.

#### 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.

## 2.4 Visual Quality in the Kalum FDU

### Reference Information for this Objective

Type of Objective	Land Use Objectives – Kalum SRMP Objectives 15 and 16, Effective April 28, 2006.  Objective Enabled by Regulation – FRPA ss. 180 (c) and 181 for grand parenting scenic areas, and GAR s. 17 and 7(1) and (2) 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.  <b>Not Applicable</b> - 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.
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 landscape<sup>6</sup> for scenic areas meets the visual quality objective for the scenic area.

<sup>5</sup> 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

<sup>6</sup> **Altered forest landscape categories** – are defined in this FSP according to the FPPR s.1 as:

**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 I, **Error! Reference source not found.**), 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,
  - 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

**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 public 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.

Appendix I, **Error! Reference source not found.**), 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.
3. Retention Silviculture (Harvest) System

## 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) and (h) through the: Order to Establish Objectives for a Recreation Site, Recreation Trail, or Interpretive Site (July 25, 1997); and, 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 **Error! Reference source not found.**

#### 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 Recreational Sites with the establishment of objective 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 objective 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,

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

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

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

**Table 4. Recreation Trails with Motorized Restrictions**

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

## 2.6 Water Resources and Riparian Areas in the Kalum FDU

### Reference Information for this Objective

Type of Objective	Land Use Objectives – Kalum SRMP Objective 17 Objective Set in Regulation – FPPR s. 8 (for riparian areas) 8.1 (for fish habitat in fisheries sensitive watersheds) & 8.2 (for community watersheds) Objective Enabled by Regulation – FRPA ss. 180 (e) and 181 for grand parenting community watersheds	
Conditional Exemptions	FPPR s. 12.3, 12.31, 12.32	
Mandatory Practice Requirements	FPPR s. 54, 58, 62, & 63	
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR s.12.3, 12.31, 12.32	<u>Decision:</u> No exemptions applied. The FSP holder will comply with FPPR s. 47, 48, 49, 50, 51, 52(2), 53, 55, 56, 57, 59, 60, & 61

### 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. 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 patches 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 <sup>1</sup>	Riparian Reserve Zone Width <sup>1</sup>	Riparian Management Zone Width <sup>1</sup>	Basal Area Retention within RMZ
<b>Fish Streams: FPPR s. 47</b>					
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 %
<b>Non-Fish Streams: FPPR s. 47</b>					
S5	> 3 m	30 m	0 m	30 m	>= 10 %
S6	< 3 m	20 m	0 m	20 m	N/A
<b>Wetlands: FPPR s. 48</b>					
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 %
<b>Lakes: FPPR s. 49</b>					
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 %

<sup>1</sup> 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 I, **Error! Reference source not found.**), 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 0 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)
8. Wathl Creek;
9. Ksa Miintl Am Hawak Creek;
10. Rosswood (Clear Creek); and,
11. 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 an equivalent clear-cut 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 by the qualified person 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 an 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 an 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 an 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 GAR Order: Wildlife Habitat Area -Order #6-287 Grizzly Bear (Kalum TSA, Cascadia TSA, Pacific TSA, TFL 1 and TFL41): June 18, 2018
Mandatory Practice Requirements	FPPR s. 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 Strategy for seral stage and patch size distribution in the Kalum FDU, and 2.8.4.1 Strategy for old seral forest retention in identified undeveloped watersheds in the Kalum FDU;
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, comply with schedule 1 as established for WHA in GAR Order #6-287 Grizzly Bear (July 18, 2018);
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 OGMA's in the Kalum FDU, 2.8.4.1 Strategy for old seral forest retention in identified undeveloped watersheds 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 I, **Error! Reference source not found.**), 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 sites<sup>7</sup> implementing regeneration and free (*growing*) standards consistent with Kalum SRMP Table 8 (see Appendix I, Table 629), 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. During the term of this FSP, the FSP holder will adopt the following: Wildlife Habitat Area - Order #6-287 Grizzly Bear (Kalum TSA, Cascadia TSA, Pacific TSA, TFL 1 and TFL 41): June 18, 2018 established through an Order under the Government Actions Regulation, the General Wildlife Measures stated in the Order will be adhered to.

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

In respect of Objective 2.7.2 (1), (2), and (3), the FSP holder will ensure that stocking standards for the site associations in Table 6 and Table 16. Even-Aged and Wildlife Habitat 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 I **Error! Reference source not found.** and 6.0 Stocking Standards). The minimum size for a

<sup>7</sup> 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.

silvicultural treatable unit to apply the standards listed in Table 6. is at least one hectare for sites which are entirely sub-hygic to sub-hydric. Minimum silvicultural treatable unit size is two hectares within non-contiguous (ecosystem complex) sub-hygic to sub-hydric sites where individual sites are greater than 0.25 ha and these sites comprise greater than 20% of the ecosystem complex area.

**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 forage supply 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:

1. more than 30% of the forested land base, excluding hardwoods, is between 25 and 100 years old, or
2. an analysis of the Grizzly Bear 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 I, **Error! Reference source not found.**):

- 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 I, **Error! Reference source not found.**) 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) as set out in the Kalum SRMP objective 12 is to maintain wildlife habitat and biodiversity within the Lakelse River Special Resource Management Zone identified on Kalum SRMP Map 8 (see Appendix I, **Error! Reference source not found.**), [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 s. 12.4 & 12.5	
Mandatory Practice Requirements	FPPR s. 68 (Coarse woody debris)	
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR s. 12.4, 12.5	<u>Decision:</u> Exemptions applied as follows:  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.

### 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 I, Table 22, Table 23, and Table 24).

### 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 I, Table 28).

#### 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. seral stage imbalances based on the applicable land use objectives from the Kalum SRMP (Tables 1, 2, and 3).
4. If necessary, 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. address patch size imbalances, based on the applicable land use objective from the Kalum SRMP (Table 7);
6. If necessary, an action plan is prepared to address patch size distribution imbalances identified in section 5 above;
7. 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 1<sup>st</sup>, 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), and the FSP holder has planned harvest activities, a rationale will be prepared that describes management strategies for moving towards the target levels.

#### **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 I, **Error! Reference source not found.**). 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 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 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 watershed<sup>8</sup> listed in Table 4 of the Kalum SRMP and shown on Kalum SRMP Map 3 (see Appendix I, Table 25 and **Error! Reference source not found.**), consistent with Table 5 of the Kalum SRMP (see Appendix I, Table 26).

<sup>8</sup> Identified undeveloped watersheds in the Kalum SRMP Area include the Jesse, Emsley, Wathlsto, Hugh, Brim, Wahoo, and Owyacumish watersheds.

**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 I, Table 26) 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 I, Table 26):
  - 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 from the Kalum SRMP is to conserve rare plant communities<sup>9</sup> on the Skeena Islands as identified on Kalum SRMP Map 6 (see Appendix I, **Error! Reference source not found.**) according to (a), (b), (c), and (d) as described in the Ministerial Order – Land Use Objectives Regulation Amendment to Land Use Objective 10 – Skeena Islands (December 7, 2017):

- a. Within the High Conservation Areas<sup>10</sup>, retain 100% of the Crown forested land.

<sup>9</sup> 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)

<sup>10</sup> For the area identified as “Salvus”, government-led research activities, including harvesting for research purposes, is allowed

- b. Outside of the High Conservation Areas, retain a forested, harvest-free 50-metre buffer around all back channels.
- c. Outside the High Conservation Areas, retain a forested, harvest-free 50-metre buffer around all coniferous stumps, logs, and snags greater than 50 cm in diameter and around the live coniferous trees greater than 50 cm in diameter at breast height.
- d. Only where it is otherwise not practicable and the objective to conserve rare plant community complexes can be achieved, may new roads be constructed within the High Conservation Areas to access timber outside those areas.

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

During the term of this FSP, the FSP holder will comply with the Kalum SRMP (Ministerial Order – Land Use Objectives Regulation Amendment to Land Use Objective 10 – Skeena Islands December 7, 2017) Objective 10 (a) through (d).

#### **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 patches<sup>11</sup> in each cut block<sup>12</sup>, over the rotation, consistent with the targets in Table 6 of the Kalum SRMP (see Appendix I, Table 27). Shift or vary targets shown in Table 6 of the Kalum SRMP among cut blocks within a cut block aggregate<sup>13</sup> 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 of the Kalum SRMP (see Appendix I, Table 27). 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.
3. Authorize harvest within WTRAs of western red cedar or yellow cedar, consistent with 2.3.1.1 Strategy for First Nations cultural heritage resources in the Kalum FDU.

<sup>11</sup> 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.

<sup>12</sup> The wildlife tree patches may be external or internal to the cut block.

<sup>13</sup> 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.

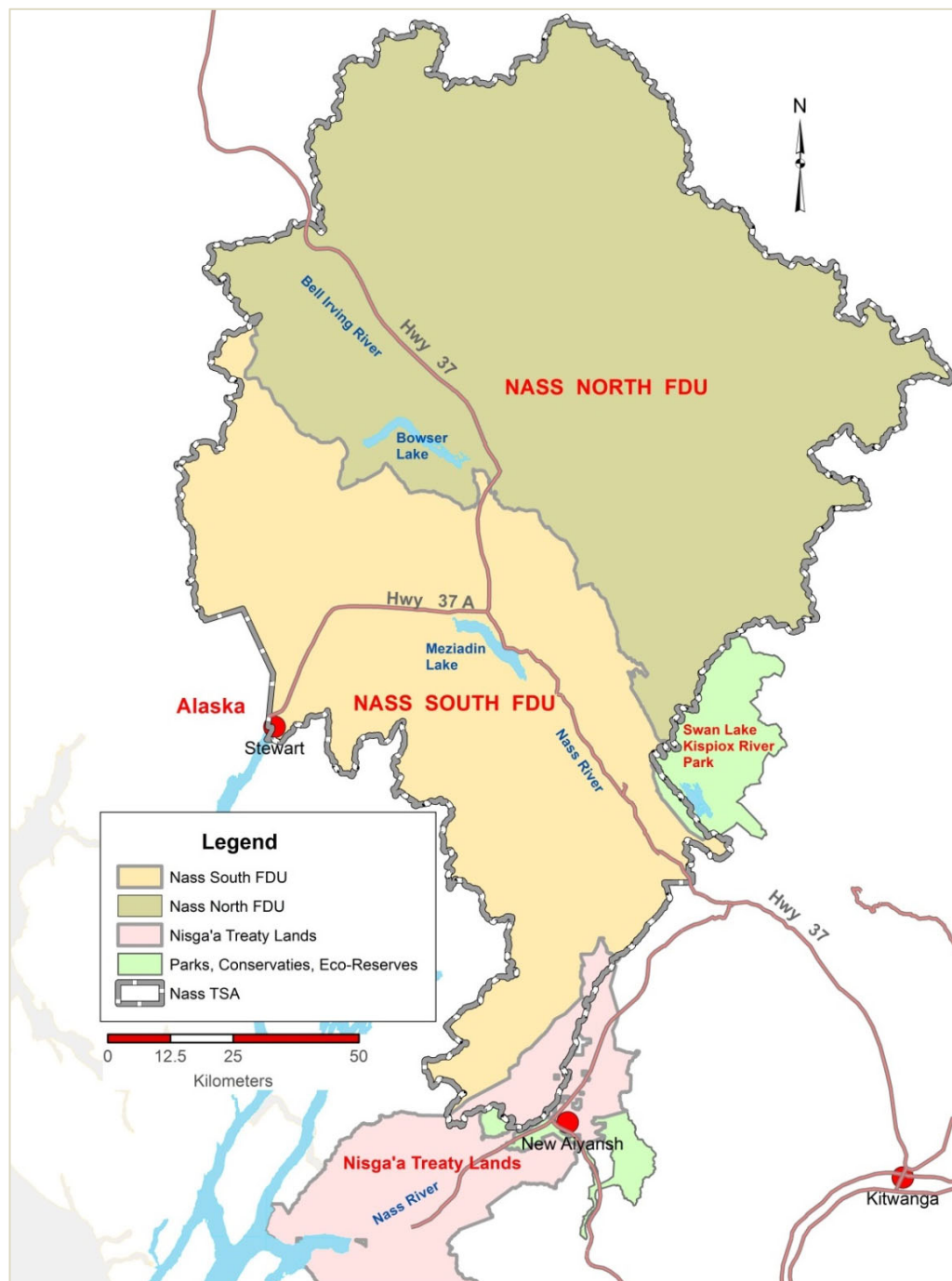
**2.8.6.2 Strategy for wildlife tree retention areas in the Kalum FDU**

During the term of this FSP, the FSP holder will not harvest timber within an established WTRA unless:

1. the trees on the net area to be reforested of the cutblock to which the WTRA relates have developed attributes that are consistent with a mature seral condition; or,
2. the WTRA was established by the FSP holder; and,
  - a. replacement WTRA(s) have been established that represent equivalent or greater area than the area to be harvested; and,
  - b. the replacement WTRA(s) have similar stand characteristics to the original WTRA; and,
  - c. replacement WTRA(s) are consistent with consistent with the targets in Table 6 of the Kalum SRMP (see Appendix I, Table 27) or,
3. the WTRA was established by another licensee; and,
  - a. the other licensee is not subject to FPPR s. 67; and,
    - I. a replacement is established as per 2. A. – c.; or,
  - b. the other licensee is subject to FPPR s. 67 and the Minister responsible provides an exemption under FPPR s. 91(2); and,
    - I. a replacement is established as per 2. A. – c.

