

FOREST STEWARDSHIP PLAN

**Community Forest Agreement K5X
Spelkúmtn Community Forest Limited Partnership**

**Sea to Sky Natural Resource District
Soo Timber Supply Area**

Version 1.0



November 16, 2020
Prepared by: Adrian Litz, RPF

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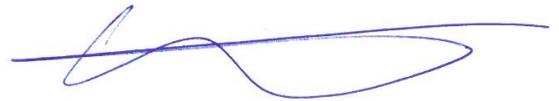
Speikúmtn Community Forest Limited Partnership

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1.0 Introduction

1.1 Definitions in this FSP:

“Affected Species” means a species listed in a Notice unless, after the Date of Submission, that species is removed from the Notice;

“Agreements” means those Agreements identified in section 1.9

“Attributes” means the attributes of an Affected Species specified in a Notice that relates to the Affected Species;

“Commencement Date” means the commencement date of the Term of this FSP as specified in section 1.7.

“Date of Submission” means the date of submission of this FSP as specified in Section 1.6

“District” means Sea to Sky Natural Resource District

“Established Objective” means:

- (a) an objective continued under section 181 of the FRPA,
- (b) an objective set by government under sections 5-10 of the FPPR;
- (c) a land use objective; and
- (d) an objective established under the Government Action Regulation as of the Date of Submission.

“FDP” means a forest development plan under the FPC;

“FDU” refers to a forest development unit under this FSP;

“Floodplain Management Areas” means the Crown Land portions of the floodplains in the Upper Lillooet, Green, Soo, Elaho and Squamish Rivers as shown on Map 4 of the Ministerial Order on Land Use Objectives for the Sea-to-Sky Land & Resource Management Plan;

“FPC” means the “Code” and “Code regulations” as those terms are defined in subsection 177(1) of FRPA;

“FPPR” means the Forest Planning and Practices Regulation, B.C. Reg. 14/2004 made pursuant to FRPA, as that regulation existed on the Date of Submission;

“FRPA” means the Forest and Range Practices Act, S.B.C. 2002, c.69 as that legislation existed on the Date of Submission;

“FSP” means this Forest Stewardship Plan, including all tables, appendices and attachments;

“FSP Map” means the attached Maps - Forest Stewardship Plan covering the plan area (series of 6 maps);

“Green-up” means a state of regeneration in a stocked cutblock that meets the following standards:

- (a) the average height of the tallest 10% of the trees on the area to be reforested

is a minimum of 3.0 m;

(b) the area contains at least 500 trees/ha. of a commercially valuable species that are at least 1.3 m. in height;

“Higher Level Plans” are land use and forest resource management objectives set during strategic planning. This includes objectives that may be established for the general public, First Nations, government agencies, and commercial interests. HLPs provide direction that affects the content and approval of operational plans, and ultimately, the forest practices on the ground.

“Holder” means the holder and the agreements as identified in section 1.9, Table 2;

“Notice” means a notice given to the Holder by the Date of Submission pursuant to section 7(2) of the FPPR;

“Old Growth Management Area (OGMA)” is defined in the Forest Planning and Practices Regulation as an area that is subject to old growth management objectives established under section 3 [*resource management zones and objectives*] or 4 [*landscape units and objectives*] of the *Forest Practices Code of British Columbia Act*.

“Order” means an order made pursuant to the Code or FRPA and the regulations made there under and provided to the Holder by the Date of Submission and referenced in an Objective, or a Result or Strategy in this FSP;

“Silviculture Treatment” (as stated in the FPPR) includes

- (a) site preparation for the purposes of reforestation,
- (b) planting trees,
- (c) brushing, including grazing for the purposes of brushing,
- (d) juvenile spacing,
- (e) fertilization,
- (f) pruning,
- (g) sanitation treatments associated with a silviculture treatment, and
- (h) pest management treatments, other than sanitation treatments;

Primary Forest Activity as defined by the FPPR means one or more of the following (a) timber harvesting; (b) silviculture treatments (b1) wildlife enhancement; (c) road construction, maintenance and deactivation.

“Qualified Person” means a qualified person is one who possesses the specified knowledge, skills, training, experience and other requirements to perform a specified type of work as: set out in legislation; set out in Provincial Government policy; or required by an organization satisfactory to the Provincial Government that has the responsibility for specifying the requirements. The requirements include holding an accreditation bestowed by: the provincial Government, a professional association constituted under an Act, or other organization satisfactory to the Provincial Government. Attainment of the requirements is either verified through a process undertaken by the Provincial Government, a professional association or other organization satisfactory to the Provincial Government, to confirm that all requirements are met, or self-assessed by members of a professional association constituted under an Act, where a code of ethics requires members to operate only within their area of expertise.

“Riparian Management Area” as defined by the FPPR means a riparian management area described under Division 3 [*Riparian areas*] of Part 4 [*Practice requirements*] of the FPPR, that consists of a riparian management zone and a riparian reserve zone.

"Riparian Management Zone" as defined by the FPPR means a riparian management zone described under Division 3 [*Riparian areas*] of Part 4 [*Practice requirements*] of the FPPR, that

- (a) is a portion of the riparian management area; and
- (b) is established to:
 - (i) conserve the fish, wildlife habitat, biodiversity and the water values of the riparian management zone, and
 - (ii) protect the riparian reserve zone, if any, within the riparian management area.

"Riparian Reserve Zone" as defined by the FPPR means a riparian reserve zone described under Division 3 [*Riparian areas*] of Part 4 [*Practice requirements*], that

- (a) is a portion of a riparian management area, and
- (b) is established to protect fish, wildlife habitat, biodiversity and the water values of the riparian reserve zone.

"Site Plan" means a site plan as contemplated in FRPA. A site plan is a document prepared by a forest professional for each cutblock harvested. The Site Plan details forest resource management objectives and the measures which have been or will be utilized to identify and ensure appropriate conservation of forest resource values which exist on the site.

"Ungulate Winter Range" as defined in the FPPR, means an ungulate winter range continued under section 180 (a) [*grandparenting specified designations*] of the FRPA, or established under the Government Actions Regulation.

"Visual Quality Objective" as defined in the FPPR, means an objective continued, in respect of a scenic area, under section 181 of FRPA, an objective established for a scenic area under the Government Actions Regulation, or a visual quality class continued, for a scenic area, under section 17 of the Government Actions Regulation.

"Wildlife Habitat Area" as defined in the FPPR, means a Wildlife Habitat Area continued under section 180 (b) [*grandparenting specified designations*] of the FRPA, or established under the Government Actions Regulation.

1.2 Forest Stewardship Plan

The Forest Stewardship Plan (FSP) is a requirement under Section 3 of the *Forest and Range Practices Act* (FRPA), which came into effect on January 31, 2004. This FSP has been drafted to be consistent and in accordance with the FRPA, the associated regulatory framework, provincial legislation, federal legislation as well as higher level plans and policy as described by the British Columbia Provincial Government.

The purpose of the FSP is to outline objectives set forth by the Government of British Columbia related to forest management activities proposed on crown lands. The achievement of the objectives, established within the FSP, is measured through results, strategies and/or measures. The intention of the objectives is to identify the strategic issues by describing a desired future condition for a particular resource or resource use, while results, strategies and/or measures describe how the desired outcome will be achieved.

A **Result** is defined in the *Forest Planning and Practices Regulation* (FPPR) as a “description of measurable or verifiable outcomes in respect of a particular established objective, and the situations or circumstances that determine where in a Forest Development Unit the outcomes will be applied.”

A **Strategy** is defined in the FPPR as a “description of measurable or verifiable steps or practices that will be carried out in respect of a particular established objective, and the situations or circumstances that determine where in a Forest Development Unit the steps or practices will be applied.” This FSP, where applicable, outlines measurable and verifiable results, strategies and/or measures that are compatible with government established forest management and resource objectives.

1.2.1 Relationship of FSP and Management Plan

In addition to the FSP, a management plan has been prepared for Community Forest Agreement K5X as a requirement for the application for the CFA license. The purpose of the management plan is to link the partner communities and their values to the management of the Community Forest and to establish an annual allowable cut (AAC) for the Community Forest Agreement (CFA). The management plan outlines the guiding principles, values, social, economic and resource management goals and objectives for the Community Forest. It describes inventories and broad resource management direction for timber and non-timber values, as well as measures to consult and communicate with other forest users.

While the management plan articulates the values and broad resources management direction desired by the community, the FSP specifies the legal requirements as set by government. These two documents are applied in tandem. Any management activities or prescriptions developed from management plan direction must be consistent with all relevant forestry legislation and applicable Higher Level Plans under the FRPA, as defined in the FSP.

1.3 Professional Reliance

With the introduction of the FRPA, the government of British Columbia mandated a move away from a regulatory and prescriptive environment to one that supports a results-based regime. This results-based regime involves a greater role for professionals from a variety of disciplines with regards to professional reliance and accountability. The FSP holder - Spelkúmtn Community Forest Limited Partnership (SCF LP), recognizes the importance of professional reliance and accountability, and will utilize Qualified Persons, in their respective fields of practice, where applicable and warranted. Qualified Persons are designated by their respective association in the

field of their practice such as the Association of British Columbia Forest Professionals (ABCFP), the Association of Professional Biology (APB) and the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). Qualified Persons may be engaged for a variety of services including, but not limited to:

- Geotechnical or slope stability assessments;
- Wildlife/ biological assessments;
- FSP preparation, permit applications and amendments; and
- Site level assessments for activities such as pre-harvest Site Plans, road and bridge layout and design.