### 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 . 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 II 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 s. 37, 38, 39, & 40	
Practice Requirement(s) Eligible for Exemption	FPPR s.12.2	<u>Decision</u> : No Exemption per FPPR s. 12.2 sought
	FPPR s. 35 & 36	<u>Decision</u> : Adopt FPPR s. 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 s. 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 and road building activities within proposed treaty settlement lands (refer to Map 17: Nass South SRMP – Gitanyow Treaty Settlement Lands Offer (2002) unless otherwise agreed to by Gitanyow Chiefs.

#### 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)<sup>14</sup>, the FSP holder will not harvest timber within proposed treaty settlement lands during the term of this FSP unless otherwise agreed to by Gitanyow Chiefs.

\* 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.

<sup>14</sup> Avoid timber harvesting within proposed treaty settlement lands (refer to **Error! Reference source not found.**, Map 17 Gitanyow Treaty Settlement Lands Offer (2002)

**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.
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*) sites<sup>15</sup> in forest ages ranging from 80 to 200 years<sup>16</sup> 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.

<sup>15</sup> 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.

<sup>16</sup> 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.

### 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
Practice Requirement(s) Eligible for Exemption	None

#### 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 from the Nass South SRMP LUOR Order

The objective for cultural heritage resources as set out in the Nass South SRMP LUOR order objective (35) 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, where timber harvesting and road construction are planned, 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 potential archaeological and cultural sites (location, nature and extent of cultural heritage resources) proximal to proposed harvest blocks and roads by conducting an initial office review of known information<sup>17</sup> and documenting the results.
2. Information share by providing the results of the initial review to potentially affected First Nations identified through the Consultative Areas Database and requesting 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. Where traditional use information is made available, the FSP Holder will hold any information received in confidence.

<sup>17</sup> Known information may include AOA's traditional use information, archaeological information, cultural sites and traditional use studies or other information made known to the FSP holder by an affected First Nation.

3. The FSP Holder will ensure that a Cultural Heritage Resource Evaluation (CHRE)<sup>18</sup> will be completed on all blocks and roads prior to harvesting or road construction activities occurring.
4. Timber harvesting and or road construction will be consistent with the recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (3) 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;
5. If the FSP Holder(s) and a specific First Nation have agreed to a written information sharing process, (1) through (4) above will not apply where they are inconsistent with that written information sharing process.
6. Ensure that if during timber harvesting and or road construction a previously unidentified cultural heritage resource feature is encountered on their cutblock or road, the FSP Holder will:
  - a. stop activity to the extent necessary to protect the cultural heritage resource until an assessment is carried out,
  - b. consult with the potentially affected First Nations with the details of the previously unidentified cultural heritage resource feature, and
  - c. ensure the FSP Holder's harvesting, road construction, or mechanical site preparation activities continue in a manner that follows the recommendations given in the assessment, that are practicable and are required to conserve or, if necessary, protect a cultural heritage resource if it is of continuing importance to the First Nations.

### **Objective 3.5.3 For cultural use of 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 cultural use of 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 yellow cedar in Wildlife Tree Retention Areas and Riparian Management Zones will

<sup>18</sup> **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.

be facilitated by the FSP holder to support a sustainable source of these species for First Nations traditional use.<sup>19</sup> 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.
2. at the request of a First Nation Council or Hereditary Chief, and prior to the lapsing of the cutting permit for any particular harvest area, authorize by letter of agreement between the First Nation Council or Hereditary Chief and the FSP holder the removal of western red cedar or cypress for cultural purposes from retention areas, including Wildlife Tree Retention Areas (WTRA) or Riparian Management Zones<sup>20</sup> (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 Natural 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 s. 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.  <b>Not Applicable</b> – 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"> <li>▪ Highway 37 (Stewart -Cassiar) through the Nass TSAs; and,</li> <li>▪ Highway 37A from Meziadin Junction to Stewart</li> </ul>

<sup>19</sup> 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.

<sup>20</sup> 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

### Objective 3.6.1 For visual quality in the Nass South FDU

The objective for visual quality for the Nass South FDU is to ensure that the altered forest landscape<sup>21</sup> 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 II, **Error! Reference source not found.**, 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,
  - 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.

<sup>21</sup> **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.

### 3.7 Recreation in the Nass South 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) and (h) through the: Order to Establish Objectives for a Recreation Site, Recreation Trail, or Interpretive Site (July 25, 1997); and, 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 **Error! Reference source not found.** 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)
<ul style="list-style-type: none"> <li>Recreation Sites with Established Objectives</li> </ul>	<ul style="list-style-type: none"> <li>Bonney Lake Recreation Site / 0622 (May 1, 1997)</li> <li>Jigsaw Lake Recreation Site / 3522 (May 10, 1996)</li> </ul>

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

Site or Trail Feature Type	Feature Name / Order or File # (Date)
<ul style="list-style-type: none"> <li>Recreation Trails with Established Objectives</li> </ul>	<ul style="list-style-type: none"> <li>Bonney Lake Portage Recreational Trails / 0623 (May 1, 1997)</li> </ul>

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

**Reference Information for this Objective**

<b>Type of Objective</b>	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)	
<b>Conditional Exemptions</b>	FPPR s. 12.3, 12.31, 12.32	
<b>Mandatory Practice Requirements</b>	FPPR s. 54, 58	
<b>Practice Requirement(s) Eligible for Exemption</b>	Exemption per FPPR s.12.3, 12.31, 12.32	<u>Decision</u> : No exemptions applied. The FSP holder will comply with FPPR s. 47, 48, 49, 50, 51, 52(2), 53, 55, 56, 57, 59, 60, & 61

#### **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 <sup>22</sup> 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)
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)

Map ID	Base Watershed (WSD) Unit Code and Order	Unit Name	ECA Threshold %
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 <sup>1</sup>	Basal Area Retention <sup>2</sup> Minimum <sup>3</sup> within RRZ	Riparian Management Zone Width – Minimum <sup>3</sup>	Basal Area Retention <sup>2</sup> Minimum within RMZ <sup>3</sup>
<b>Fish Streams: FPPR s. 47</b>					
S1 <sup>4</sup>	>20 m	50	100%	20	>=20%
S2 <sup>4</sup>	5 – 20 m	30	100%	20	>=20%
S3 <sup>4</sup>	1.5-5 m	20	100%	20	>=20%
S4	< 1.5 m	0	n/a	30	>=10%
<b>Non-Fish Streams: FPPR s. 47</b>					
S5	> 3 m	0	n/a	30	>=10%
S6	< 3 m	0	n/a	20	0%
<b>Wetlands: FPPR s. 48</b>					
W1 <sup>5</sup>	> 5 ha	10	100%	40	>10%
W2	1 – 5 ha	Not applicable: no W2s in the plan area			
W3 <sup>5</sup>	1— 5 ha	0	n/a	30	>10%
W4	0.5— 1 ha	Not applicable: no W4s in the plan area			
W5 <sup>5</sup>	Complex > 5 ha	10	100%	40	>10%
<b>Lakes: FPPR s. 49</b>					
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:

<sup>1</sup> Width measured in slope distance.<sup>2</sup> 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.<sup>3</sup> Reserves and Management Zones around all riparian features may be increased in size and % retention to meet management objectives for other resources.<sup>4</sup> Excluding 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).<sup>5</sup> Excluding 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 s. 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 functioning<sup>23</sup> 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 zone<sup>24</sup> of each stream, wetland and lake within a Water Management Unit identified in the Nass South

<sup>23</sup> **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.

<sup>24</sup> 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

SRMP LUOR Order Schedule K (included in Appendix II) 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*<sup>25</sup> or as set out in (b) below; and,
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 3.10.2.9 and Strategies 3.10.2.10 and 3.10.2.1111 (Hydriparian zones and Forest Ecosystem Networks management)

\* Abbreviated Relevant FPPR sections:

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.

<sup>25</sup> '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".

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 an 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 an 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 an 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), Sept. 17, 2014. GAR Order: Specified Area #6-282 Grizzly Bear (Nass TSA), Oct. 20, 2014. GAR Order: Specified Area #6-292 Thinhorn Sheep Disease Prevention, Feb. 5, 2020
Mandatory Practice Requirements	FPPR s. 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 effectiveness<sup>26</sup> 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,

<sup>26</sup> "Effectiveness" means the continued use of a habitat by the species that historically utilized it.

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, thimhorn sheep, 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 thimhorn sheep, GAR order SA #6-292;
4. for grizzly bear, GAR order SA #6-282; and,
5. 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:

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, 3.10.2.4, 3.10.2.6, 3.10.2.77, 3.10.2.88, and 3.10.2.99, and Strategies 3.10.2.1010 and 3.10.2.1111 (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 primary forest activities will maintain breeding<sup>27</sup>, foraging<sup>28</sup>, nesting, and post-fledgling<sup>29</sup> habitats at known goshawk nest areas, in order to support continued use of and reproduction in those areas, by ensuring that when the FSP Holder's operations are planned to occur within 2 km of known goshawk nest sites<sup>30</sup>:

<sup>27</sup> For the purpose of this FSP the breeding area is the combination of the nest area and post-fledging habitat identified in the Nass South SRMP LUOR. Breeding area represents the fundamental ecological unit used by goshawks for nesting and rearing activities over many years as per Kari-Stuart Smith et al. 2012.

<sup>28</sup> Foraging habitat represents the breeding home range defined by the Area used by a pair of goshawks during the breeding season, which encompasses both the breeding area and foraging areas as per Kari-Stuart Smith et al. 2012.

<sup>29</sup> Post-fledging habitat is the area used by fledgling goshawks, within a given year, from fledging until dispersal as per Kari-Stuart Smith et al. 2012.

<sup>30</sup> A "known goshawk nest site" is defined as a nest site, identified by a Qualified Professional, to belong to a goshawk and that has been active in the past 5 years.

1. An assessment of the nesting, breeding, foraging, and post-fledgling habitat associated with an identified nest is completed by a Qualified Professional (QP). This assessment should be consistent with the 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) with the intention to determine:
  - a. The location of all nests, and the associated breeding, foraging, and post-fledgling habitat;
  - b. If the goshawk nest is active, or recently active; and,
  - c. To assess the long-term suitability of the nest, breeding, foraging, and post-fledgling habitat
2. The FSP Holder will work in consultation with the QP who completed the report to ensure their operations are consistent with Objective 3.9.4.

### 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 s. 12.4 & 12.5	
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR s. 12.4, 12.5	<u>Decision:</u> Exemptions applied as follows:  For biodiversity resources and wildlife trees in the Nass South FDU, the FSP holders adopts the Objectives with conditions (as Results and Strategies) as set out in the Nass South SRMP LUOR Order.

#### 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 communities<sup>31</sup> 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 community<sup>32</sup> 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;

<sup>31</sup> 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.

<sup>32</sup> 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.

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.
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.  $\geq 70\%$  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 II).

**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

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 2	MHmm2	30 to 40	30 to 40	20 to 40
	MHun <sup>33</sup>	30 to 40	30 to 40	20 to 40
	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
		ESSFwv	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	ESSFwv	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	ESSFwv	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	ESSFwv	Early	<40	n/a
			Mature + Old	>120	>19
			Old	>250	>19
		MHmm2	Early	<40	n/a
			Mature + Old	>120	>19
			Old	>250	>19

<sup>33</sup> Mountain Hemlock/undifferentiated (MHun)

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

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

### 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. If necessary, an action plan is prepared to address seral stage imbalances identified in section 3 above;
5. in respect of Objective 3.10.2, 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 CMNRD 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 aggregate<sup>34</sup>, 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);
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,

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<sup>34</sup> 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.

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 yellow cedar, consistent with Strategy 3.5.3.1.

#### **3.10.2.5 Strategy for wildlife tree retention areas in the Nass South FDU**

During the term of this FSP, the FSP holder will not harvest timber within an established WTRA unless:

1. the trees on the net area to be reforested of the cutblock to which the WTRA relates have developed attributes that are consistent with a mature seral condition; or,
2. the WTRA was established by the FSP holder; and,
  - a. replacement WTRA(s) have been established that represent equivalent or greater area than the area to be harvested; and,
  - b. replacement WTRA(s) have similar stand characteristics to the original WTRA.; and,
  - c. replacement WTRA(s) are consistent with the targets in Objective 3.10.2; or,
3. the WTRA was established by another licensee; and,
  - a. the other licensee is not subject to FPPR s. 67; and,
    - I. a replacement is established as per 2. a. - c.; or,
  - b. the other licensee is subject to FPPR s. 67 and the Minister responsible provides an exemption under FPPR s. 91(2); and,
    - I. a replacement is established as per 2. a. – c.

#### **3.10.2.6 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)*.

#### **3.10.2.7 Result for red-listed<sup>35</sup> blue-listed<sup>36</sup> 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,

<sup>35</sup> 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.

<sup>36</sup> 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.

- 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.

#### **3.10.2.8 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.

#### **3.10.2.9 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 zone<sup>37</sup> within the Ecosystem Network identified on the Nass South SRMP LUOR Order Schedule I Map is retained, unless the Ecosystem Network is

<sup>37</sup> 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.

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 <sup>38</sup> or Minor <sup>39</sup> 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 Network, including those: <ul style="list-style-type: none"> <li>approved under section 196(1) of the Forest and Range Practices Act;</li> <li>as declared areas under section 14(4) of the Forest Planning and Practices Regulation; or,</li> <li>that have a cutting permit in place</li> </ul>	Minor	To the edge of the cut block, temporarily, to allow timber harvest. Return to original location following completion of timber harvest and silvicultural responsibilities.
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).	Minor	To the extent necessary to eliminate the threat to the land and water adjacent to the Ecosystem Network.
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.	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.	To improve the degree to which the Ecosystem Network captures values for First Nations, provides habitat for wildlife, or generally benefits biodiversity. To increase the accuracy of the EN in terms of how it maps the hydriparian zone.

### 3.10.2.10 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

<sup>38</sup> “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.

<sup>39</sup> “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.

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.

#### **3.10.2.11 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:

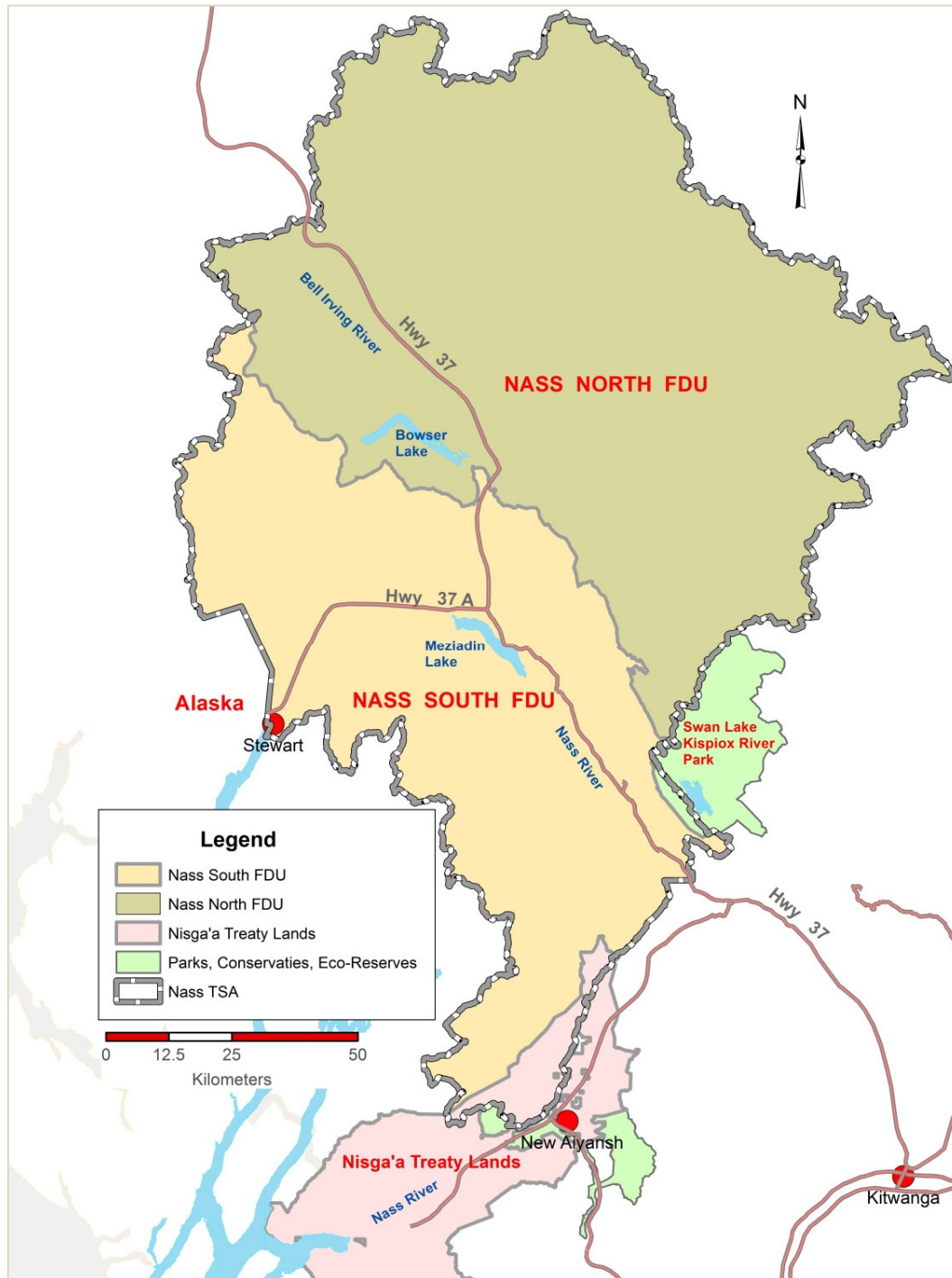
1. continuous forest cover;
2. small discontinuous canopy gaps;
3.  $\geq 70\%$  structure and function<sup>40</sup> retained, including large, old trees, snags, and coarse woody debris;
4. multi-canopy levels, multi-aged forest;
5. in conjunction with the forested core, maintain interior old forest conditions  $\geq 100$  metres in width; and,
6. no permanent road access, except where, for ecological or economic reasons, no other alternative is possible.

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<sup>40</sup> 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 (m<sup>2</sup>) 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, an *Order Establishing Provincial Non-spatial Old Growth Objectives*, effective June 30, 2004, and various GAR orders designating, Wildlife Habitat Areas for grizzly bear, a Specified Area for thimhorn sheep, 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 s. 37, 38, 39, & 40	
Practice Requirement(s) Eligible for Exemption	FPPR s.12.2	<u>Decision</u> : No Exemption per FPPR s. 12.2 sought
	FPPR s. 35 & 36	<u>Decision</u> : Adopt FPPR s. 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 s. 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, where timber harvesting and road construction are planned, 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 potential archaeological and cultural sites (location, nature and extent of cultural heritage resources) proximal to proposed harvest blocks and roads by conducting an initial office review of known information<sup>41</sup> and documenting the results.
2. Information share by providing the results of the initial review to potentially affected First Nations identified through the Consultative Areas Database and requesting 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. Where traditional use information is made available, the FSP Holder will hold any information received in confidence.
3. The FSP Holder will ensure that a Cultural Heritage Resource Evaluation (CHRE)<sup>42</sup> will be completed on all blocks and roads prior to harvesting or road construction activities occurring.

<sup>41</sup> Known information may include AOA's, traditional use information, archaeological information, cultural sites and traditional use studies or other information made known to the FSP holder by an affected First Nation.

<sup>42</sup> **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:

4. Timber harvesting and or road construction will be consistent with the recommendations given in the Cultural Heritage Resource Evaluation referred to in subparagraph (3) 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;
5. If the FSP Holder(s) and a specific First Nation have agreed to a written information sharing process, (1) through (4) above will not apply where they are inconsistent with that written information sharing process.
6. Ensure that if during timber harvesting and or road construction a previously unidentified cultural heritage resource feature is encountered on their cutblock or road, the FSP Holder will:
  - a. stop activity to the extent necessary to protect the cultural heritage resource until an assessment is carried out,
  - b. consult with the potentially affected First Nations with the details of the previously unidentified cultural heritage resource feature, and
  - c. ensure the FSP Holder's harvesting, road construction, or mechanical site preparation activities continue in a manner that follows the recommendations given in the assessment, that are practicable and are required to conserve or, if necessary, protect a cultural heritage resource if it is of continuing importance to the First Nations.

#### **Objective 4.3.2 For cultural use of cedar adopted from Nass South SRMP LUOR Order**

The objective for cultural use of cedar in the Nass North FDU has been adopted from the Nass South SRMP LUOR Order, Objective 36, which 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 cultural use of 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 yellow cedar 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.<sup>43</sup> The FSP holder will:

1. communicate with First Nations identified through Strategy 4.3.1.1 (2) cutblocks with a component of cedar prior to the start of harvesting operations.
2. at the request of a First Nation Council or Hereditary Chief, and prior to the lapsing of the cutting permit for any particular harvest area, authorize by letter of agreement between

- 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.

<sup>43</sup> 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.

the First Nation Council and the FSP holder the removal of western red cedar or cypress for cultural purposes from retention areas, including Wildlife Tree Retention Areas (WTRA) or Riparian Management Zones<sup>44</sup> (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.  <b>Not Applicable</b> - 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"> <li>▪ Highway 37 (Stewart-Cassiar) through the Nass TSA</li> </ul>

##### 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<sup>45</sup> for scenic areas meets the visual quality objective for the scenic area.

<sup>44</sup> 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

<sup>45</sup> **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;

**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 II, **Error! Reference source not found.**, 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,
  - 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.

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**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.

## 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 s. 12.3, 12.31, 12.32	
Mandatory Practice Requirements	FPPR s. 54, 58	
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR s.12.3, 12.31, 12.32	Decision: No exemptions applied. The FSP holder will comply with FPPR s. 47, 48, 49, 50, 51, 52(2), 53, 55, 56, 57, 59, 60, & 61

### 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. 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 <sup>1</sup>	Riparian Reserve Zone Width <sup>1</sup>	Riparian Management Zone Width <sup>1</sup>	Basal Area Retention <sup>2</sup> Minimum within RMZ <sup>3</sup>
<b>Fish Streams: FPPR s. 47</b>					
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 %
<b>Non-Fish Streams: FPPR s. 47</b>					
S5	> 3 m	30 m	0 m	30 m	>= 10 %
S6	< 3 m	20 m	0 m	20 m	N/A
<b>Wetlands: FPPR s. 48</b>					
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 %
<b>Lakes: FPPR s. 49</b>					
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 %

<sup>1</sup> Width measured in slope distance.

<sup>2</sup> 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.

<sup>3</sup> 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 an 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 an 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 an 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. GAR Order-Specified Area #6-282 Grizzly Bear (Nass TSA), October 20, 2014. GAR Order Specified Area #6-292 Thinhorn Sheep Disease Prevention – Skeena Region, February 5, 2020.
Mandatory Practice Requirements	FPPR s. 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, thinhorn sheep, 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;
3. for thinhorn sheep, GAR order SA #6-292; and
4. for grizzly bear, GAR order SA #6-282.

**4.6.1.2 Result for wildlife in the Nass North FDU**

1. 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, Grizzly Bear, and Thinhorn Sheep), **Error! Reference source not found.** (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) Order Establishing Provincial Non-Spatial Old Growth Objectives, June 30, 2004 (under the Forest Practices Code)	
Mandatory Practice Requirements	FPPR s. 68 (Coarse woody debris)	
Conditional Exemptions	FPPR s. 12.4 & 12.5	
Practice Requirement(s) Eligible for Exemption	Exemption per FPPR s. 12.4	<u>Decision:</u> Exemption 12.4 applied as follows: As indicated in 4.7.1.1 Result for landscape level biodiversity in the Nass North FDU and as indicated in 4.7.1.2 Strategy for seral stage and patch size distribution in the Nass North FDU
	Exemption per FPPR s. 12.5	<u>Decision:</u> Exemption 12.5 applied as follows: As indicated in 4.3.2.1 Strategy for cultural use of cedar and as indicated in 4.7.1.4 Strategy for wildlife tree retention areas in the Nass North FDU

**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.
3. In respect of the *Order Establishing Provincial Non-Spatial Old Growth Objectives* (2004), the objective set by government for old-growth is: To contribute to the conservation of biodiversity, licencees must maintain old forest by biogeoclimatic variant within each landscape unit according to the age of old forest and the percentage of old forest retention that is specified in Tables 1 through 4 (of the referenced Order) and the assignment of Natural Disturbance Types outlined in Appendix 3 (of the referenced Order), and subject to provisions 5 through 9 (of the referenced Order).

**4.7.1.1 Result for landscape level biodiversity in the Nass North FDU**

In respect of Objective 4.7.1 (3 - landscape level biodiversity), during the term of this FSP the FSP holder will adopt as results the seral stage targets included below as Table 15 within the Nass North FDU. These targets are consistent with the provincially established non-spatial old growth objectives described in Objective 4.7.1 (3).