1.4 Chief Forester's Guidance

The following FSP has been drafted to incorporate recommendations from the Chief Forester's "Guidance on the Replacement of Forest Stewardship Plans (2016)" and the "Sea to Sky Natural Resource District Manager's Expectations Letter" (2016). In light of these recommendations, this FSP includes:

- Clearly stated measurable and/or verifiable, and enforceable results and strategies that consider new information such as invasive plant management strategies and forest health.
- Commitment to ongoing First Nations and public consultation and information sharing, including annual reporting on performance in relation to SCF LP guiding principles and/or values, and the broad social, economic and resource management goals proposed for the Community Forest Agreement (CFA).
- Additional management direction over and above those set by FRPA, specifically with regards to:
 - a. tree retention around small streams; and,
 - b. endangered wildlife species not listed in FPPR Section 7.
- An expanded range of stocking standards that consider forest health factors, wildfire management and climate change.

1.5 Forest Stewardship Plan Term

As per Section 6(1)(a)(b) of the *Forest and Range Practices Act* (FRPA), the FSP holder is seeking a term of 5 years for this FSP, commencing on the date of approval by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD).

1.6 Date of Submission

November 16, 2020

1.7 Commencement Date

The term of this FSP commences on the date specified by the Minister or his Delegated Decision Maker (DDM).

1.8 Forest Development Units

Forest Development Unit means an area identified in a forest stewardship plan

(a) where forest development may occur during the term of the plan, and

(b) within which, during the term of the plan, timber to be harvested or roads to be constructed are entirely located

The Forest Development Unit (FDU) is the broad geographic unit to which the objectives, results, strategies and/or other measures defined in the FSP are applicable. The FSP maps (Appendix

B), illustrate the location of the Spelkúmtn FDU which has been established for the Spelkúmtn Community Forest. The FDU is comprised of portions of 5 Landscape Units (LU's). The objectives established through the Land Use Orders establishing each LU are applicable within the portion of each individual LU covered by the FDU. Figure 1 is a map of the FSP area and the location of the FDU within each approved Landscape Unit.

Table 1. List of Forest Development Units

FDU #	Name
FDU 1	Spelkúmtn

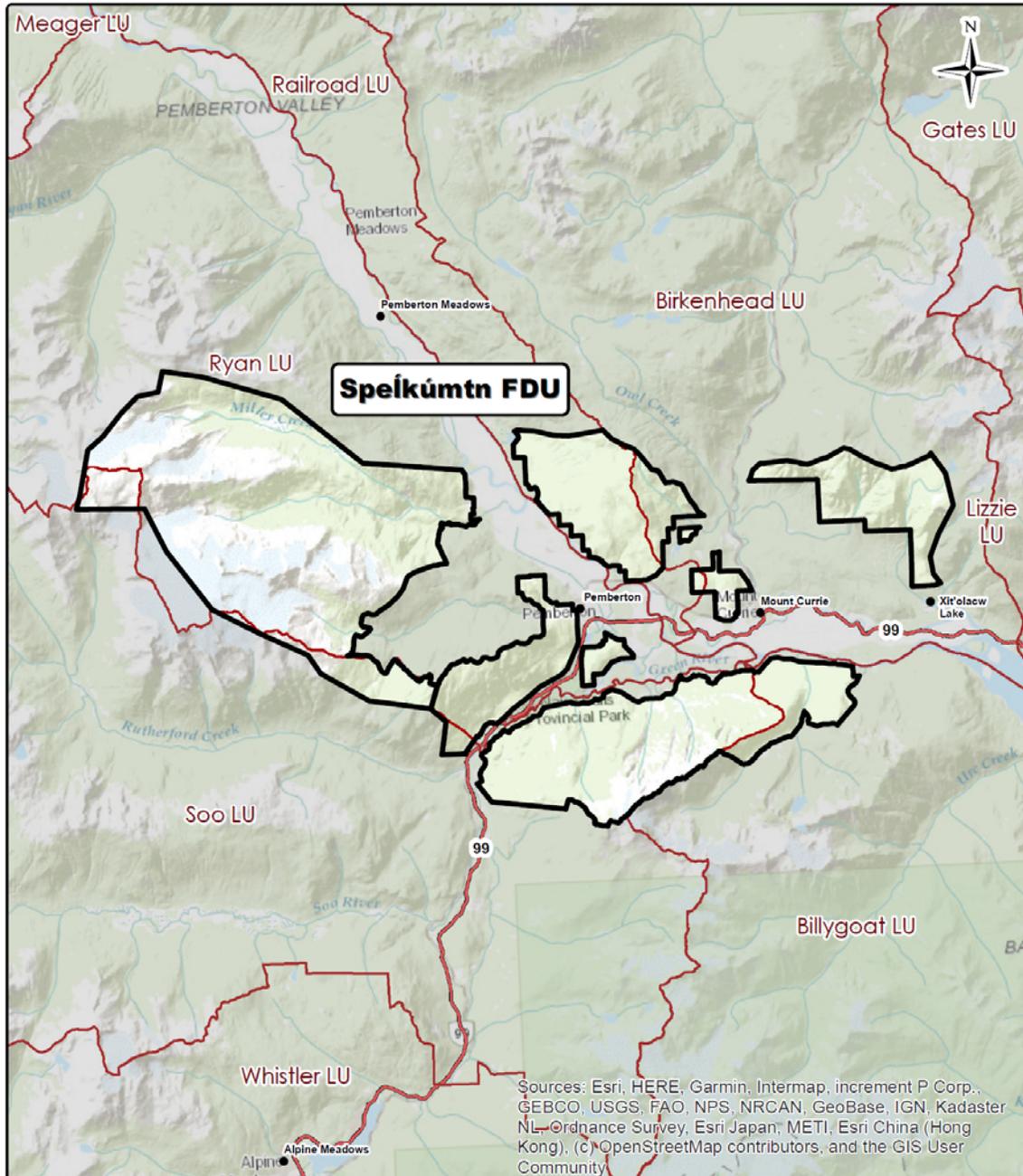


Figure 1: FSP Overview Map, showing the extent of the Forest Development Unit and the portion of the FDU within each Landscape Unit

1.9 Application of this FSP (FRPA S.3 (4))

This FSP applies to the agreements listed in Table 2; cutting permits (C.P.) and road permits (R.P.) issued or granted to the holder:

- a) after the Commencement date
- b) within the FDU's

Table 2. Agreement Holders

HOLDER	AGREEMENT
Spelkúmtn Community Forest Limited Partnership	Community Forest Agreement K5X

1.10 Cutblocks and Roads to which the Forest Practices Code (FPC) will Continue to Apply (FRPA s. 197(4)(5)(7))

None in effect.

1.11 Protection of Cutblocks and Roads to which s. 196(1) of FRPA or FPPR s. 110 Apply

None to declare.

1.12 Protection of Cutblocks and Roads to which s. 196(2) of FRPA Apply

None in effect.

1.13 Designations in Effect Four Months Prior to the Date of Submission of this FSP (FPPR s. 14(2)(3))

The FSP map(s) show the designations and other requirements listed in s. 14(3) of the FPPR that were in effect four months before the submission of this FSP. S. 14 (2) of the FPPR are as noted in the following table:

Table 3. Section 14 FDU orders and dates

Type of Designation	FDU where order applies	Date Designated
FPPR s.14(3)(a) Ungulate Winter Range		
Ungulate Winter Range #U2-002 (Mountain. Goat) Soo Timber Supply Area (TSA)	Spelkúmtn	October 6, 2003
Ungulate Winter Range #U2-005, (Deer and Moose Winter Range) Soo TSA	Spelkúmtn	October 31, 2014.
FPPR s.14(3)(b) Wildlife Habitat Areas		
Grizzly Bear 2-172 to 2-175, 2-177 to 2-193, 2-204, 2-254 to 2-270	Spelkúmtn	May 23, 2006
Grizzly Bear and Coastal Tailed Frog 2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443	Spelkúmtn	August 25, 2010
ORDER – Wildlife Habitat Areas 2-517 to 2-525 (Spotted Owl)	Spelkúmtn	February 28, 2013
FPPR s.14(3)(c) Fisheries sensitive watersheds		
	None designated	
FPPR s.14 (3)(d) lakeshore management zone		
	None in effect	
FPPR s.14 (3)(e) Scenic area		
Sea to Sky Scenic Area and Visual Quality Objectives for Hwy 99 Corridor;	Spelkúmtn	December 1995
Three Corridor Landscape Unit	Spelkúmtn	December 1995
FPPR s.14 (3)(f) Lake identified as an L1 lake		
	None designated	
FPPR s.14 (3)(g) Community Watersheds		
Pemberton Creek Community Watershed	Spelkúmtn	June 15, 1995
Peq Creek Community Watershed	Spelkúmtn	June 15, 1995
FPPR s.14 (3)(h) Old Growth Management Areas		
Established OGMAs as per the Railroad Landscape Unit and; Amendment Order – Old Growth Management Areas in the Railroad Landscape Unit	Spelkúmtn	September 6, 2004 and December 10, 2018
Established OGMAs as per the Ryan Landscape Unit	Spelkúmtn	September 6, 2004
Established OGMAs as per the Birkenhead Landscape Unit	Spelkúmtn	May 9, 2005

Established OGMAs as per the Soo Landscape Unit	Spelkúmtn	August 13, 2004 repealed and replaced by amendment December 16, 2010
Established OGMAs as per the Billygoat Landscape Unit	Spelkúmtn	September 6, 2004
FPPR s.14(3)(i) Prohibited Timber Harvesting by Enactment	None designated	
Sea to Sky Land and Resources Management Plan (S2S LRMP)		
S2S LRMP – Wildland Area Order	Spelkúmtn	March 24, 2011
S2S LRMP – Order Establishing Land Use Objectives for the Sea to Sky Land and Resources Management Plan and S2S LRMP – Order Adding the Definition of Forested Area and Amending the Objectives for First Nation Cultural Places	Spelkúmtn	August 13, 2013
FPPR s.14(3)(j) Cutting permits and Road Permits		
N/A	Spelkúmtn	N/A

1.14 Areas excluded from FSP

Areas excluded from the FDU are areas such as Indian reserves, woodlots, private land, provincial and federal parks.

1.15 First Nations and Public Consultation and Stakeholder Engagement

The holder of the FSP understands that consultation is an important process allowing for a two-way exchange of information between themselves and interested or potentially affected local groups, stakeholders and/or members of the public.

The intent of the consultation process is the following:

- To promote discussion and consultation among agreement-holders, resource agencies, non-government organizations, First Nations and the public about forest development and related activities including those values which are important for the public, First Nations, and other stakeholders.
- to provide notice, raise awareness and educate the local public on upcoming planned forest harvesting and/or reforestation activities;
- to deliver information in a manner that allows for meaningful input and information exchange;
- to strive to understand potential conflicts early in the planning process; and
- to identify potentially affected parties adjacent or within a planned reforestation or harvesting area.

Two parallel consultation processes will be undertaken – one for general consultation (described below), and another with First Nations specifically (as described in section 2.9 “Cultural Heritage Resources”).

The FSP/Agreement holder will aim to develop positive working relationships and communications protocols with community groups, government agencies and other stakeholders with interests in the Community Forest landbase. The Licensee will endeavour to maintain an up to date list of relevant contacts to facilitate information sharing and consultation in the case of proposed operations that may affect First Nations and stakeholders identified. Specific stakeholder individuals and groups may change over time.

Consultation regarding operational/block level activities will be carried out with potentially affected stakeholders on an ongoing basis, as relevant to the location of planned harvesting and road building or deactivation activities. The potentially affected stakeholders will be notified and their input considered in management decisions.

1.16 Site Plans and Standard Units

As described in Section 10 of the FRPA and Section 34 of the FPPR, the holder of an FSP must prepare a site plan in accordance with the prescribed requirements for any cut block or road prior to the commencement of timber harvesting or road construction. The purpose of the site plan document is to identify the approximate location of the cut block(s) and road(s), must be consistent with the FSP, FRPA and the regulations, and describe how the results and strategies contained within the FSP apply to the area. The site plan must also outline the standard units for the area, the soil disturbance limits and the stocking standards required to establish a free growing stand.

The site plan is the basic operational plan that encompasses and balances all resource features and values. The Site Plan is prepared, signed and sealed by a Registered Professional Forester prior to the commencement of proposed timber harvesting operations. Standard units within the site plan indicate areas that generally possess uniformity in ecological characteristics, and result in similar silviculture management through the application of a stocking standard.

2.0 RESULTS or STRATEGIES

This section of the FSP outlines the broad forest management goals for the FDU covered by this plan. The FSP describes the objectives set by government with respect to the FRPA and FPPR and specifies the results or strategies that the holder of the FSP will utilize so that their forestry operations are conducted consistent with the objectives set by government for the FDU.

Section 149(1) of the FRPA sets out the ability of government to prescribe objectives with respect to forest management activities on crown land. Specifically, this section states: *The Lieutenant Governor in council may make regulations prescribing objectives in relation to one or more of the following forest resource values:*

- (a) soils;
- (b) visual quality;
- (c) timber;
- (d) forage and associated plant communities;
- (e) water;
- (f) fish;
- (g) wildlife;
- (h) biodiversity;
- (i) recreation resources;
- (j) resource features;
- (k) cultural heritage resources.

As noted in section (1.2.1), the management plan for Community Forest K5X provides further context in the form of community goals and objectives for management of timber and non-timber resource values. This FSP summarizes objectives that are legally defined.

2.1 Soils

Section 5 of the FPPR:

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

FDU	Strategy
Spelkúmtn	In accordance with section 12.1(1) of the FPPR, when conducting primary forest activities, the Holders of this FSP undertake to comply with s.35 and s.36 of the FPPR as those sections were on the date this FSP was submitted for approval.

2.2 Timber

Section 6 of the FPPR:

The objectives set by Government for timber are to:

- (a) *maintain or enhance an economically valuable supply of commercial timber from British Columbia's forests,*
- (b) *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*

(c) 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.

Map 1, Appendix B provides an overview of forest cover and forest age class distribution across the FDU.

FDU	N/A
Spelkúmtn	As per section 12(8) of the FPPR, no results or strategies are required for this objective.

2.3 Visual Quality

Section 9.2 of the FPPR:

The objective set by government in relation to visual quality for a scenic area, that

- a) *was established on or before October 24, 2002 and*
- b) *for which there is no visual quality objective is to ensure that the altered forest landscape for the scenic area*
- c) *in visual sensitivity class 1 is in either the preservation or retention category,*
- d) *in visual sensitivity class 2 is in either the retention or partial retention category,*
- e) *in visual sensitivity class 3 is in either the partial retention or modification category,*
- f) *in visual sensitivity class 4 is in either the partial retention or modification category and*
- g) *in visual sensitivity class 5 is in either the modification or maximum modification category.*

Scenic areas have been established by government under the FPC and continued under FRPA s. 180(c) for the Sea-to-Sky Scenic area Highway 99 corridor and the 3-Corridors Landscape Unit. Visual Quality Objectives (VQO's) formally established under the FPC are continued under FRPA s.181. Within known scenic areas, recommended Visual Quality Classes (rVQC) were established and brought as VQO's under Government Actions Regulation (GAR) s. 17.

Map 2, Appendix B illustrates the locations within the FDU which are subject to Visual Quality Objectives.

FDU	Strategy
Spelkúmtn	The holders of this FSP, when operating within established scenic areas; will plan and implement primary forest activities consistent with the Visual Quality Objective applicable to the area.

2.4 Wildlife

Section 7 of the FPPR states that the objectives set by the Provincial Government for wildlife are “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

- (a) the survival of species at risk;
- (b) the survival of regionally important wildlife, and
- (c) the winter survival of specified ungulate species.”

Section 7 of the FPPR further states that “a person required to prepare a forest stewardship plan must specify a result or strategy in respect of the objective stated under subsection (1) only if the minister responsible for the *Wildlife Act* gives notice to the person of the applicable (a) species referred to in subsection (1) and indicators of the amount, distribution and attributes of wildlife habitat described in subsection (1).”

Section 7 of the FPPR goes on to state that “if satisfied that the objective set out in subsection (1) is addressed, in whole or in part, by an objective in relation to a wildlife habitat area or an ungulate winter range, a general wildlife measure, or a wildlife habitat feature, the minister responsible for the *Wildlife Act* must exempt a person from the obligation to specify a result or strategy in relation to the objective set out in subsection (1) to the extent that the objective is already addressed.”

2.4.1 Species at Risk (Part of the Notice)

On December 21, 2004, the government issued a directive titled ‘*Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Sea to Sky Natural Resource District*’. The Notice (copy in appendix D) identified the following species as being Species at Risk and addressed habitat requirements for the Species at Risk:

- 1) Marbled Murrelet (*Brachyramphus marmoratus*)
- 2) Grizzly Bear (*Ursus arctos*)
- 3) Coastal Tailed Frog (*Ascaphus truei*)
- 4) Spotted Owl (*Strix occidentalis*)

Map 3, Appendix B illustrates the location of Wildlife Habitat Areas which have been established across the plan area to address conservation of habitat for species at risk.

FDU	No Results or Strategy required
Spelkúmtn	In respect of Marbled Murrelet (<i>Brachyramphus marmoratus</i>): There are no Marbled Murrelet Wildlife Habitat Areas established within any portion of the FDU covered by this FSP.

All areas of the FDU covered by this FSP are located greater than 50km from the sea and thus the FDU is considered to have a low likelihood to contain suitable nesting habitat, (IWMS 2004).

FDU	Result
Spelkúmtn	In respect of Coastal Tailed Frog (<i>Ascaphus truei</i>): Section 1c of the ‘ <i>Order – Wildlife Habitat Areas 2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443 Grizzly Bear – Squamish Forest District</i> ’ states that pursuant to section 7(3) of the FPPR, the person(s) required to prepare a Forest Stewardship Plan are hereby exempted from the obligation to prepare Results or Strategies in relation to the objective set out in Section 7(1) of the FPPR for the Coastal Tailed Frog in the Sea to Sky Natural Resource District [formally, Squamish Forest District]. When planning and conducting primary forest activities, the holder of this FSP will comply with the Order.

The Ministry of Environment has determined that due to the considerable amount of land that has been established as Grizzly Bear WHAs, that also include considerable amounts of suitable Coastal Tailed Frog habitat, it is not necessary to establish any WHAs specifically for Coastal Tailed Frog habitat. Considerable amounts of Coastal Tailed Frog habitat are also protected within established Old Growth Management Areas and Ungulate Winter Ranges. Some additional

Coastal Tailed Frog habitat is also protected at the stand level with riparian management areas and wildlife tree patch reserves. The above referenced Order addresses how Coastal Tailed Frog habitat is to be managed in the Sea to Sky Natural Resource District and in the FDU listed above. However, it should be noted that WHAs for Grizzly Bear that include Coastal Tailed Frog habitat have only been designated in the portion of the Speikúmtm FDU overlapped by the Ryan Landscape Unit.