**Table 15. Nass North FDU – Seral Stage Requirements**

Landscape Unit	Biodiversity Emphasis Option	Natural Disturbance Type	Biogeoclimatic Ecosystem Classification	Seral Stage	Age (yrs)	Forest Area (%)
Bowser	Low	3	ESSFun	Early	<40	n/a
				Mature + Old	>120	>14
				Old	>140	>14
		1	ICHvc	Early	<40	n/a
				Mature + Old	>100	>17
				Old	>250	>13
		1	MHmm2	Early	<40	n/a
				Mature + Old	>120	>19
				Old	>250	>19
Brown Bear	Low	2	ICHmc1	Early	<40	n/a
				Mature + Old	>100	>15
				Old	>250	>9
		1	MHmm2	Early	<40	n/a
				Mature + Old	>120	>19
				Old	>250	>19
Craven	Intermediate	3	ESSFun	Early	<40	n/a
				Mature + Old	>120	>23
				Old	>140	>14
		3	SBSun	Early	>40	n/a
				Mature + Old	>100	>23
				Old	>140	>11
		1	ICHvn	Early	<40	n/a
				Mature + Old	>100	>34
				Old	>250	>13
Madely	Intermediate	2	ICHmc1	Early	<40	n/a
				Mature + Old	>100	>31
				Old	>250	>9
		1	MHmm2	Early	<40	n/a
				Mature + Old	>120	>36
				Old	>250	>19
Muskaboo	Low	1	ESSFwv	Early	<40	n/a
				Mature + Old	>120	>19
				Old	>140	>19
		3	ESSFun	Early	<40	n/a
				Mature + Old	>120	>14
				Old	>140	>14

Landscape Unit	Biodiversity Emphasis Option	Natural Disturbance Type	Biogeoclimatic Ecosystem Classification	Seral Stage	Age (yrs)	Forest Area (%)
		3	SBSmc2	Early	>40	n/a
				Mature + Old	>100	>11
				Old	>140	>11
Oweege	Low	3	ESSFun	Early	<40	n/a
				Mature + Old	>120	>14
				Old	>140	>14
		1	ICHvc	Early	<40	n/a
				Mature + Old	>100	>17
				Old	>250	>13
Sallysout	Low	3	ESSFun	Early	<40	n/a
				Mature + Old	>120	>14
				Old	>140	>14
		1	ESSFwv	Early	<40	n/a
				Mature + Old	>120	>19
				Old	>140	>19
		2	ICHmc1	Early	<40	n/a
				Mature + Old	>100	>15
				Old	>250	>9
		1	ICHvc	Early	<40	n/a
				Mature + Old	>100	>17
				Old	>250	>13
		1	MHmm2	Early	<40	n/a
				Mature + Old	>120	>19
				Old	>250	>19
		3	SBSmc2	Early	>40	n/a
				Mature + Old	>100	>11
				Old	>140	>11
Taylor – Dandochax	Intermediate	3	ESSFun	Early	<40	n/a
				Mature + Old	>120	>23
				Old	>140	>14
		1	ESSFwv	Early	<40	n/a
				Mature + Old	>120	>36
				Old	>140	>19
		2	ICHmc1	Early	<40	n/a
				Mature + Old	>100	>31
				Old	>250	>9
		1	ICHvc	Early	<40	n/a
				Mature + Old	>100	>34
				Old	>250	>13
		1	MHmm2	Early	<40	n/a
				Mature + Old	>120	>36
				Old	>250	>19
		3	SBSmc2	Early	>40	n/a
				Mature + Old	>100	>23

Landscape Unit	Biodiversity Emphasis Option	Natural Disturbance Type	Biogeoclimatic Ecosystem Classification	Seral Stage	Age (yrs)	Forest Area (%)
Tintina	Low	3	ESSFun	Old	>140	>11
				Early	<40	n/a
				Mature + Old	>120	>14
		2	ICHmc1	Old	>140	>14
				Early	<40	n/a
				Mature + Old	>100	>15
		1	ICHvc	Old	>250	>9
				Early	<40	n/a
				Mature + Old	>100	>17
		1	MHmm2	Old	>250	>13
				Early	<40	n/a
				Mature + Old	>120	>19
Wildfire	Intermediate	3	ESSFun	Old	>250	>19
				Early	<40	n/a
				Mature + Old	>120	>23
		1	ICHvc	Old	>140	>14
				Early	<40	n/a
				Mature + Old	>100	>34
		1	MHmm2	Old	>250	>13
				Early	<40	n/a
				Mature + Old	>120	>36
				Old	>250	>19

#### 4.7.1.2 Strategy for seral stage and patch size distribution in the Nass North FDU

In respect of Objective 4.7.1 (3 - landscape level biodiversity), 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) by biogeoclimatic variant within the Nass North 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 4.7.1 (3 - landscape level biodiversity), 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 4.7.1.1 - Result for landscape level biodiversity in the Nass North FDU (Table 15).
4. If necessary, an action plan is prepared to address seral stage imbalances identified in section 3 above;

5. In respect of Objective 4.7.1 (3 - landscape level biodiversity), 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 North FDU;
  - b. The target patch size distribution for the Nass North FDU as determined by NDT Type from the *Biodiversity Guidebook* (Forest Practices code of BC, September 1995); and,
  - c. Address patch size imbalances, based on the targets from 5. (b)
6. If necessary, an action plan is prepared to address patch size distribution imbalances identified in section 5 above;
7. a summary of the seral stage and allowable patch size distribution analysis results is completed for the Nass North FDU.

#### **4.7.1.3 Result for seral stage distribution in the Nass North FDU**

In respect of Objective 4.7.1 (3 - landscape level biodiversity), during the term of this FSP, the FSP holder will ensure that;

1. every three years, by June 1st, a report summarizing the status of the seral distribution within the Nass North 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 Table 15 for seral stages, a rationale will be prepared that describes management strategies for moving towards the target levels.

#### **4.7.1.4 Strategy for wildlife tree retention areas in the Nass North FDU**

During the term of this FSP, the FSP holder will not harvest timber within an established WTRA unless:

1. the trees on the net area to be reforested of the cutblock to which the WTRA relates have developed attributes that are consistent with a mature seral condition; or,
2. the WTRA was established by the FSP holder; and,
  - a. replacement WTRA(s) have been established that represent equivalent or greater area than the area to be harvested; and,
  - b. replacement WTRA(s) have similar stand characteristics to the original WTRA.; and,
  - c. replacement WTRA(s) are consistent with the targets in FPPR s. 66; or,
3. the WTRA was established by another licensee; and,
  - a. the other licensee is not subject to FPPR s. 67; and,
    - I. a replacement is established as per 2. a - c.; or,
  - b. the other licensee is subject to FPPR s. 67 and the Minister responsible provides an exemption under FPPR s. 91(2); and,
    - I. a replacement is established as per 2. a - c.

## 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 adopted 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*) sites<sup>46</sup> in forest ages ranging from 80 to 200 years<sup>47</sup> 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.

<sup>46</sup> 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.

<sup>47</sup> 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.

## 5.0 ADDITIONAL FSP INFORMATION

In addition to the objectives, strategies, and results, the following measure 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

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. Section 6.19 Stocking Standards Tables and Footnotes 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 FDU's 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.
3. the late free growing date is 20 years for all standards units.
4. free Growing can be declared or assessed no earlier than 12 months after completion of harvest, except for stands prescribed with SEDR stocking standards where Free Growing can be declared no earlier than 24 months after completion of harvest.
5. For the purposes of FPPR s 46.11(2), for an area to be considered mappable its minimum dimension must be at least 40 metres.

### 6.2 Regeneration Method and Delay

The regeneration delay will be as indicated in Table 16. Even-Aged and Wildlife Habitat 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 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.

## 6.4 Stocking Standards within Ecosystem Complexes

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. species acceptability will be according to Table 16. Even-Aged and Wildlife Habitat Stocking Standards and Table 17. Footnotes for Stocking Standards.

## 6.5 Species Acceptability – Spruce leader weevil

Resistant stock mitigates risk of spruce weevil damage. For background information, reference the Ss Weevil Decision Tool (<https://jem-online.org/index.php/jem/article/view/358/273>) 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.

## 6.6 Even-aged Stocking Standards

Even-aged management stocking standards set out in Table 16. Even-Aged and Wildlife Habitat Stocking Standards apply to silviculture systems where:

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 10m<sup>2</sup> or less following harvesting (including SEDR areas); and/or,
3. opening patches are less than 0.25 ha 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 Table 19. Uneven-aged Stocking Standards apply to uneven-aged silvicultural systems when;

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

Multi-storey stocking standards set out in Table 19. Uneven-aged Stocking Standards may apply to even-aged silvicultural systems when;

1. Layer 1 + Layer 2 basal area is < 10m<sup>2</sup>/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 Table 16. Even-Aged and Wildlife Habitat Stocking Standards using 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 non-contiguous 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. If the results of a Free-Growing survey indicate the density of the stand exceeds the maximum density identified in Table 18. Stocking Standards for Identified high value Grizzly bear forested habitat site series in the Coastal Western Hemlock Zone of the Kalum TSA for the applicable site series, but does not exceed 4000 stems per hectare then a gap survey must be conducted (as per the methods identified in 6.).
6. Forage areas will be managed based on the proportion of the Standards Unit that contains canopy gaps. These canopy gaps will provide foraging opportunities for Grizzly Bears or Moose. The long-term objective for forage areas is to maintain a target minimum of 20% canopy gaps of the net area to reforest (NAR) that will remain throughout the life of the stand. At the time of a free-growing survey, canopy gaps of 40-70% of the NAR should be considered the soft target. Free-growing surveys will identify whether a plot qualifies as a ‘gap’ or ‘forested’. At a minimum, 20% of survey plots must meet the criteria of a gap. A plot is considered a gap, where all conifers greater than 50cm, are contained within a single 1.99m radius circle<sup>48</sup> within the 3.99m radius survey plot. Any plots surveyed where the conifers greater than 50cm do not fall within a 1.99m radius circle will not be considered a gap and instead classified as forested. Acceptable free-growing broadleaf trees will contribute to the stocking of the free growing survey as per the applicable stocking standards, however they will not affect whether a plot is considered a gap.
7. The results of the gap survey will determine the Operational Adjustment Factor<sup>49</sup> stocking reduction to be applied (OAF1). A stocking reduction equivalent to the level of gapiness

<sup>48</sup> 1.99m radius equates to 12.5 m<sup>2</sup> and represents 25% of a 3.99m radius survey plot

<sup>49</sup> 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.

will be applied to manage for the long-term timber supply implications of canopy gaps. For example, if 30% of the survey at free-growing is classified as a gap, an OAF1 stocking reduction factor of 30% will be applied.

8. If the results of the Free-Growing survey indicate the density of the stand exceeds 4000 stems per hectare, or the gap survey indicates sufficient forage gaps have not been maintained, a juvenile spacing entry must be completed. The objective of this 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 m<sup>2</sup> 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.

### Application of the SEDRSS

In applying the SEDRSS standards:

1. The minimum stand area to be considered for SEDRSS is 1 hectare;
2. 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;
3. Stands must have between 10 and 40 m<sup>2</sup> of dispersed residual basal area following harvesting; stands with less than the minimum 10m<sup>2</sup>/ha of Dispersed Basal Area Retention requirement are to be managed using other (generally even-age) stocking standards;
4. Areas of 0.25 ha or larger that were not harvested or disturbed and have more than 40 m<sup>2</sup> 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;
5. Areas 1 hectare or larger that have:
  - a. more than 40 m<sup>2</sup>/ha of Dispersed Basal Area Retention of ecologically suitable species that meet the FG damage criteria following harvesting; and,
  - b. 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 as per section 44 (3) (h) of FPPR that does not require regeneration. The commercial thinning stocking standards are:

1. The preferred and acceptable species in Table 16. Even-Aged and Wildlife Habitat Stocking Standards and,
  - a. Greater than 60% of the minimum preferred and acceptable stocking level by BEC unit as outlined in Table 16. Even-Aged and Wildlife Habitat Stocking Standards; Or,
  - b. Retain a minimum basal area of 30 m<sup>2</sup>/ hectare in retained merchantable trees.

The application of the standards described in 1. (a) and (b) apply across the overall net area to be reforested (NAR).

## 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, a well-spaced tree (or acceptable residual tree) must meet the Standards described in Table 16. Even-Aged and Wildlife Habitat Stocking Standards in addition to the criteria for health, form and vigour, as described in the *Silviculture Survey Procedures Manual*.

## 6.13 Minimum Horizontal Inter-Tree Distance

Unless otherwise stated in 6.19, 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.
  - e. 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); 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;
2. competing brush is defined as deleterious species that are over-topping crop trees or have the potential to overtop crop trees;
3. certain broadleaf species may not be considered competing vegetation when located nearby riparian areas as described in section 6.16 to help promote biodiversity and riparian values.
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 Broadleaf Species

Broadleaf (Deciduous) species are noted in the Stocking standards, and will be used as follows: Cottonwood (Act)

- is a commercial species and will be considered a preferred or acceptable species as noted in the stocking standards in Table 16. Even-Aged and Wildlife Habitat Stocking Standards and Table 17. Footnotes for Stocking Standards

### Red Alder (Dr)

- is a commercial species and where utilized from a stand where alder was a leading species ( $\geq 30\%$  of original stand composition) alder will be considered a preferred or acceptable species as noted in the stocking standards in Table 16. Even-Aged and Wildlife Habitat Stocking Standards and Table 17. Footnotes for Stocking Standards

Where a Site Plan has identified management for a component of broadleaves, broadleaves (other than cottonwood or alder as noted in the previous bullet) may be used as a preferred or acceptable species. The original species composition of broadleaves for these broadleaf management areas must be  $\geq 30\%$

## 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 5m 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.

## 6.19 Stocking Standards Tables and Footnotes

The following Tables provide the stocking standard identification numbers, applicable BEC zones and site series, regeneration guides, free growing guides, and applicable footnotes for ecosystems that may be found within the FDUs established by 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).