FDU	Strategy
Speikúmtm	<p>In respect of Grizzly Bear (<i>Ursus arctos</i>):</p> <p>Subsequent to the 'Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Sea to Sky Natural Resource District' for Grizzly Bear, there were two orders designated that apply to Grizzly Bear habitat within the FSP plan area.</p> <p>'Order - Wildlife Habitat Areas #2-172 to 2-175, 2-177 to 2-193,2-204 and 2-254 to 2-270', signed May 23, 2006. [Appendix D]</p> <p>and the</p> <p>'Order - Wildlife Habitat Areas 2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443', signed August 25, 2010. [Appendix D]</p> <p>the Holder of this FSP will:</p> <ul style="list-style-type: none"> • When conducting primary forest activities within Wildlife Habitat Areas (2-172 to 2-175, 2-177 to 2-193, 2-204 and 2-254 to 2-270), as spatially identified on the Schedule A map of the Order and on the FSP map #3 [Appendix B], will conduct the activities consistent with the General Wildlife Measures described in Schedule #1 of the Order Establishing the Grizzly Bear Wildlife Habitat Areas signed May 23, 2006. • When conducting primary forest activities within Wildlife Habitat Areas (2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443), as spatially identified on the Schedule A map of the Order and on the FSP map #3 [Appendix B], will conduct the activities consistent with the General Wildlife Measures described in Schedule #1 of the 'Order – Wildlife Habitat Areas 2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443', dated August 25, 2010. <p>When planning and conducting primary forest activities, the holder of this FSP will manage the identified Grizzly Bear Wildlife Habitat Areas which fall within the Speikúmtm FDU consistent with the General Wildlife Measures set out in the Orders.</p>

The above referenced Orders address how Grizzly Bear habitat is to be managed in the Sea to Sky Natural Resource District across all Landscape Units / Forest Development Units within the District. However, it should be noted that WHAs for Grizzly Bear have only been designated in the portion of the Speikúmtm FDU overlapped by the Ryan Landscape Unit.

FDU	Strategy
Speikúmtm	<p>In respect of Spotted Owl (<i>Strix occidentalis</i>):</p> <p>Section 3 of the ORDER-Wildlife Habitat Areas #2-517 to 2-525 [Spotted Owl] (Appendix D) Sea to Sky District was signed on February 28, 2013.</p> <p>When planning and conducting primary forest activities, the holder of this FSP will comply with the Order and manage the identified Spotted Owl Wildlife Habitat Areas within the Speikúmtm FDU according to the General Wildlife Measures set out in the <i>Order – Wildlife Habitat Areas #2-517 to 2-525</i></p>

2.4.2 Species at Risk (Not part of the Notice)

In addition to the species at risk identified in the NOTICE above, as per direction from a letter issued by the Acting District Manager for the Sea to Sky Natural Resource District (Shaw-MacLaren 2016), the following species at risk were also considered in the preparation of this plan:

- 1) Pacific Water Shrew (*Sorex bendirii*); and,
- 2) Northern Goshawk (*Accipiter gentilis*).

Northern Goshawk:

There are no established WHAs or objectives, or FPPR Section 7 Notices currently in effect for the Northern Goshawk in the Sea to Sky Natural Resource District. However, the *laingi* subspecies is listed as threatened federally by COSEWIC under the *Species at Risk Act*, listed as imperiled by the BC Conservation Data Centre, and is a red-listed / endangered species provincially. The *laingi* subspecies is also the subject of a draft Federal recovery strategy. The *atricapillus* subspecies is not listed federally, is listed as a Species of Special Concern by the BC Conservation Data Centre, and is a blue-listed / species of special concern provincially. The Spelkúmtn Community Forest operating area is at the extreme eastern edge of the *laingi* subspecies' range, but the *atricapillus* subspecies is common throughout. As such, it is more likely that management activities may affect the *atricapillus* subspecies vs the *laingi*.

FDU	Strategy
Spelkúmtn	<p>In respect of Northern Goshawk (<i>Accipiter gentilis laingi</i>):</p> <p>When planning and conducting primary forest activities, the FSP holder will adhere to the following strategies:</p> <ul style="list-style-type: none"> • If a Goshawk nest is located, a Qualified Person will determine appropriate measures to act in accordance with the Wildlife Act, the Implementation Plan for the Recovery of Northern Goshawk, <i>laingi</i> Subspecies (<i>Accipiter gentilis laingi</i>) in British Columbia [FLNRORD, February 2018], the Science-Based Guidelines for Managing Northern Goshawk Breeding Areas in Coastal British Columbia [McLaren et al 2015] and other pertinent legislation. Measures developed by the Qualified Person will be implemented by the FSP holder to avoid disturbance to the nest or individual goshawk. These measures include, but will not be limited to: timing restrictions on activities with potential to disturb nesting goshawks and / or delineating no-work zones of an appropriate width on active nest sites. Buffer width and management considerations will be based on site specific features such as nest activity, nest location, surrounding topography, forest cover and habitat types, auditory screening characteristics of the landscape and the types of activities expected to occur adjacent to nest. • If a Goshawk or Goshawk nest is encountered when planning or conducting primary forest activities it will be reported to the BC Conservation Data Centre and Ministry of Forests Lands, Natural Resource Operations and Rural Development (FLNRORD) as soon as practical. Prior to initiating fieldwork, field staff will be trained in the identification of Goshawk individuals, habitat and their nests.

Pacific Water Shrew:

There are no established WHAs or objectives, or FPPR Section 7 Notices currently in effect for the Pacific Water Shrew in the Sea to Sky Natural Resource District. However, it is listed as Endangered in Canada by COSEWIC under the Federal *Species at Risk Act*, listed as Imperiled by the BC Conservation Data Centre, and is a Red-Listed / Endangered Species provincially. The Pacific water shrew is also the subject of a draft Federal recovery strategy. The current documented range of the Pacific Water Shrew in British Columbia includes the Fraser Valley, lower mainland and as far north as Squamish. The Pacific water shrew is not currently believed to inhabit the Spelkúmtn FDU, but little is known about this species, and suitable habitat types may exist that could support Pacific water shrew populations.

FDU	Strategy
Spelkúmtn	<p>In respect of Pacific Water Shrew (<i>Sorex bendirii</i>): For riparian areas with known Pacific Water Shrew populations, the Holder of this FSP will conduct primary forest activities as follows:</p> <ul style="list-style-type: none"> • Machinery will not cross these riparian features except on a road. • New road crossings will be located elsewhere wherever practical. • Machinery working within the Riparian Management Zone will be minimized wherever practical. • A minimum 10m Riparian Reserve Zone will be established, which will be subject to the restrictions listed in Section 51 of the FPPR. • A minimum of 10% of the basal area within the Riparian Management Zone will be retained. • If any individuals are found, sightings will be reported to the BC Conservation Data Centre.

2.4.3 Regionally Important Wildlife

FDU	No Result or Strategy Required
Spelkúmtn	<p>(B) Survival of Regionally Important Wildlife The Ministry responsible for the Wildlife Act has not identified regionally important wildlife within the FDU covered by this FSP. Consequently, no results or strategies are required.</p>

2.4.4 Winter Survival of Specified Ungulate Species

To manage for the winter survival of specified ungulate species (Mountain goat, Black-tailed deer and Moose), Ungulate Winter Range (UWR) areas containing suitable habitat to promote winter survival of ungulate species have been established within the plan area. Areas established as UWR are subject to specific management requirements as defined by the 'Order' establishing the UWR. Map 3, Appendix B illustrates the location of established UWR within the plan area.

FDU	Strategy
Spelkúmtn	<p>In respect of Mountain Goat (<i>Oreamnos americanus</i>)</p> <p>With respect to ORDER-UNGULATE WINTER RANGE #U-2-002 [October 6, 2003] which established winter ranges for Mountain Goats. [copy in appendix D]</p> <p>The holders of this FSP will:</p> <ol style="list-style-type: none"> 1) Conduct primary forest management activities within Ungulate Winter Range (#U2-002), as spatially identified on the #U2-002 Schedule A map, and on FSP map #3, in accordance with Objectives #1 and #2 of the Order.
FDU	Strategy
Spelkúmtn	<p>In respect of Black-tailed Deer (<i>Odocoileus hemionus</i> spp.)</p> <p>With respect to 'ORDER - AMENDMENT to UNGULATE WINTER RANGE #U-2-005' [October 31, 2014] for established winter ranges for Black-tailed Deer. [copy in appendix D]</p> <ol style="list-style-type: none"> 1) The holders of this FSP will conduct primary forest management activities within Deer Winter Ranges, as identified on the U2-005 Schedule A map, and on FSP map #3, in accordance with Schedule 1 - General Wildlife Measures (#1 and #2a, #2b, #2c, #2d) for Deer Winter Range – Retention Units (DWRRE) and General Wildlife Measures (#3, #4 and #5) for Deer Winter Range – Rotation Units (DWRRO) and General Wildlife Measures (#11a, #11b, #11c, #11d) for Incursions, as defined by the Order.
FDU	Strategy
Spelkúmtn	<p>In respect of Moose (<i>Alces alces</i>)</p> <p>With respect to 'ORDER - AMENDMENT to UNGULATE WINTER RANGE #U-2-005' [October 31, 2014] for established winter ranges for Moose. [copy in appendix D]</p> <ol style="list-style-type: none"> 1) The holders of this FSP will conduct primary forest management activities within Moose Winter Ranges, as identified on the U2-005 Schedule A map, and on FSP map #3, in accordance with the Schedule 1-General Wildlife Measures (#6, #7a, #7b, #7c, #7d) for Moose Core Winter Range (MCWR) and General Wildlife Measures (#8, #9, #10) for Moose Winter Range Forage Management Zone (MWRFMZ) and General Wildlife Measures (#11a, #11b, #11c, #11d) for Incursions, as defined by the Order.

2.5 Water, Fish, Wildlife and Biodiversity within Riparian Areas

Section 8 of the FPPR

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.

FDU	Strategy
Speikúmtn	In accordance with section 12.1(2) of the FPPR, the holder of this FSP will comply with sections 47 (<i>Stream Riparian Classes</i>), 48 (<i>Wetland Riparian Classes</i>), 49 (<i>Lake Riparian Classes</i>), 50 (<i>Restrictions in a Riparian Management Area</i>), 51 (<i>Restrictions in a Riparian Management Zone</i>), 52(2) (<i>Restrictions in a Riparian Management Zone</i>) and 53 (<i>Temperature Sensitive Streams</i>) of the FPPR as those sections were on the date of submission of this FSP.

FDU	Strategy																				
Speikúmtn	<p>(1) In respect to sections 8 and 12(3) of the FPPR, to address the retention of trees in a riparian management zone, the Holders of this FSP will meet or exceed the level of retention for each riparian classification as detailed in the following table:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Column #1 Riparian Classification</th> <th style="text-align: center;">Column #2 Gross Basal Area (m²/ha) to be Retained within Riparian Management Zone (%)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">S1-A</td> <td style="text-align: center;">Greater than or equal to 20%</td> </tr> <tr> <td style="text-align: center;">S1-B</td> <td style="text-align: center;">Greater than or equal to 20%</td> </tr> <tr> <td style="text-align: center;">S2</td> <td style="text-align: center;">Greater than or equal to 20%</td> </tr> <tr> <td style="text-align: center;">S3</td> <td style="text-align: center;">Greater than or equal to 20%</td> </tr> <tr> <td style="text-align: center;">S4</td> <td style="text-align: center;">Greater than or equal to 10%</td> </tr> <tr> <td style="text-align: center;">S5</td> <td style="text-align: center;">Greater than or equal to 10%</td> </tr> <tr> <td style="text-align: center;">S6</td> <td style="text-align: center;">Greater than or equal to 0%</td> </tr> <tr> <td style="text-align: center;">All Wetland Classifications</td> <td style="text-align: center;">Greater than or equal to 10%</td> </tr> <tr> <td style="text-align: center;">All Lake Classifications</td> <td style="text-align: center;">Greater than or equal to 10%</td> </tr> </tbody> </table> <p>(2) In respect to sections 8 and 12(3) of the FPPR, to address the retention of trees in a riparian management zone, the Holder of this FSP will:</p> <ul style="list-style-type: none"> (a) ensure that prior to harvesting; retention levels within the RMZ's are determined by a Qualified Person through a riparian assessment that considers: <ul style="list-style-type: none"> i) all the factors listed in Schedule 1, section 2 of the FPPR as that section was on the date of submission of this FSP and ii) potential site-specific safety and operational issues. (b) design cutblocks and roads in a manner that is consistent with the retention levels as determined by the Qualified Person as described in (a). (c) plan and conduct primary forest activities consistent with the results and recommendations of the assessment (a) and the design (b). <p>In addition, the holder of this FSP will comply with Sections 54 (Fan Destabilization), 55 (Stream Crossings), 56 (Fish Passage) and 57 (Protection of Fish and Fish Habitat) of the FPPR during the term of the plan.</p>	Column #1 Riparian Classification	Column #2 Gross Basal Area (m ² /ha) to be Retained within Riparian Management Zone (%)	S1-A	Greater than or equal to 20%	S1-B	Greater than or equal to 20%	S2	Greater than or equal to 20%	S3	Greater than or equal to 20%	S4	Greater than or equal to 10%	S5	Greater than or equal to 10%	S6	Greater than or equal to 0%	All Wetland Classifications	Greater than or equal to 10%	All Lake Classifications	Greater than or equal to 10%
Column #1 Riparian Classification	Column #2 Gross Basal Area (m ² /ha) to be Retained within Riparian Management Zone (%)																				
S1-A	Greater than or equal to 20%																				
S1-B	Greater than or equal to 20%																				
S2	Greater than or equal to 20%																				
S3	Greater than or equal to 20%																				
S4	Greater than or equal to 10%																				
S5	Greater than or equal to 10%																				
S6	Greater than or equal to 0%																				
All Wetland Classifications	Greater than or equal to 10%																				
All Lake Classifications	Greater than or equal to 10%																				

It should be noted that additional retention within the Riparian Management Zone may be prescribed prior to harvesting by a Qualified Person, having regard to:

- The findings of Forest and Range Evaluation Program Extension Notes 38 – 40 in regards to retention levels on small streams;
- Operational constraints, economics and efficiency;
- The need to buffer the riparian feature from the introduction of materials that are deleterious to water quality or fish habitat;
- The role played by trees and understory vegetation in conserving water quality, fish habitat, wildlife habitat and biodiversity;
- The role of the riparian management zone in maintaining stream bank and stream channel integrity and normally functioning drainage processes;
- The relative importance and sensitivity of the riparian feature/class in conserving water quality, fish habitat, wildlife habitat and biodiversity;
- The type, timing or intensity of forest practices that are proposed;
- The species composition and physical structure of the riparian management zone as it was prior to timber harvesting;
- The potential safety hazards;
- The role of the riparian management zone, where applicable, in maintaining the integrity of the associated riparian reserve zone;
- The risk as determined by a windthrow hazard assessment;
- The risk, where applicable, as determined by a terrain stability field assessment; and
- The role of forest shading in controlling an increase in temperature within a temperature sensitive stream, if the increase might have a deleterious effect on fish or fish habitat.

Riparian management boundaries will be marked in the field (where necessary), shown on operational maps, documented in the Site Plan, and discussed with operators prior to startup in a pre-work.

2.5.1 Fish habitat in Fisheries Sensitive Watersheds

Section 8.1 of the FPPR

The objectives set by government for fish habitat in fisheries sensitive watersheds are:

- (1) *In this section “**fisheries sensitive watershed**” means an area identified in Schedule 2 of this regulation*
 - (a) *With significant downstream fisheries values continued under section 180(f) of the Act and significant watershed sensitivity continued under section 180(g) of the Act, and*
 - (b) *For which there is no fisheries sensitive watershed objective.*
- (2) *Until December 31, 2005 the objective set by government for fish habitat in fisheries sensitive watersheds is to prevent to the extent described in subsection (3) the cumulative hydrological effects of primary forest activities in the fisheries sensitive watershed from resulting in a material adverse impact on the habitat of the fish species for which the fisheries sensitive watershed was established.*
- (3) *The objective set by government under subsection (2) applies only to the extent that it does not unduly reduce the supply of timber from British Columbia’s forests.*
- (4) *If satisfied that the objective set out in subsection (2) is not required to provide special management, the minister responsible for the Wildlife act must exempt a person from the requirement to specify a result or strategy in relation to the objective.*
- (5) *If satisfied that the objective set out in subsection (2) is addressed, in whole or in part, by an enactment, the minister*

FDU	No Result or Strategy Required
Spelkúmtn	As there are no fisheries sensitive watersheds identified in Schedule 2 of the FPPR located within the Sea to Sky Natural Resource District or the applicable FDU in the areas covered by this FSP, no results or strategies are required.

Community Watersheds

Section 8.2 of the FPPR

- (1) In this section “**community watershed**” means a community watershed
 - (a) that is continued under section 180 (e) of the Act, and
 - (b) for which a water quality objective has not been
 - (i) continued under section 181 of the Act, or
 - (ii) established under the Government Actions Regulation.
- (2) The objective set by government for water being diverted for human consumption through a licensed waterworks in a community watershed is to prevent to the extent described in subsection (3) the cumulative hydrological effects of primary forest activities within the community watershed from resulting in
 - (a) a material adverse impact on the quantity of water or the timing of the flow of the water from the waterworks, or
 - (b) the water from the waterworks having a material adverse impact on human health that cannot be addressed by water treatment required under
 - (i) an enactment, or
 - (ii) the licence pertaining to the waterworks
- (3) The objective set by government under subsection (2) applies only to the extent that it does not unduly reduce the supply of timber from British Columbia's forests.
- (4) If satisfied that the objective set out in subsection (2) is not required to provide special management, the minister responsible for the Wildlife Act must exempt a person from the requirement to specify a result or strategy in relation to the objective.
- (5) If satisfied that the objective set out in subsection (2) is addressed, in whole or in part, by an enactment, the minister responsible for the Wildlife Act must exempt a person from the requirement to specify a result or strategy in relation to the objective set out in subsection (2) to the extent that the objective is already addressed.

Map 3, Appendix B illustrates the location of Community Watershed Areas within the Plan area.

FDU	Strategy
Spelkúmtn	<p>With respect to a community watershed that is subject to section 8.2 of the FPPR at the time of submission of this FSP, and is listed in Table 3 of this FSP, and is the subject of an approved Watershed Assessment as listed below;</p> <p>a) Integrated Watershed Resource Plan, Pemberton Creek, Level 1 Coastal Watershed Assessment Procedure Pemberton Creek Community Watershed (2001)</p> <p>If primary forest activities are being planned and/or conducted within the Pemberton Creek Community Watershed, the holder of this FSP will engage a Qualified Person to:</p> <ul style="list-style-type: none"> • Review the existing watershed assessment, as listed above, to determine that it adequately addresses Section 8.2 of the FPPR and; • if required, update the existing watershed assessment. • Plan and conduct primary forest activities consistent with the current or revised watershed assessment.