**Table 16. Even-Aged and Wildlife Habitat Stocking Standards**

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide							Free Growing Guide		
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
BWBSdk1												
1072016	dk1	01	Pl Sw <sup>32</sup>	Bl Sb	At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072017	dk1	02*	Pl	Sw Sb	At <sup>b</sup>	1000	500	400	7	20	Pl Others	1.6 0.6
1072018	dk1	03	Pl	Sw <sup>28</sup>	At <sup>b</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072019	dk1	04	Pl Sb <sup>50</sup>	Sw <sup>32</sup>	At <sup>b</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072020	dk1	05	Pl Sw	Bl Sb	At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072021	dk1	06	Pl Sw <sup>32</sup>	Bl Sb	Ac <sup>b</sup> At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072022	dk1	07	Pl <sup>1</sup> Sb <sup>1</sup> Sw <sup>1,32</sup>	Bl <sup>50</sup>	At <sup>b</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072023	dk1	08	Sw <sup>1,32</sup>	Pl <sup>1</sup> Bl <sup>50</sup> Sb	Ac <sup>b</sup> At <sup>b</sup> Ep <sup>b</sup>	1000	500	400	4	20	Pl Others	1.6 0.8
1072024	dk1	09*	Sb <sup>1</sup> Sw <sup>1,32</sup>	Pl <sup>1</sup>		400	200	200	4	20	Pl Others	1.6 0.6
1072025	dk1	10*	Sb <sup>1</sup> Sw <sup>1,32</sup>	Pl <sup>1</sup>		400	200	200	4	20	Pl Others	1.6 0.6
1072026	dk1	11*	Sb <sup>1</sup> Sw <sup>1</sup>	Pl <sup>1</sup>	Ac <sup>b</sup> At <sup>b</sup>	400	200	200	4	20	Pl Others	1.6 0.6

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide							Free Growing Guide		
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
-	dk1	31	non-forested			-	-	-	-	20		
-	dk1	32	non-forested			-	-	-	-	20		
-	dk1	81	non-forested			-	-	-	-	20		
BWBSdk2												
1072027	dk2	01	Pl Sw <sup>32</sup>	Sb	At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072028	dk2	02*	Pl	Sb Sw	At <sup>b</sup>	1000	500	400	7	20	Pl Others	1.6 0.6
1072029	dk2	03	Pl Sb <sup>50</sup>	Sw <sup>32</sup>	At <sup>b</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072030	dk2	04	Pl Sb Sw	Lt	At <sup>b</sup>	1000	500	400	4	20	Pl Others	1.6 0.6
1072031	dk2	05	Pl Sw <sup>32</sup>		At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	7	20	Pl Others	1.6 0.8
1072032	dk2	06	Sw <sup>1,32</sup>	Sb Pl <sup>1</sup> Lt <sup>1</sup>	Acb <sup>a</sup> At <sup>b</sup> Ep <sup>b</sup>	1000	500	400	4	20	Pl Others	1.6 0.8
1072033	dk2	07*	Lt <sup>1</sup> Sb <sup>1</sup> Sw <sup>1,32</sup>	Pl <sup>1</sup>		400	200	200	4	20	Pl Others	1.6 0.6
1072034	dk2	08*	Lt <sup>1</sup> Sb <sup>1</sup> Sw <sup>1,32</sup>			400	200	200	4	20	All	0.6
-	dk2	31	non-forested			-	-	-	-	20		

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide							Free Growing Guide		
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
-	dk2	32	non-forested			-	-	-	-	20		
-	dk2	81	non-forested			-	-	-	-	20		
CWHvh2												
1071823	vh2	01	Cw <sup>48</sup> Hw Yc <sup>48</sup>	Ba Ss <sup>35</sup> Pl	Dr <sup>b</sup>	900	500	400	6	20	Hw, Pl, Ss Cw, Yc Ba Others	2.0 1.5 1.4 1.0
1071824	vh2	02*	Pl Cw <sup>48</sup> Yc <sup>48</sup>	Hw		400	200	200	3	20	Pl Others	1.4 1.0
1071825	vh2	03	Cw <sup>48</sup> Hw Pl Yc <sup>48</sup>		Dr <sup>b</sup>	800	400	400	6	20	Hw Pl Others	1.8 1.4 1.0
1071826	vh2	04	Ba Hw Ss Cw <sup>48</sup>	Yc <sup>48</sup>	Dr <sup>b</sup>	900	500	400	6	20	Hw, Ss Cw, Yc Ba Others	2.0 1.5 1.4 1.0
1071827	vh2	05	Ba Cw <sup>48</sup> Ss	Hw <sup>2</sup> Yc <sup>48</sup>	Dr <sup>b</sup>	900	500	400	3	20	Hw, Ss Cw, Yc Ba Others	2.0 1.5 1.4 1.0
1071828	vh2	06	Ba Cw <sup>48</sup> Ss	Hw <sup>2</sup> Yc <sup>48</sup>	Dr <sup>b</sup>	900	500	400	3	20	Hw, Ss Cw, Yc Ba Others	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	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071829	vh2	07	Ba Cw <sup>48</sup> Ss	Hw <sup>2</sup> Yc <sup>48</sup>	Dr <sup>b</sup>	900	500	400	3	20	Hw, Ss Cw, Yc Ba Others	2.0 1.5 1.4 1.0
1071830	vh2	08	Cw <sup>48</sup> Ss	Ba Hw	Dr <sup>a</sup>	900	500	400	3	20	Hw, Ss Cw, Yc Ba Others	2.0 1.5 1.4 1.0
1071832	vh2	09	Ss <sup>1</sup> Cw <sup>1,48</sup>	Ba <sup>1</sup>	Dr <sup>a</sup>	900	500	400	3	20	Hw, Ss Cw Ba Others	2.0 1.5 1.4 1.0
-	vh2	10*	no conifers		Dr <sup>b</sup>	-	-	-	-	-	-	
1071833	vh2	11	Cw <sup>1,48</sup> Hw <sup>1</sup> Yc <sup>1,48</sup>	Pl <sup>1</sup>		800	400	400	3	20	Hw Pl Others	1.8 1.4 1.0
1071834	vh2	12*	Cw <sup>1,48</sup> Pl <sup>1</sup> Yc <sup>1,48</sup>			400	200	200	3	20	Pl Others	1.4 1.0
1071835	vh2	13	Cw <sup>1,48</sup> Yc <sup>1,48</sup>	Hw <sup>1</sup> Ss <sup>1</sup>	Dr <sup>b</sup>	800	400	400	3	20	Ss Hw Others	2.0 1.8 1.0
1071836	vh2	14*	Ss	Cw <sup>48</sup> Pl Hw		400	200	200	3	20	Ss Hw Pl Others	2.0 1.8 1.4 1.0
1071837	vh2	15	Ss	Cw <sup>48</sup> Hw		900	500	400	3	20	Hw, Ss Cw	2.0 1.5

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071838	vh2	16*	Ss	Cw <sup>48</sup> Pl Hw		400	200	200	3	20	Ss Hw Pl Others	2.0 1.8 1.4 1.0
1071839	vh2	17	Ss	Cw <sup>48</sup> Hw Yc <sup>48</sup>	Dr <sup>b</sup>	900	500	400	3	20	Hw, Ss Cw, Yc Others	2.0 1.5 1.0
1071840	vh2	18*	Cw <sup>1,48</sup> Ss <sup>1</sup>		Dr <sup>b</sup>	400	200	200	3	20	Ss Cw, Dr	2.0 1.0
1071841	vh2	19*	Cw <sup>1,48</sup> Ss <sup>1</sup>		Act <sup>b</sup> Dr <sup>b</sup>	400	200	200	3	20	Ss Cw, Act, Dr	2.0 1.0
-	vh2	31	non-forested			-	-	-	-	-	-	
-	vh2	32	non-forested			-	-	-	-	-	-	
-	vh2	33	non-forested			-	-	-	-	-	-	
CWHvm1												
1071842	vm1	01	Hw Ba <sup>26</sup> Cw	Ss <sup>7,26,35</sup>	Dr <sup>b</sup>	900	500	400	6	20	Hw, Ss Cw Ba Others	2.0 1.5 1.4 1.0
1071843	vm1	02*	Pl Cw Hw	Fd <sup>22</sup>		400	200	200	3	20	Hw, Pl Others	1.4 1.0
1071844	vm1	03	Cw Hw	Pl Fd <sup>22</sup>	Dr <sup>b</sup>	800	400	400	6	20	Hw, Pl Others	1.4 1.0

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071845	vm1	04	Hw Ba Cw	Ss <sup>35</sup>	Dr <sup>b</sup>	900	500	400	3	20	Hw, Ss Cw Ba Others	2.0 1.5 1.4 1.0
1071846	vm1	05	Hw Ba Cw	Ss <sup>35</sup>	Act <sup>b</sup> Dr <sup>b</sup>	900	500	400	3	20	Hw, Ss Cw Ba Others	2.0 1.5 1.4 1.0
1071847	vm1	06	Hw Ba <sup>26</sup> Cw	Ss <sup>7,26,35</sup>	Dr <sup>b</sup>	900	500	400	6	20	Hw, Ss Cw, Yc Ba Others	2.0 1.5 1.4 1.0
-	vm1	07									-	
1071848	vm1	08	Hw Ba Cw	Ss <sup>35</sup>	Act <sup>a</sup> Dr <sup>a</sup>	900	500	400	3	20	Hw, Ss Cw Ba Others	2.0 1.5 1.4 1.0
1071849	vm1	08 <sup>d</sup> Ba Ss - Devils Club Wildlife Stk Std	Hw Ba Cw	Ss <sup>35</sup>	Act <sup>a,c</sup> Dr <sup>a</sup>	600		400	3	20	Hw, Ss Cw Ba Others	2.0 1.5 1.4 1.0
1071850	vm1	09	Ba Cw	Hw Ss <sup>35</sup>	Act <sup>a</sup> Dr <sup>a</sup>	900	500	400	3	20	Hw, Ss Cw Ba Others	2.0 1.5 1.4 1.0
1071851	vm1		Ba Cw	Hw Ss <sup>35</sup>	Act <sup>a,c</sup> Dr <sup>a</sup>	600		400	3	20	Hw, Ss Cw	2.0 1.5

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide	
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)	(max yrs)
		09 <sup>d</sup> Ss - Salmonberry Wildlife Stk Std								
										Ba 1.4 Others 1.0
1071852	vm1	10	Cw <sup>1</sup> Ss <sup>1,35</sup>	Ba <sup>1</sup>	Act <sup>a</sup> Dr <sup>a</sup>	900	500	400	3	20
										Ss 2.0 Cw 1.5 Ba 1.4 Others 1.0
1071853	vm1	10 <sup>d</sup> Act - Red-Osier Dogwood Wildlife Stk Std	Cw <sup>1</sup> Ss <sup>1,35</sup>	Ba <sup>1</sup>	Act <sup>a,c</sup> Dr <sup>a</sup>	500		200	3	20
										Ss 2.0 Cw 1.5 Ba 1.4 Others 1.0
-	vm1	11	no conifers		Act <sup>b</sup> Dr <sup>b</sup>	-	-	-	-	-
1071854	vm1	12	Cw <sup>1</sup> Hw <sup>1</sup> Yc <sup>1</sup>	Pl <sup>1</sup>		800	400	400	3	20
										Hw Pl 1.4 Hm 0.8 Others 1.0
1071855	vm1	13*	Cw <sup>1</sup> Pl <sup>1</sup> Yc <sup>1</sup>	Hw <sup>1</sup>		400	200	200	3	20
										Hw Pl 1.4 Others 1.0
1071856	vm1	14	Cw <sup>1</sup>	Hw <sup>1</sup> Ss <sup>1</sup> Yc <sup>1</sup>	Act <sup>b</sup> Dr <sup>b</sup>	800	400	400	3	20
										Hw, Ss 1.4 Others 1.0
1071857	vm1	14 <sup>d</sup> CwSs - Skunk Cabbage Wildlife Stk Std	Cw <sup>1</sup>	Hw <sup>1</sup> Ss <sup>1</sup> Yc <sup>1</sup>	Act <sup>b,c</sup> Dr <sup>b</sup>	400		200	3	20
										Hw, Ss 1.4 Others 1.0
-	vm1	31	non-forested			-	-	-	-	-
-	vm1	32	non-forested			-	-	-	-	-
-	vm1	51	non-forested			-	-	-	-	-

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
CWHvm2												
1071858	vm2	01	Hw Ba Cw <sup>14</sup>	Hm <sup>13</sup> Ss <sup>7</sup> Yc <sup>13</sup>		900	500	400	6	20	Hw, Ss Cw, Yc Ba Hm	2.0 1.5 1.4 1.0
1071859	vm2	02*	Pl Cw Yc	Hw		400	200	200	3	20	Hw Pl Others	1.8 1.4 1.0
1071860	vm2	03	Cw <sup>14</sup> Hw	Hm <sup>13</sup> Pl Yc		800	400	400	6	20	Hw Pl Others	1.8 1.4 1.0
-	vm2	04									-	
1071861	vm2	05	Hw Ba Cw <sup>14</sup> Yc <sup>13</sup>	Ss Hm <sup>13</sup>		900	500	400	3	20	Hw, Ss Cw, Yc Ba Hm	2.0 1.5 1.4 1.0
1071862	vm2	06	Hw Ba Cw <sup>14</sup> Yc	Hm <sup>13</sup> Ss <sup>7</sup>		900	500	400	6	20	Hw, Ss Cw, Yc Ba Hm	2.0 1.5 1.4 1.0
-	vm2	07									-	
1071863	vm2	08	Hw Ba Cw <sup>14</sup> Yc	Hm <sup>13</sup> Ss <sup>35</sup>		900	500	400	3	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	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071864	vm2	08 <sup>d</sup> Ba Ss - Devils Club Wildlife Stk Std	Hw Ba Cw <sup>14</sup> Yc	Hm <sup>13</sup> Ss <sup>35</sup>		600		400	3	20	Hw, Ss Cw, Yc Ba Hm	2.0 1.5 1.4 1.0
1071865	vm2	09	Cw <sup>1</sup> Hw <sup>1</sup> Yc <sup>1</sup>	Pl <sup>1</sup> Hm <sup>1</sup>		800	400	400	3	20	Hw, Pl Hm Others	1.8 0.8 1.0
1071866	vm2	10*	Pl <sup>1</sup> Yc <sup>1</sup>	Hm		400	200	200	3	20	Pl Yc Hm	1.4 1.0 0.8
1071867	vm2	11	Cw <sup>1</sup> Yc <sup>1</sup>	Hm <sup>1</sup> Hw <sup>1</sup> Ss <sup>1</sup>		800	400	400	3	20	Hw Ss Others	1.8 1.4 1.0
1071868	vm2	11 <sup>d</sup> CwSs - Skunk Cabbage Wildlife Stk Std	Cw <sup>1</sup> Yc <sup>1</sup>	Hm <sup>1</sup> Hw <sup>1</sup> Ss <sup>1</sup>		400		200	3	20	Hw Ss Others	1.8 1.4 1.0
-	vm2	31	non- forested			-	-	-	-	-	-	
-	vm2	32	non- forested			-	-	-	-	-	-	
-	vm2	51	non- forested			-	-	-	-	-	-	
CWHwm												
1071869	wm	01	Ba <sup>16,50</sup> Hw Ss	Cw <sup>16</sup> Hm <sup>12,13</sup>	Dr <sup>b</sup>	900	500	400	6	20	Hw Ss Hm Others	2.0 1.0 1.4

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071870	wm	02	Cw <sup>16,50</sup> Hw Pl	Hm <sup>12,13</sup>	Dr <sup>b</sup>	900	500	400	6	20	Hw, Pl, Ss Others Hm	2.0 1.4 1.0
1071871	wm	03	Ba <sup>16,50</sup> Ss Hw	Cw <sup>16</sup> Yc <sup>12,13</sup>	Act <sup>b</sup> Dr <sup>b</sup>	900	500	400	3	20	Hw, Ss Others	2.0 1.4
1071872	wm	04	Ss Hw	Ba <sup>16</sup> Cw <sup>16</sup> Yc <sup>12,13</sup>	Act <sup>b</sup> Dr <sup>a</sup>	900	500	400	3	20	Hw, Ss Others	2.0 1.4
1071873	wm	05	Ba <sup>16,50</sup> Ss Hw	Cw <sup>16</sup>	Act <sup>a</sup> Dr <sup>a</sup>	900	500	400	3	20	Hw, Ss Others	2.0 1.4
1071874	wm	06	Ba <sup>1,16,50</sup> Ss <sup>1</sup>	Cw <sup>1,16</sup>	Act <sup>a</sup> Dr <sup>a</sup>	900	500	400	3	20	Hw, Ss Others	2.0 1.4
-	wm	07*	no conifers			-	-	-	-	-	-	
1071875	wm	08*	Cw <sup>1,16</sup> Pl <sup>1</sup> Yc <sup>1</sup> Hw <sup>1</sup>	Hm <sup>12,13</sup>	Act <sup>b</sup> Dr <sup>b</sup>	900	500	400	6	20	Hw, Pl Hm Others	2.0 1.0 1.4
1071876	wm	09	Cw <sup>1,16,50</sup> Ss <sup>1</sup>	Yc <sup>1</sup> Hw <sup>1</sup> Hm	Act <sup>b</sup> Dr <sup>b</sup>	800	400	400	3	20	Hw, Ss Others	1.4 1.0
1071877	wm	10*	Pl <sup>1</sup> Yc <sup>1</sup>	Cw <sup>1,16</sup> Hw		400	200	200	3	20	Pl Others	1.4 1.0
-	wm	31	non-forested				-	-	-	-	-	-
-	wm	32	non-forested				-	-	-	-	-	-
-	wm	51	non-forested				-	-	-	-	-	-

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
CWHws1												
1071878	ws1	01	Hw Ba Cw	Pl Sxs <sup>35</sup>	Dr <sup>b</sup>	900	500	400	6	20	Hw, Pl, Sxs Others	2.0 1.4
1071879	ws1	02*	Pl Hw	Cw		600	400	400	6	20	Hw, Pl Others	1.4 1.0
1071880	ws1	03	Hw Pl	Cw		900	500	400	6	20	Hw, Pl Others	2.0 1.4
1071881	ws1	04	Hw Ba Cw	Sxs <sup>35</sup>	Act <sup>b</sup> Dr <sup>b</sup>	900	500	400	3	20	Hw, Sxs Others	2.0 1.4
1071882	ws1	05	Hw Ba Cw	Sxs <sup>7,35</sup>	Dr <sup>b</sup>	900	500	400	6	20	Hw, Sxs Others	2.0 1.4
1071883	ws1	06	Hw Ba Cw	Sxs <sup>35</sup>	Act <sup>b</sup> Dr <sup>a</sup>	900	500	400	3	20	Hw, Sxs Others	2.0 1.4
1071884	ws1	06 <sup>d</sup> Ba Cw - Devils Club Wildlife Stk Std <sup>d</sup>	Hw Ba Cw	Sxs <sup>35</sup>	Act <sup>b,c</sup> Dr <sup>a</sup>	600		400	3	20	Hw, Sxs Others	2.0 1.4
1071885	ws1	07	Hw Ba Cw	Sxs <sup>35</sup>	Act <sup>a</sup>	900	500	400	3	20	Hw, Sxs Others	2.0 1.4
1071886	ws1	07 <sup>d</sup> Ss - Salmonberry Wildlife Stk Std	Hw Ba Cw	Sxs <sup>35</sup>	Act <sup>a,c</sup>	500		200	3	20	Hw, Sxs Others	2.0 1.4
1071887	ws1	08	Ba <sup>1</sup> Cw <sup>1</sup>	Hw Sxs <sup>1,35</sup>	Act <sup>a</sup> Dr <sup>a</sup>	900	500	400	3	20	Sxs Others	2.0 1.4
1071888	ws1	08 <sup>d</sup> Act - Red- Osier Dogwood Wildlife Stk Std	Ba <sup>1</sup> Cw <sup>1</sup>	Hw Sxs <sup>1,35</sup>	Act <sup>a,c</sup> Dr <sup>a</sup>	500		200	3	20	Sxs Others	2.0 1.4

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
-	ws1	09*	no conifers		Act <sup>b</sup> Dr <sup>b</sup>	-	-	-	-	-	-	
1071889	ws1	10*	Pl <sup>1</sup>	Cw <sup>1</sup> Hw		400	200	200	3	20	Hw, Pl Others	1.4 1.0
1071890	ws1	11	Cw <sup>1</sup> Sxs <sup>1</sup>	Ba <sup>1</sup> Hw <sup>1</sup>	Act <sup>b</sup> Dr <sup>b</sup>	800	400	400	3	20	Hw, Sxs Others	1.4 1.0
1071891	ws1	11 <sup>d</sup> CwSs - Skunk Cabbage Wildlife Stk Std	Cw <sup>1</sup> Sxs <sup>1</sup>	Ba <sup>1</sup> Hw <sup>1</sup>	Act <sup>b,c</sup> Dr <sup>b</sup>	400		200	3	20	Hw, Sxs Others	1.4 1.0
-	ws1	31	non-forested			-	-	-	-	-	-	
-	ws1	32	non-forested			-	-	-	-	-	-	
CWHws2												
1071892	ws2	01	Sxs Hw Ba Cw <sup>14</sup>	Bl <sup>12</sup> Pl	Dr <sup>b</sup>	900	500	400	6	20	Pl Hw Others	2.0 1.3 1.0
1071893	ws2	02*	Pl Hw	Cw Hm <sup>13</sup>		600	400	400	6	20	Pl Others	1.4 0.8
1071894	ws2	03	Hw Pl	Hm <sup>13</sup> Cw	Dr <sup>b</sup>	900	500	400	6	20	Pl Hw Others	2.0 1.3 1.0
1071895	ws2	04	Sxs Hw Ba Cw <sup>14</sup>	Bl <sup>12</sup> Hm <sup>13</sup>	Act <sup>b</sup> Dr <sup>b</sup>	900	500	400	3	20	Hw Others	1.3 1.0
1071896	ws2	05	Sxs <sup>7</sup> Hw Ba Cw <sup>14</sup>	Bl <sup>12</sup>	Dr <sup>b</sup>	900	500	400	6	20	Hw Others	1.3 1.0

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071897	ws2	06	Sxs Hw Ba Cw <sup>14</sup>	Bl <sup>12</sup>	Act <sup>b</sup> Dr <sup>b</sup>	900	500	400	3	20	Hw Others	1.3 1.0
1071898	ws2	06 <sup>d</sup> BaSs – Devils Club Wildlife Stk Std	Sxs Hw Ba Cw <sup>14</sup>	Bl <sup>12</sup>	Act <sup>b,c</sup> Dr <sup>b</sup>	600		400	3	20	Hw Others	1.3 1.0
1071899	ws2	07	Sxs Hw Ba Cw	Bl <sup>12</sup>	Act <sup>a</sup> Dr <sup>a</sup>	900	500	400	3	20	Hw Others	1.3 1.0
1071900	ws2	07 <sup>d</sup> Ss – Salmonberry Wildlife Stk Std	Sxs Hw Ba Cw	Bl <sup>12</sup>	Act <sup>a,c</sup> Dr <sup>a</sup>	500		200	3	20	Hw Others	1.3 1.0
1071901	ws2	08	Sxs Hw Ba <sup>1</sup> Cw <sup>1</sup>	Bl <sup>12</sup>	Act <sup>a</sup> Dr <sup>a</sup>	900	500	400	3	20	All	1.0
1071902	ws2	08 <sup>d</sup> – Act – Red Osier Dogwood Wildlife Stk Std	Sxs Hw Ba <sup>1</sup> Cw <sup>1</sup>	Bl <sup>12</sup>	Act <sup>a,c</sup> Dr <sup>a</sup>	500		200	3	20	All	1.0
-	ws2	09	no conifers		Act <sup>b</sup> Dr <sup>b</sup>	-	-	-	-	20	-	
1071903	ws2	10*	Pl <sup>1</sup>	Cw <sup>1</sup> Hm Hw		400	200	200	3	20	Pl Others	1.4 0.8
1071904	ws2	11	Cw <sup>1</sup> Sxs <sup>1</sup>	Hw <sup>1</sup> Ba <sup>1</sup>	Act <sup>b</sup> Dr <sup>b</sup>	800	400	400	3	20	All	0.8
1071905	ws2	11 <sup>d</sup> CwSs – Skunk Cabbage Wildlife Stk Std	Cw <sup>1</sup> Sxs <sup>1</sup>	Hw <sup>1</sup> Ba <sup>1</sup>	Act <sup>b,c</sup> Dr <sup>b</sup>	800	400	400	3	20	All	0.8
-	ws2	31	non-forested				-	-	-	-	-	
-	ws2	32	non-forested				-	-	-	-	-	
-	ws2	51	non-forested				-	-	-	-	-	

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide		
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species
ESSFmc											
1071906	mc	01	Bl Sx	Pl <sup>34</sup>		1200	700	600	7	20	Pl 1.6 Others 0.8
1071907	mc	02*	Pl	Bl Sx		1000	500	400	7	20	Pl 1.2 Others 0.6
1071908	mc	03*	Pl	Bl Sx		1000	500	400	7	20	Pl 1.2 Others 0.6
1071909	mc	04	Pl Bl Sx			1200	700	600	7	20	Pl 1.6 Others 0.8
1071910	mc	05	Bl Sx	Pl <sup>34</sup>		1200	700	600	4	20	Pl 1.6 Others 0.8
1071911	mc	06	Bl Sx	Pl <sup>34</sup>		1200	700	600	4	20	Pl 1.6 Others 0.8
1071912	mc	07	Bl Sx <sup>32</sup>			1200	700	600	4	20	Pl 1.6 Others 0.8
1071913	mc	08*	Bl Sx <sup>32</sup>			1000	500	400	4	20	All 0.6
1071914	mc	09	Bl <sup>1</sup> Sx <sup>1,32</sup>			1000	500	400	4	20	All 0.6
1071915	mc	10	Bl <sup>1</sup> Sx <sup>1,32</sup>			1000	500	400	4	20	All 0.6
-	mc	31	non-forested			-	-	-	-	-	-
-	mc	51	non-forested			-	-	-	-	-	-