FDU	Strategy
Spelkúmtn	<p>With respect to a community watershed that is subject to section 8.2 of the FPPR at the time of submission of this FSP, and is listed in Table 3 of this FSP, and is not the subject of an existing Watershed Assessment;</p> <p>If primary forest activities are contemplated for a community watershed without an existing Watershed Assessment; the holders of this FSP will:</p> <ol style="list-style-type: none"> 1) Engage a Qualified Person to conduct an assessment of the watershed in which the activities are proposed. The scope and detail of the assessment are to be commensurate with the size of the watershed, scale of proposed activities and the potential risk to water quality. The assessment is to include at a minimum, a review of: <ol style="list-style-type: none"> I. The cumulative hydrological effects of previous and planned primary forest activities within the community watershed and any other requirements listed in section 8.2 of the FPPR II. Slope stability III. Harvest history and green-up status IV. Road density V. The degree of hydrologic recovery VI. Potential risks to water quality, timing and flow 2) Provide an opportunity for the community watershed stakeholders to review and comment on the resulting assessment. The holder of the FSP will consider and reply in writing, to written comments received within 30 days of the assessment becoming available for stakeholder review. 3) Plan and conduct primary forest activities consistent with the results and recommendations of the assessment. 4) Provide an opportunity for the community watershed stakeholders to review and comment on the planned primary forest activities. The holder of the FSP will consider and reply in writing, to written comments received within 30 days of the primary forest activity plans becoming available for stakeholder review.

2.6 Wildlife and Biodiversity – Landscape Level

2.6.1 Cutblock Location and Design

Section 9 of the FPPR:

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.

FDU	Result
Spelkúmtm	In accordance with section 12.1(3) of the FPPR, the holder of this FSP will comply with sections 64 and 65 of the FPPR as those sections were on the date of submission of this FSP.

Limits on maximum cutblock size and on harvesting adjacent to existing non-greened up cutblocks will be utilized to ensure all operations remain consistent with the objectives for wildlife and biodiversity at the landscape level.

2.6.2 Old Growth Management Areas

Old Growth Management Areas (OGMAs) are either intact stands of forest greater than 240 years old with old growth stand structure attributes or forested stands that are less than 240 years old, where old growth stand structure attributes can be recruited. OGMAs have been legally established within the Spelkúmtm FDU by the *Order to Establish a Landscape Unit and Objectives* for the Billygoat, Birkenhead, Railroad, Ryan and Soo landscape units. The Spelkúmtm FDU overlaps on portions of 5 separate established Landscape Units. Each individual Order establishing a LU is applied to the specific portion of the Spelkúmtm FDU that is contained within each established LU. The location of the portions of each of the 5 Landscape Units falling within the Spelkúmtm FDU are illustrated on FSP map #3 located in Appendix B. Copies of the Orders and their respective objectives can be found in appendix C.

FDU	Result
Spelkúmtm	<p>In respect of wildlife and biodiversity at the landscape level:</p> <p>In accordance with Section 25.1 (2) of the FPPR, when planning and conducting primary forest activities, the FSP holder will manage landscape level biodiversity in accordance with Objective 1 of the following orders:</p> <ol style="list-style-type: none"> 1) Order to Establish a Landscape Unit and Objectives - Billygoat Landscape Unit (August 13, 2004) and amended (January 8, 2014) 2) Order to Establish a Landscape Unit and Objectives – Railroad Landscape Unit (August 13, 2004) and amended (Dec 10, 2018) 3) Order to Establish a Landscape Unit and Objectives-Birkenhead and Gates Landscape Units [April 13, 2005] 4) Order to Establish a Landscape Unit and Objectives-Ryan Landscape Unit [August 13, 2004] 5) Order to Establish a Landscape Unit and Objectives-Soo Landscape Unit [August 13, 2004] and amended [December 16, 2010]

2.7 Wildlife and Biodiversity

2.7.1 Wildlife Tree Retention Areas

Section 9.1 of the FPPR states that the objective set by government for wildlife and biodiversity at the stand level is to “without unduly reducing the supply of timber from British Columbia’s forests, to retain wildlife trees” The holder of this FSP will comply with this objective through the establishment of Wildlife Tree Retention Areas (WTRAs) for each cutblock harvested.

FDU	Result
Spelkúmtn	In accordance with Section 12.1(4) of the FPPR, when conducting primary forest activities, the holder of this FSP will comply with section 66 of the FPPR.

In addition, Orders have been approved for the Billygoat, Birkenhead, Railroad, Ryan and Soo Landscape Units which establish additional criteria with regards to managing WTRAs. The following Results and Strategies are presented for the management of WTRAs

FDU	Result	
Spelkúmtn (Billygoat LU)	When conducting primary forest activities the holder of the FSP will manage stand level biological diversity and structural diversity in accordance with Objective 2 (1), (2) and (4) to (7) of the <i>Order to Establish a Landscape Unit and Objectives – Billygoat Landscape Unit (September 6, 2004)</i> , but will establish WTRAs in accordance with the following table, which replaces table A of the Order.	
	BEC Subzone	% WTRA
	CWHds (Coastal Western Hemlock – dry subarctic)	7
	CWHms (Coastal Western Hemlock – moist subarctic)	7
	IDFww (Interior Douglas Fir – wet warm)	12
	MHmm (Mountain Hemlock – moist maritime)	7
Spelkúmtn (Birkenhead LU)	When conducting primary forest activities the holder of the FSP will manage stand level biological diversity and structural diversity in accordance with Objective 2 (1), (2) and (4) to (7) of the <i>Order to Establish a Landscape Unit and Objectives – Birkenhead and Gates Landscape Unit (April 13, 2005)</i> , but will establish WTRAs in accordance with the following table, which replaces table A of the Order.	
	BEC Subzone	% WTRA
	CWHds (Coastal Western Hemlock – dry subarctic)	7
	CWHms (Coastal Western Hemlock – moist subarctic)	7
	IDFww (Interior Douglas Fir – wet warm)	7
	MHmm (Mountain Hemlock – moist maritime)	7
	ESSFmw (Engelman Spruce / Sub alpine Fir – moist warm)	7

Spelkúmtn (Railroad LU)	When conducting primary forest activities the holder of the FSP will manage stand level biological diversity and structural diversity in accordance with Objective 2 (1), (2) and (4) to (7) of the <i>Order to Establish a Landscape Unit and Objectives – Railroad Landscape Unit (August 13, 2004)</i> , but will establish WTRAs in accordance with the following table, which replaces table A of the Order.	
	BEC Subzone	% WTRA
	CWHds (Coastal Western Hemlock – dry subarctic)	8
	CWHms (Coastal Western Hemlock – moist subarctic)	7
	IDFww (Interior Douglas Fir – wet warm)	8
	MHmm (Mountain Hemlock – moist maritime)	7
Spelkúmtn (Ryan LU)	When conducting primary forest activities the holder of the FSP will manage stand level biological diversity and structural diversity in accordance with Objective 2 (1), (2) and (4) to (7) of the <i>Order to Establish a Landscape Unit and Objectives – Ryan Landscape Unit (August 13, 2004)</i> , but will establish WTRAs in accordance with the following table, which replaces table A of the Order.	
	BEC Subzone	% WTRA
	CWHds (Coastal Western Hemlock – dry subarctic)	10
	CWHms (Coastal Western Hemlock – moist subarctic)	8
	MHmm (Mountain Hemlock – moist maritime)	7
Spelkúmtn (Soo LU)	When conducting primary forest activities the holder of the FSP will manage stand level biological diversity and structural diversity in accordance with Objective 2 (1), (2) and (4) to (7) of the <i>Order to Establish a Landscape Unit and Objectives – Soo Landscape Unit (December 16, 2010)</i> , but will establish WTRAs in accordance with the following table, which replaces table A of the Order.	
	BEC Subzone	% WTRA
	CWHds (Coastal Western Hemlock – dry subarctic)	8
	CWHms (Coastal Western Hemlock – moist subarctic)	7
	MHmm (Mountain Hemlock – moist maritime)	7

Wildlife Tree Retention Areas (WTRA) will be established for all cutblocks by the individual block site plans in amounts consistent with WTRA requirements defined in the above tables for each BEC zone within the Landscape Unit within which the harvesting will occur.

FDU	Strategy
Spelkúmtn	<p>With regard to objective 2 (3) of the LU Orders, the holder of this FSP may harvest timber from within an established WTRA if replacement WTRA exists of equivalent quantity and equivalent or better quality within the same BEC zone, and immediately adjacent to the cutblock to which the WTRA relates.</p> <p>Prior to initiating primary forest activities within a previously established WTRA, a WTRA replacement plan will be completed by a Qualified Person. The plan will provide the rationale which supports the decision to harvest within and to replace WTRA. The holder of this FSP will ensure that primary forest activities are completed consistent with the plan.</p>

2.8 Sea to Sky Land and Resources Management Plan

This higher-level plan, approved April 14, 2011, provides strategic direction for managing local economic development, and the long-term sustainability of ecological, social, and cultural values. Two Land Use Orders were established by government as a result of this plan: '*Land Use Objectives for the Sea to Sky Land and Resource Management Plan*' [August 13, 2013], and the '*Sea to Sky Wildland Order*' [March 24, 2011]. These orders [copies in Appendix D] are applicable to the areas within all Landscape Units contained within the FDU identified by this Forest Stewardship plan.

Additionally, a Ministerial Order, titled '*Sea to Sky Land and Resources Plan – Adding the definition of forested area and amending the objectives for First Nations Cultural Places*' signed August 13, 2013,[copy in Appendix D] amended the definition of 'Cultural Places' as defined by the original Order by adding the, 'Lil'wat Nation Q'em'sam (Old Growth and Sensitive Area)' to the areas defined as a First Nation Cultural Place and adds the definition of 'Forested Area'.

As a result of the original and amended 'Orders', the following results and/or strategies have been prepared to address the listed objectives.

2.8.1 First Nations Cultural Places

Objectives for First Nations' Cultural Places have been specified in the *Land Use Objectives for the Sea to Sky Land and Resource Management Plan* [August 13, 2013]. Objectives from the Sea-to-Sky Land & Resource Management Plan enabled by the Ministerial Order are:

1. Protect the Cultural Heritage Resources within the cultural places listed in Schedule 1 of the Ministerial Order, to support First Nations' food, social, ceremonial and spiritual use of the forest.
2. Maintain 100% of the forested area in the cultural places as listed in Part 2, section 3(2) of the Ministerial Order, and listed in Section 3 of the August 13, 2013 Order.