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			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
ESSFmk												
1071916	mk	01	Bl Se	Ba <sup>17</sup> Hm Pl <sup>34</sup>		1200	700	600	7	20	Pl Others	1.6 0.8
1071917	mk	02*	Pa Pl	Bl Hm Se		1000	500	400	7	20	Pl Others	1.2 0.6
1071918	mk	03*	Pa Pl	Bl Hm Se Ba <sup>17</sup>		1200	700	600	7	20	Pl Others	1.6 0.8
1071919	mk	04	Bl Se	Ba <sup>17</sup> Hm Pl <sup>34</sup>		1200	700	600	4	20	Pl Others	1.6 0.8
1071920	mk	05	Bl Se <sup>32</sup>	Hm Ba <sup>17</sup>		1200	700	600	4	20	Pl Others	1.6 0.8
1071921	mk	06	Bl <sup>1</sup> Se <sup>1,32</sup>	Hm Ba		1000	500	400	4	20	All	0.8
1071922	mk	07	Bl <sup>1</sup> Se <sup>1,32</sup>	Ba		1000	500	400	4	20	All	0.8
-	mk	31	non-forested				-	-	-	-	-	
-	mk	51	non-forested				-	-	-	-	-	
ESSFwv												
1071923	wv	01	Bl Se	Hm Hw Pl <sup>34</sup>		1200	700	600	7	20	Pl Others	1.6 0.8
1071924	wv	02*	Pl	Bl Hm Se		1000	500	400	7	20	Pl Others	1.2 0.6
1071925	wv	03*	Pl	Bl Hm Se Hw		1200	700	600	7	20	Pl Others	1.6 0.8

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			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071926	wv	04	Pl Bl	Se Hm		1200	700	600	7	20	Pl Others	1.6 0.8
1071927	wv	05	Bl Se	Hm Hw Pl <sup>34</sup>		1200	700	600	4	20	Pl Others	1.6 0.8
1071928	wv	06	Bl Se <sup>32</sup>	Hm Hw		1200	700	600	4	20	Pl Others	1.6 0.8
1071929	wv	07*	Bl Se <sup>32</sup>	Hm Hw		1000	500	400	4	20	All	0.6
1071930	wv	08	Bl <sup>1</sup> Se <sup>1,32</sup>			1000	500	400	4	20	All	0.6
1071931	wv	09	Bl <sup>1</sup> Se <sup>1,32</sup>			1000	500	400	4	20	All	0.6
-	wv	31	non-forested				-	-	-	-	-	-
-	wv	51	non-forested				-	-	-	-	-	-
ICHmc1												
1071932	mc1	01	Bl <sup>29</sup> Hw <sup>32</sup> Sx Ba <sup>50</sup>	Pl	At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	7	20	Pl Others	2.0 1.0
1071933	mc1	02*	Pl	Bl Hw <sup>32</sup>	At <sup>b</sup>	1000	500	400	7	20	Pl Others	1.4 0.8
1071934	mc1	03	Bl <sup>29</sup> Ba <sup>50</sup> Hw <sup>32</sup> Sx <sup>35</sup>	Pl	Act <sup>b</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071935	mc1	04	Bl <sup>29</sup> Ba <sup>50</sup> Sx <sup>35</sup> Hw <sup>32</sup>	Pl	Act <sup>b</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071936	mc1	05	Ba <sup>50</sup> Sx <sup>1,35</sup> Bl <sup>1,29</sup>		Act <sup>a</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0

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			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071937	mc1	06	Ba <sup>50</sup> Sx <sup>1</sup> Bl <sup>1,29</sup>	Hw <sup>1,32</sup>	Act <sup>b</sup>	1000	500	400	4	20	All	0.8
-	mc1	31	non-forested			-	-	-	-	-	-	-
ICHmc1a												
1071938	mc1a	01	Ba <sup>7</sup> Hw <sup>32</sup> Sx	Bl <sup>50</sup> Pl	At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071939	mc1a	02	Hw <sup>32</sup> Ba Sx <sup>35</sup>	Bl <sup>50</sup> Pl	Act <sup>b</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071940	mc1a	03	Hw <sup>32</sup> Ba Sx <sup>35</sup>	Bl <sup>50</sup> Pl		1200	700	600	4	20	Pl Others	2.0 1.0
ICHmc2												
1071941	mc2	01	Hw <sup>32</sup> Sx Cw <sup>32</sup> Fd <sup>9,32</sup> Lw <sup>9,32</sup>	Ba <sup>50</sup> Pl Bl <sup>29</sup>	At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl, Lw Fd Others	2.0 1.4 1.0
1071942	mc2	02*	Pl	Bl Hw Ba <sup>50</sup>	At <sup>b</sup>	1000	500	400	7	20	Pl Others	1.4 0.8
1071943	mc2	03	Cw <sup>32</sup> Hw <sup>32</sup> Sx <sup>35</sup> Fd <sup>9,32</sup> Lw <sup>9,32</sup>	Bl <sup>29</sup> Pl Ba <sup>50</sup>	Act <sup>b</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl, Lw Fd Others	2.0 1.4 1.0
1071944	mc2	04	Cw <sup>32</sup> Sx <sup>35</sup> Fd <sup>9,32</sup> Lw <sup>9,32</sup>	Bl <sup>29</sup> Hw <sup>32</sup> Pl Ba <sup>50</sup>	Act <sup>b</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl, Lw Fd Others	2.0 1.4 1.0

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			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071945	mc2	05	Cw <sup>1,32</sup> Sx <sup>1,35</sup>	Ba <sup>50</sup> Bl <sup>1,29</sup> Hw <sup>1,32</sup> Pl <sup>1</sup>	Act <sup>b</sup> Ata Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071946	mc2	06	Cw <sup>1,32</sup> Sx <sup>1,35</sup>	Ba <sup>50</sup> Bl <sup>1,29</sup> Hw <sup>1,32</sup>	Act <sup>a</sup> Ata Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071947	mc2	07	Ba <sup>50</sup> Bl <sup>1,29</sup> Sx <sup>1</sup> Cw <sup>1,32</sup>	Hw <sup>1,32</sup>	Act <sup>b</sup> At <sup>b</sup> Ep <sup>b</sup>	1000	500	400	4	20	Pl Others	1.4 1.0
1071948	mc2	08*	Sb <sup>1</sup> Sx <sup>1,32</sup>	Pl <sup>1</sup>		400	200	200	4	20	Pl Others	1.4 0.8
-	mc2	31	non-forested			-	-	-	-	-	-	
-	mc2	32	non-forested			-	-	-	-	-	-	
1071949	mc2	51	Pl <sup>71</sup> Hw	Bl <sup>28,29</sup> Sx <sup>28</sup> Ba <sup>50</sup>	At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071950	mc2	52	Hw <sup>32</sup> Sx Cw <sup>32</sup>	Pl Bl <sup>29</sup> Ba <sup>50</sup>	Act <sup>b</sup> Ata Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071951	mc2	53	Hw <sup>32</sup> Sx Cw <sup>32</sup>	Pl Bl <sup>29</sup> Ba <sup>50</sup>	Act <sup>b</sup> Ata Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071952	mc2	54	Cw <sup>32</sup> Sx	Bl <sup>29</sup> Hw <sup>32</sup> Pl Ba <sup>50</sup>	Act <sup>b</sup> Ata Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
ICHvc												
1071953	vc	01	Bl Hw <sup>32</sup>	Hm <sup>50</sup> Sx <sup>34,35</sup>	Act <sup>b</sup> At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	4	20	All	1.0
1071954	vc	02	Bl Hw <sup>32</sup>	Hm <sup>50</sup> Pl <sup>3,9</sup> Sx <sup>34</sup>	At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	4	20	Pl Others	2.0 1.0

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide							Free Growing Guide		
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071955	vc	03	Bl Sx <sup>34,35</sup>	Hw	Act <sup>b</sup> At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	4	20	All	1.0
1071956	vc	04	Bl <sup>1</sup> Sx <sup>1,34,35</sup>		Act <sup>a</sup> At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	4	20	All	1.0
1071957	vc	05	Bl <sup>1</sup> Sx <sup>1,32,34,35</sup>		Act <sup>a</sup> At <sup>a</sup>	1200	700	600	4	20	All	1.0
1071958	vc	06	Bl <sup>1</sup> Sx <sup>1,32,34</sup>		Act <sup>b</sup> At <sup>b</sup> Ep <sup>b</sup>	1000	500	400	4	20	All	0.8
-	vc	31	non-forested			-	-	-	-	-	-	
1071959	vc	51*	Bl Sx <sup>34</sup>			1000	500	400	3	20	All	0.8
1071960	vc	52*	Bl Sx <sup>34</sup>			400	200	200	3	20	All	0.8
ICHwc												
1071961	wc	01	Bl Hw <sup>32</sup> Sx	Pl	Act <sup>b</sup> At <sup>b</sup> Ep <sup>b</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071962	wc	02*	Pl	Bl Hw	At <sup>b</sup>	1000	500	400	7	20	Pl Others	1.4 0.8
1071963	wc	03	Bl Hw <sup>32</sup> Pl Sx <sup>28</sup>		At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071964	wc	04	Bl Sx	Hw <sup>32</sup>	Act <sup>b</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	Pl Others	2.0 1.0
1071965	wc	05	Bl Sx	Hw <sup>32</sup>	Act <sup>b</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	All	1.0
1071966	wc	06	Bl <sup>1</sup> Sx <sup>1</sup>	Hw <sup>1,32</sup>	Act <sup>a</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	4	20	All	1.0
1071967	wc	07	Sx <sup>1</sup> Bl <sup>1</sup>	Hw <sup>1,32</sup> Pl <sup>1</sup>		1000	500	400	4	20	Pl Others	1.4 0.8
1071968	wc	08	Bl <sup>1</sup> Sx <sup>1</sup>	Hw <sup>1,32</sup>	Act <sup>b</sup> At <sup>b</sup> Ep <sup>b</sup>	1000	500	400	4	20	All	0.8
-	wc	31	non-forested			-	-	-	-	-	-	
-	wc	32	non-forested			-	-	-	-	-	-	

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide							Free Growing Guide		
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071969	wc	51	Bl Sx			1000	500	400	4	20	All	0.8
1071970	wc	52	Bl <sup>1</sup> Sx <sup>1</sup>			400	200	200	3	20	All	0.8
MHmm1												
1071990	mm1	01	Ba Hm <sup>13</sup>	Hw <sup>14</sup> Yc <sup>14</sup> Cw <sup>14</sup>		900	500	400	7	20	All	1.0
1071991	mm1	02*	Hm Yc	Ba		800	400	400	4	20	All	0.8
1071992	mm1	03	Ba Hm Yc	Hw		900	500	400	4	20	All	1.0
1071993	mm1	04	Ba Hm Yc	Hw		900	500	400	7	20	All	1.0
1071994	mm1	05	Ba Yc Hm	Hw		900	500	400	4	20	All	1.0
1071995	mm1	06*	Hm <sup>1</sup> Yc <sup>1</sup>	Ba		800	400	400	7	20	All	0.8
1071996	mm1	07*	Hm <sup>1</sup> Ba <sup>1</sup> Yc <sup>1</sup>			900	500	400	4	20	All	1.0
1071997	mm1	08*	Hm <sup>1</sup> Yc <sup>1</sup>	Hw <sup>1,14</sup> Ba <sup>1</sup>		400	200	200	4	20	All	0.8
1071998	mm1	09*	Yc <sup>1</sup> Hm <sup>1</sup>	Ba <sup>1</sup> Hw <sup>1,14</sup>		800	400	400	4	20	All	0.8
-	mm1	31	non-forested				-	-	-	-	-	-
-	mm1	51	non-forested				-	-	-	-	-	-
MHmm2												
1071971	mm2	01	Ba Hm	Yc <sup>13,17,50</sup> Bl <sup>13,50</sup> Hw Cw <sup>14</sup>		900	500	400	7	20	All	1.0
1071972	mm2	02*	Hm	Yc <sup>17,50</sup> Ba Bl <sup>50</sup>		800	400	400	4	20	All	0.8
1071973	mm2	03	Ba Hm	Yc <sup>17,50</sup> Bl <sup>50</sup>		900	500	400	4	20	All	1.0
1071974	mm2	04	Ba Hm	Yc <sup>17,50</sup> Bl <sup>50</sup>		900	500	400	7	20	All	1.0
1071975	mm2	05	Ba Hm	Yc <sup>17,50</sup> Bl <sup>50</sup>		900	500	400	4	20	All	1.0
1071976	mm2	06*	Hm <sup>1</sup>	Yc <sup>17,50</sup>		800	400	400	7	20	All	1.0