FDU	Strategy
Speikúmtn	The holders of this FSP will, when planning and conducting primary forest activities under this FSP, do so in a manner that is consistent with the Ministerial Order for ' <i>Land Use Objectives for the Sea-to-Sky Land & Resource Management Plan</i> ' and the Ministerial Order for ' <i>Sea to Sky Land and Resources Plan – Adding the definition of forested area and amending the objectives for First Nations Cultural Places</i> '. Copies of the Ministerial Orders and respective objectives can be found in Appendix D.

Map 4, Appendix B illustrate the location of First Nations Cultural Places.

2.8.2 First Nations' Cultural Management Area

Objectives for First Nations' Cultural Management Areas, have been developed through the Ministerial Order, *Land Use Objectives for the Sea to Sky Land and Resource Management Plan* [August 13, 2013]. As there are no First Nation Cultural Management Areas within the Speikúmtn FDU, no Results, Strategies or Measures are required to address the objectives for Cultural Management Areas.

Copies of the Ministerial Order and respective objectives can be found in Appendix D.

Map 4, Appendix B illustrates there are no Cultural Management Areas within the Speikúmtn FDU.

2.8.3 Floodplains and Riparian Areas

One of the five floodplain management areas identified by the Sea-to-Sky Land & Resource Management Plan falls partially within the FDU covered in this FSP (Green River Floodplain Management Area). Objectives applicable to the FDU covered by the FSP for Floodplain Management Areas, as specified in the Ministerial Order for Land Use Objectives for the Sea-to-Sky Land & Resource Management Plan, are;

Maintain the functional integrity of the floodplain ecosystems within each of the floodplain management areas by:

- *Limiting the total area available for timber harvesting to a maximum of 20% of each floodplain management area over a rotation; and*
- *Retaining a fully representative suite of forest types, plant communities and wildlife habitats within each floodplain management area, where practicable.*

FDU	Strategy
Spelkúmtn	<p>The holders of this FSP will, when planning and conducting primary forest activities under this FSP, do so in a manner that is consistent with the Ministerial Order for Land Use Objectives for the Sea-to-Sky Land & Resource Management Plan.</p> <p>Copies of the Ministerial Order and respective objectives can be found in Appendix D.</p>

Map 4, Appendix B illustrates the location of Floodplain and Riparian Areas.

2.9 Cultural Heritage Resources

Section 10 of the FPPR

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

(a) the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and

(b) not regulated under the Heritage Conservation Act.

FDU	Strategy
Spelkúmtn	<p>1. The Holders of this FSP will, when conducting primary forestry activities under this FSP, do so in a manner consistent with:</p> <p>(a) conserving or if necessary, protecting cultural heritage resources that are:</p> <p>i) the focus of a traditional use by an aboriginal people that is of continuing importance to that people, are determined to be important, valuable and scarce, as determined through:</p> <ul style="list-style-type: none"> o documented information sharing between the Holders of this FSP and the affected First Nation prior to the review and comment period outlined in s.21 of the FPPR for this FSP and/or; o information received from the affected First Nation in accordance with FPPR s.20; o information received from the affected First Nation in accordance with section 2 below. <p>ii) not regulated under the Heritage Conservation Act or are not conserved and protected by other arrangements and;</p> <p>iii) that are likely to be adversely impacted by the activities of the Holders of this FSP, and;</p> <p>iv) capable of being addressed in the context of this FSP.</p> <p>2. The following process will be used to provide the First Nations with the opportunity to provide cultural heritage information and feedback for areas which may be impacted by primary forestry activities. This pertains to "new" proposed development areas, where "new" refers to areas not previously forwarded to First Nations for review.</p> <p>(a) The holders of this FSP will send maps of sufficient scale (ie. 1:5000) showing the location of proposed roads and block boundaries, reserve areas, creeks and water features and an overview map (i.e. 1:20,000) showing the proposed block and/or roads in context to the applicable First Nations community.</p> <p>(b) A written description of the proposed development describing any known values on the site and how they will be affected and/or protected. Values described would include but are not limited to information on botanicals, archeological or cultural heritage resources, wildlife features (dens, nests, trails), riparian features, visual quality objectives and recreation values associated with the block. The holder of the FSP will request the First Nation to review the information provided and to identify and inform the holder of the FSP if there are undisclosed cultural heritage resources with the potential to be</p>

	<p>impacted by the proposed primary forest activity.</p> <p>(c) New information and/or feedback received from the First Nations within 60 days will be reviewed in the context to which the primary forest activities will impact upon the cultural heritage resource value.</p> <p>(d) The holders of this FSP will determine, based on information and recommendations received from the potentially affected First Nation what options, if any, exist to mitigate the impacts from the proposed primary forest activities. No primary forest activities will occur unless confirmation is received from the First Nation that the activities, as planned, are appropriate to protect cultural heritage resource values.</p> <p>(e) If during primary forest activities, previously unknown cultural heritage resources are discovered, the holder will immediately suspend work in the vicinity of the heritage resource value and the First Nations and MFLNRORD will be notified in writing, as to what mitigation options, if any, will be taken to conserve and/or protect the previously unknown cultural heritage resource values.</p> <p>(f) The mitigation options identified will be required to be reviewed and approved by the potentially affected First Nation prior to continuing work in the area.</p> <p>3. In addition to subsection 1 and 2 of this strategy, and specific to western redcedar for cultural wood, the Holders of this FSP will:</p> <p>(a) plant or promote natural regeneration of western redcedar as a component of future stands, where ecologically suited, on areas referred to in FRPA s.29(1) and in accordance with the stocking standards in this FSP; and</p> <p>(b) at the request of a First Nation, and where the requested western redcedar is for cultural use, and consistent with the historical extent of the quantity of Western red cedar used for cultural use within the area of the FSP:</p> <p style="padding-left: 40px;">i) make western redcedar for cultural use available through operational sources consistent with planned operations</p> <p style="padding-left: 40px;">ii) assist a First Nation in identifying western redcedar trees suitable for cultural use, should the First Nation choose to harvest the trees themselves.</p>
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*western redcedar for cultural use refers to this species used for the making of paddles, masks, totems, canoes and similar traditional use items.

2.10 Recreation Sites, Recreation Trails and Interpretive Forest Sites

Recreation sites, trails, and interpretive forests have been established under the Forest Practices Code and are grand parented under s.180 of the FRPA. Objectives applicable to these recreation sites, trails and interpretive forests are grand parented under s.181 of the FRPA. Additional recreation sites and trails have been established under FRPA section 56 or authorized for construction under FRPA section 57 (see Appendix F for Recreation Orders and a list of established recreation sites and trails within the Sea to Sky Natural Resource District).

There are no Recreation Sites, Recreation Reserves or Interpretive Forests within the Community Forest. The following table provides a list of the established/designated recreation trails located within the FDU defined for this FSP, which were established under the FPC and have been continued under section 180 of the FRPA. The objectives associated with these sites have been continued under section 181 of the FRPA. The table also lists those recreation trails and sites which have been established or authorized under section 56 and 57 of the FRPA.

It is recognized that in the future, additional Recreation Trails or Recreation Sites may be authorized or established by BC Rec Sites and Trails within the Spelkúmtn Community Forest.

The Strategies listed below will be followed when primary forest activities are planned and conducted overlapping on, or within 100m of an authorized or established Recreation Site or Recreation Trail.

Map 5, Appendix B illustrates the location of established recreation features within the plan area.

Table 4. Established or Authorized Recreation Trails

FDU	Recreation Trails (designated various times)	Project #	Established Objectives Yes/No
Spelkúmtn	Tour De Soo	16161	N
	Chair Traverse	16173	N
	Cream Puff	33069	N
	Econoline Trail	33079	N
	Blood, Sweat and Fear	16170	N
	Back Pains / Max Pains	169534	N
	Connector Trail	16167	N
	Copper Trail	16165	N
	Graviton Trail	16168	N
	Happy Trail	33061	N
	Indy 500	16171	N
	Lower Mackenzie Trail	33085	N
	Mackenzie Basin Loop	16164	N
	Overnight Sensation	16169	N
	Upper Mackenzie Cruise Trail	16166	N
	K2 Trail	16177	N
	Lumpy's Epic	16176	N
	Nairn to One Mile Lake	16162	N
	Tower of Power	16163	N
	Mount Currie Trail	168940	N
	Bluezone Bike Trail	169534	N
	Sklelu'la7 Trail (Owl to Mackenzie)	202179	N
	METOS Trail	204368	N
	Fat Tug Trail	205798	N
	Taste the Gravy Trail	230957	N
	Sea to Sky Trail	33049	N
	Waterfall Trail	33087	N
	Recreation Sites		
Spelkúmtn	N/A		
	Interpretive Forests		
Spelkúmtn	N/A		

FDU	Strategy
Spelkúmtn	<p>(1) When planning and conducting primary forest activities which overlap on, or are within 100m of an established recreation site or recreation trail or interpretive forest for which there is an applicable established objective, the holders of this FSP will:</p> <ul style="list-style-type: none"> (a) Plan and conduct primary forest activities consistent with the established objectives for each relevant established recreation site or recreation trail or interpretive forest for which there is an applicable established objective. (b) Identify the primary user group of the feature and facilitate consultation between the licensee, the user group and the District Recreation Officer to identify any concerns or potential impacts to the feature or use of the feature, and the strategies that can be employed to minimize or eliminate these impacts. (c) Provide, in writing to the user group and to the District recreation officer, a summary of the consultation efforts, the identified concerns and the mitigation actions that will be utilized to minimize or eliminate the effects of the primary forest activity on the feature and its use.