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
1071977	mm2	07*	Ba <sup>1</sup>	Yc <sup>1,17,50</sup> Hm <sup>1</sup>		900	500	400	4	20	All	1.0
1071978	mm2	08*	Hm <sup>1</sup>	Ba Bl <sup>1,50</sup> Yc <sup>1,17,50</sup>		400	200	200	4	20	All	0.8
1071979	mm2	09*	Hm <sup>1</sup>	Ba <sup>1</sup> Yc <sup>1,17,50</sup>		800	400	400	4	20	All	0.8
-	mm2	31	non-forested				-	-	-	-	-	
-	mm2	51	non-forested				-	-	-	-	-	
MHwh1												
1071980	wh1	01	Ba Cw Hm <sup>13</sup>	Hw <sup>14</sup> Ss <sup>14</sup> Yc <sup>13</sup>		900	500	400	7	20	All	1.0
1071981	wh1	02*	Hm Yc	Cw <sup>14</sup>		400	200	200	4	20	All	0.8
1071982	wh1	03	Hm Yc	Cw <sup>14</sup> Ss <sup>14</sup>		900	500	400	7	20	All	1.0
1071983	wh1	04	Hm Yc	Cw <sup>14</sup> Ba Hw <sup>14</sup>		900	500	400	7	20	All	1.0
1071984	wh1	05	Ba Yc	Cw <sup>14</sup> Hm Hw <sup>14</sup> Ss <sup>14</sup>		900	500	400	4	20	All	1.0
1071985	wh1	06*	Hm <sup>1</sup> Yc <sup>1</sup>	Ba <sup>1</sup> Ss <sup>1,14</sup>		800	400	400	7	20	All	0.8
1071986	wh1	07*	Ba <sup>1</sup> Yc <sup>1</sup>	Cw <sup>14</sup> Hm <sup>1</sup> Ss <sup>14</sup>		900	500	400	4	20	All	1.0
1071987	wh1	08*	Hm <sup>1</sup> Yc <sup>1</sup>	Ba <sup>1</sup> Hw <sup>1,14</sup>		400	200	200	4	20	All	0.8
1071988	wh1	09*	Yc <sup>1</sup>	Cw <sup>1,14</sup> Hw <sup>1,14</sup> Ba Hm <sup>1</sup>		800	500	400	4	20	All	0.8

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide			
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)	
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species	Ht (m)
-	wh1	31	non-forested			-	-	-	-	-	-	
SBSmc2												
1071999	mc2	01	Pl Sx	Bl <sup>29</sup>	At <sup>a</sup>	1200	700	600	7	20	Pl	1.6
											Others	0.8
107200	mc2	02*	Pl	Bl Sx <sup>32</sup>	At <sup>b</sup>	1000	500	400	7	20	Pl	1.2
											Others	0.6
107201	mc2	03	Pl Sx <sup>32</sup>	Bl <sup>29</sup> Sb	At <sup>b</sup>	1200	700	600	7	20	Pl	1.6
											Others	0.8
-	mc2	04									-	
107202	mc2	05	Pl Sx	Bl <sup>29</sup>	Act <sup>a</sup> At <sup>a</sup>	1200	700	600	4	20	Pl	1.6
											Others	0.8
107203	mc2	06	Pl Sx	Bl <sup>29</sup>	Act <sup>b</sup> At <sup>a</sup>	1200	700	600	4	20	Pl	1.6
											Others	0.8
107204	mc2	07*	Pl Sb Sx <sup>32</sup>	Bl	At <sup>b</sup>	1000	500	400	4	20	Pl	1.2
											Others	0.6
107205	mc2	08	Pl Sx	Bl <sup>29</sup>	Act <sup>b</sup> At <sup>a</sup>	1200	700	600	4	20	Pl	1.6
											Others	0.8
107206	mc2	09	Sx Bl <sup>29</sup>	Pl	Act <sup>b</sup> At <sup>a</sup>	1200	700	600	4	20	Pl	1.6
											Others	0.8
107207	mc2	10	Sx <sup>1,32</sup> Bl <sup>1,29</sup>	Pl <sup>1</sup>	Act <sup>b</sup> At <sup>b</sup>	1000	500	400	4	20	Pl	1.2
											Others	0.6

I.D. #	Biogeoclimatic Ecosystem Classification		Regeneration Guide						Free Growing Guide		
			Species			Stocking (i) (well-spaced/ha)			Regen Delay	Latest Assessment (max yrs)	Minimum Height(ii)
	Subzone	Series	preferred (p)	Acceptable (a)	Broadleaf (p) or (a) as per footnotes	Target	MIN (pa)	MIN (p)	(max yrs)		Species
-	mc2	11									-
107208	mc2	12*	Sb <sup>1</sup> Sx <sup>1,32</sup>	Pl <sup>1</sup> Bl <sup>1</sup>		400	200	200	4	20	Pl 1.2 Others 0.6
-	mc2	31	non-forested			-	-	-	-	-	-

\*Avoid Logging – Sites are sensitive to logging.

**Table 17. Footnotes for Stocking Standards**

\*\*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.

Reference	Description
<b>Footnotes related to “Broadleaf” species acceptability in Error! Reference source not found.</b>	
a	Species constitutes a productive, reliable, and feasible regeneration option, and subject to section 6.0, 6.4 Stocking Standards within Ecosystem Complexes, 6.8 Wildlife Habitat Stocking Standards, <b>Error! Reference source not found.</b> Broadleaf Species, 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 6.4 Stocking Standards within Ecosystem Complexes, 6.8 Wildlife Habitat Stocking Standards, <b>Error! Reference source not found.</b> Broadleaf Species, 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.
<b>Advisory** footnotes to “Preferred” or “Acceptable” species in Error! Reference source not found.</b>	
1	Suitable on elevated microsites
3	Suitable on coarse-textured soils
7	restricted to nutrient-medium sites
9	suitable on warm aspects
12	suitable on cold air drainage sites
13	suitable at upper elevations of Biogeoclimatic unit
14	suitable at lower elevations of Biogeoclimatic unit unless present throughout stand
16	restricted to southern portion of Biogeoclimatic unit
17	restricted to western portion of Biogeoclimatic unit
22	suitable in southern Gardner Canal-Kitlope area
26	suitable minor species on nutrient poor sites
28	limited by moisture deficit
29	risk of heavy browsing by moose
32	limited by growing-season frosts
34	risk of snow damage
35	risk of weevil damage – resistant stock mitigates risk of spruce weevil damage; Apply Sxs and Ss preferred and acceptability rules as per section 6.5 Species Acceptability – Spruce leader weevil. Reference the Ss Weevil Decision Tool at: ( <a href="http://pubs.cif-ifc.org/doi/abs/10.5558/tfc2013-042">http://pubs.cif-ifc.org/doi/abs/10.5558/tfc2013-042</a> ) and BC Journal of Ecosystems and Management 7(3): 45-49. See section 6.5 for conditions.
48	risk of browsing by deer
50	restricted to sites where the species occurs as a major species in a pre-harvest, natural stand

<b>Foot notes related to wildlife habitat stocking standards in Error! Reference source not found.</b>	
d	<p>Site series specific wildlife habitat stocking standards for Grizzly Bear and Moose:</p> <ul style="list-style-type: none"> <li>- See Table 16. Even-Aged and Wildlife Habitat Stocking Standards for species acceptability target and minimum stocking standards;</li> <li>- See Table 18. 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,</li> <li>- See Section 6.8, Wildlife Habitat Stocking Standards for additional conditions</li> </ul>
<b>Biogeoclimatic Ecosystem Classification (BEC) Subzones in the Kalum and Nass TSAs</b>	
BWBSdk1	Boreal White and Black Spruce zone, dry cool subzone – Stikine Variant
BWBSdk2	Boreal White and Black Spruce zone, dry cool subzone – Liard Variant
CWHvh2	Coastal Western Hemlock zone, very Wet Hypermaritime – central variant
CWHvm1	Coastal Western Hemlock zone, very wet maritime – submontane variant
CWHvm2	Coastal Western Hemlock zone, very wet maritime – montane variant
CWHwm	Coastal Western Hemlock zone, wet maritime subzone
CWHws1	Coastal Western Hemlock zone, wet subarctic subzone – submontane variant
CWHws2	Coastal Western Hemlock zone, wet subarctic subzone – montane variant
ESSFmc	Engelmann Spruce – Subalpine Fir zone, moist cold subzone
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
ICHmc2	Interior Cedar – Hemlock zone, moist cold subzone - Hazelton variant
ICHvc	Interior Cedar – Hemlock zone, very wet cold subzone
ICHwc	Interior Cedar – Hemlock zone, wet cold subzone
MHmm1	Mountain Hemlock zone, moist maritime subzone – windward variant
MHmm2	Mountain Hemlock zone, moist maritime subzone – leeward variant
MHwh1	Mountain Hemlock zone, wet hypermaritime – windward variant
SBSmc2	Sub-Boreal Spruce zone, moist cold subzone – Babine variant
<b>Conifer Tree Species</b>	
"Ba" means amabilis fir	"Pl" means lodgepole pine
"Bl" means sub-alpine fir	"Se" means Engelmann spruce
"Cw" means western red cedar	"Sb" means black spruce
"Fd" means douglas-fir	"Ss" means Sitka spruce
"Hm" means mountain hemlock	"Sx" or "Sxs" means hybrid or interior spruce
"Hw" means western hemlock	"Sw" means white spruce
"Lt" means tamarack	"Yc" means yellow cedar
"Lw" means western larch	
<b>Broadleaf Tree Species</b>	
"AcB" means balsam poplar	"Dr" means red alder
"Act" means black cottonwood	"Ep" means paper birch
"At" means trembling aspen	

**Table 18. 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 19. Uneven-aged Stocking Standards<sup>50</sup>**

Target From Standards <sup>31</sup> Stems/ha	Layer <sup>51</sup>	STOCKING (well spaced stems/ha)		
		Target (p&a) <sup>52</sup> Preferred and Acceptable	Minimum (p&a) <sup>31</sup> Preferred and Acceptable	Minimum (p) <sup>31</sup> 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
	4	600	400	400
400	1	200	100	100
	2	300	125	125
	3	300	150	150
	4	400	200	200

<sup>50</sup> 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.

<sup>51</sup> 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

<sup>52</sup> Preferred and Acceptable species, and Stocking Standards (Target, Minimum Preferred and Acceptable and Minimums) from Table 16. Even-Aged and Wildlife Habitat Stocking Standards are specified by BEC Site Series.

## 7.0 DECLARED AREAS

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 20.

**Table 20. FPPR s.14(4) and FRPA s. 196 Declared Areas<sup>53</sup>**

**This table will be updated prior to FSP Approval**

FDU	Skeena Sawmills Block or Road Identity	Geographic Area	Mapsheet (1:20,000)	Plan Status
Kalum FDU	BIS007	Bish	103H097	Block Declared 14(4)
Kalum FDU	EMS010	Emsley	103H096	Block Declared 14(4)
Kalum FDU	EMS011	Emsley	103H087 103H097	Block Declared 14(4)
Kalum FDU	10I 6-0-3	Hirsch	103I018	Block Declared 14(4)
Kalum FDU	HIR001 (6-100-0)	Hirsch	103I018	Block Declared 14(4)
Kalum FDU	HIR004 (9-300-1)	Hirsch	103I018	Block Declared 14(4)
Kalum FDU	HUM001	Humphrys	103I028	Block Declared 14(4)
Kalum FDU	KIT001	Kitimat	103I029	Block Declared 14(4)
Kalum FDU	KIT014	Kitimat	103I010	Block Declared 14(4)
Kalum FDU	WAT001	Wathl	103I008	Block Declared 14(4)
Kalum FDU	WAT002	Wathl	103I008	Block Declared 14(4)
Kalum FDU	WAT003	Wathl	103I008 103I007	Block Declared 14(4)
Kalum FDU	WED020	Wedeene	103I027	Block Declared 14(4)
Kalum FDU	WED022	Wedeene	103I027	Block Declared 14(4)
Nass South FDU	ARB007	Arbor	103P075	Block Declared 14(4)
Nass South FDU	ARB024	Arbor	103P076	Block Declared 14(4)
Nass South FDU	KIN001	Kinskuch	103P065	Block Declared 14(4)
Nass South FDU	KIN002	Kinskuch	103P065	Block Declared 14(4)
Nass South FDU	KIN018	Kinskuch	103P065	Block Declared 14(4)
Nass South FDU	KSI004	Ksi'Gwinhat'al	103P045	Block Declared 14(4)
Nass South FDU	KSI007	Ksi'Gwinhat'al	103P045	Block Declared 14(4)
Nass South FDU	NIS003	Niska Lakes	103P075	Block Declared 14(4)
Nass South FDU	NIS004	Niska Lakes	103P075	Block Declared 14(4)
Nass South FDU	NIS012	Niska Lakes	103P075	Block Declared 14(4)
Nass South FDU	NIS014	Niska Lakes	103P075	Block Declared 14(4)

<sup>53</sup> 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.

<b>FDU</b>	<b>Skeena Sawmills Block or Road Identity</b>	<b>Geographic Area</b>	<b>Mapsheet (1:20,000)</b>	<b>Plan Status</b>
Nass South FDU	NIS018	Niska Lakes	103P084	Block Declared 14(4)
Nass South FDU	VAN006	Van Dyke	103P067	Block Declared 14(4)

**Table 21. Approved Cutting Permits and Road Permits<sup>54</sup>**

<b>Cutting Permit or Road Permit Identity</b>	<b>Approval Date</b>	<b>Landscape Unit</b>
Located on FSP Maps		

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<sup>54</sup> 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.

## 8.0 CITATIONS

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