FDU	Strategy
Spelkúmtn	<p>(1) When planning and conducting primary forest activities which overlap on, or are within 100m of an established or authorized recreation site or recreation trail or interpretive forest for which there are no established objectives, the holder of this FSP will</p> <ul style="list-style-type: none"> (a) Plan and conduct primary forest activities in a manner that ensures that the planned activity does not damage or render ineffective the relevant established recreation site or recreation trail or interpretive forest and that the recreation feature is retained and remains available for the use for which it is intended. (b) Identify the primary user group of the feature and facilitate consultation between the licensee, the user group and the District Recreation Officer to identify any concerns or potential impacts to the feature or use of the feature, and the strategies that can be employed to minimize or eliminate these impacts. (c) Provide, in writing to the user group and to the District recreation officer, a summary of the consultation efforts, the identified concerns and the mitigation activities that will be utilized to minimize or eliminate the effects of the primary forest activity on the feature and its use.

3.0 Stocking Standards

3.1 Stocking Standard Tables

The FSP must describe the Stocking Standards that will apply on the FDU (FPPR s. 16). The following information is provided to describe the stocking standards that apply on the FDUs in this FSP.

Tables describing the stocking standards that apply on all FDUs in this FSP are provided in Appendix A. These stocking standards are based on the Reference Guide for FDP Stocking Standards, dated Nov 12, 2010, including June 2018 updates / edits to address climate change adaptations, for the Vancouver Forest Region.

The stocking standards in the Sea to Sky Natural Resource District include the following: biogeoclimatic zone, subzone, variant, preferred and acceptable species combinations, regeneration dates, minimum free-growing heights, minimum inter-tree distances between well formed crop trees, and the minimum required and target stocking levels at free growing for each site series that occur within the FSP area. Ecological footnotes included as comments have been updated consistent with the BC Ministry of Forests Reference Guide for FDP Stocking Standards.

The Stocking Standards which have been developed for the SCF are presented in the Stocking Standards tables located in Appendix A.

3.1.1 Stocking Standards for Specific Site Conditions or Objectives

The FSP includes even aged, retention and partial cut stocking standards for use on appropriate sites that fall within the Wildland Urban Interface (WUI) where development of stand structural conditions that provide for reduced risk of wildfire and for enhanced protection of values is the desired objective.

Retention and partial cut stocking standards developed for wildfire management are also appropriate for use in areas where partial cutting or retention systems are required to achieve a variety of other non-timber objectives through the promotion of specific post-harvest conditions. Stocking standards developed for wildfire management and also applicable to partial cut and retention systems are designed to allow retained stems within a harvested area to contribute to regeneration and free growing obligations.

Wildfire management, single entry dispersed retention and intermediate cut stocking standards will be applied at the cutblock level through prescription of the specific standard through the block Site Plan prepared by a qualified person. The site plan will describe the pre-harvest stand structure and describe the post-harvest conditions that will be required to achieve the desired post-harvest stand structure and any associated objectives.

The sections below introduce the stocking standards and the general conditions where these standards will be applied to achieve specific post-harvest objectives.

3.1.2 Even Aged Stocking Standards for Wildfire Management

Even aged stocking standards for blocks falling within the WUI have been developed. The objective of these standards, when applied to a harvested area, is to promote development of a future stand structure which reduces the likelihood of crown fire initiation and/or to minimize the risk of a continuous crown fire in the future stand. Wildfire management stocking standards have been developed for the CWHds1 and for the IDFww, for each relevant BEC zone / site series combination expected to be present within the WUI areas of the Spelkúmtn FDU where harvesting could occur. The WUI stocking standards which have been developed have included the use of both broadleaf and conifer species. Species selected for the standards are ecologically adapted to the sites but are not necessarily expected to maximize timber production when used

as part of the fire management stocking standard. Conifer species with higher fire resistance properties have been selected and broadleaf species have been included to promote development of increased fire-resistant mixed forest stands within the WUI.

Where even-aged WUI fire management stocking standards are applied to achieve wildfire management objectives, the block site plan prepared by a qualified person must describe the desired post-harvest stand structure and provide clear objectives for the management of harvesting debris and forest fuels on the site. The block site plan must include identification of and timing for any future stand tending treatments to address desired stand structure and wildfire management.

The even-aged stocking standard for wildfire management, and associated footnotes are presented in Appendix A stocking standard tables.

3.1.3 Single Entry Dispersed Retention Stocking Standard [SEDRSS]

The SEDRESS may only be applied on cutblocks that meet the following criteria:

- Dispersed retention is required to achieve the following non-timber management objectives:
 - To develop and maintain forest stand conditions that achieve fire management objectives by reducing the likelihood of crown fire and/or fast-moving high intensity ground fire.
 - Spotted owl WHAs (either Managed Future or Long-Term Owl Habitat type);
 - Stands with high value habitat for other wildlife species that would benefit from a retained overstory;
 - Visually sensitive areas (i.e. VLI polygons with a VQO of Retention, or other visually sensitive area identified during the planning or consultation process);
 - Stands with forest health issues that would benefit from a retained overstory.
- Partial cut harvesting will occur with the retained overstory stems contributing towards regen and free growing obligations, and
- Dispersed retention Residual Basal Area (RBA) will range from 9 to 39 m²/ha.

Where SEDRSS is applied to achieve wildfire management objectives, the block site plan prepared by a qualified person must describe the desired post-harvest stand structure and provide clear objectives for the management of harvesting debris and forest fuels on the site. The block site plan must include identification of and timing for any future stand tending treatments to address wildfire management.

The SEDRSS is presented in Appendix A

3.1.4 Intermediate Cut Stocking Standard

Intermediate cuts are a stand-tending entry to remove merchantable trees prior to a 2nd pass harvest. Following the initial stand-tending entry the stand continues to develop with enhanced quality and/or growth of the remaining trees towards the desired structure, described by the block site plan, to achieve stated objectives. Two potential intermediate cut systems may be utilized to achieve both wildfire management and management of non-timber objectives:

- **Commercial Thinning:** partial cut in immature stands where trees have reached a merchantable size.
- **Single Stem Harvesting:** partial cut to remove pole-sized stems.

For these types of harvesting, the following information must be provided:

- the preferred and acceptable species of trees
- the planned residual basal area or density per hectare

- the species and function of any trees to be left standing to satisfy non-timber resource objectives.

Where intermediate cut harvest methods are used to achieve wildfire management objectives, the block site plan prepared by a qualified person must describe the desired post-harvest stand structure and provide clear objectives for the management of harvesting debris and forest fuels on the site and must include identification of and timing for any future stand tending treatments to address wildfire management.

Intermediate Cut Stocking Standards may only be applied where the management of non-timber values is the primary objective, and/or in areas where other silviculture systems are not practical. Specifically, intermediate cut stocking standards will only be applied on cutblocks that meet the following criteria:

- Dispersed retention is required to achieve the following non-timber management objectives:
 - To develop and maintain forest stand conditions that achieve fire management objectives by reducing the likelihood of crown fire and/or fast-moving high intensity ground fire.
 - Spotted owl WHAs (either Managed Forest or Long-Term Owl Habitat type);
 - Stands with high value habitat for other wildlife species that would benefit from a retained overstory;
 - Visually sensitive areas (i.e. VLI polygons with a VQO of Retention, or other visually sensitive area identified during the planning or consultation process);
 - Stands with forest health issues that would benefit from a retained overstory.
- Terrain stability may be compromised by utilizing another silviculture system;
- Cultural heritage features may be compromised by utilizing another silviculture system;
- Significant windthrow damage would occur by utilizing another silviculture system;
- Harvest activities will not negatively impact site productivity, as determined by a Qualified Resource Professional;

In addition, openings will not be created that are greater than 0.1ha in size, and the residual stand will be substantially representative of the original stand in terms of species composition, health, form, and vigour.

3.2 Specifications of Situations and Circumstances under S.16 (FPPR)

S. 44(1) of the FPPR applies to all FDU's where the holder of the FSP is required to establish a free growing stand.

The applicable stocking standards, regeneration dates and free growing heights referred to in s. 44(1)(a) and (b) of the FPPR are described in Appendix A and are applicable to all FDU's where the holder of the FSP proposes to conduct harvesting operations.

S. 45(1) and (2) of the FPPR will not apply to any of the FDUs within this FSP.

With respect to S.16(4) of the FPPR, which refers to S.44(4) and harvesting timber in the circumstances addressed by S.44(3)(h)(i), the Holder of this FSP will develop site and circumstance specific stocking standards which will be submitted for approval as an FSP Amendment.

3.3 Amendments

In accordance with FRPA section 197(5), the holder of this FSP 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.

4.0 Measures to Prevent the Introduction & Spread of Invasive Plants

Section 17 of the FPPR

For the purposes of section 47 (invasive plants) of the Act, a person who prepares a forest stewardship plan must specify measures in the plan to prevent the introduction or spread of species of plants that are invasive plants under the Invasive Plants Regulation, if the introduction or spread is likely to be the result of the person's forest practices.

FDU	Measures to Prevent the Introduction & Spread of Invasive Plants
Spelkúmtn	<p>In respect of the objective, invasive plant species are those identified in Section 2 of the <i>Invasive Plants Regulation</i>.</p> <p>For the purposes of s. 47 of FRPA: The following measures will be taken by the Holders of the FSP to prevent the introduction or spread of invasive plants if such introduction or spread is likely to be the result of forest practices carried out under this FSP.</p> <ul style="list-style-type: none"> a) Inventory, map and monitor the presence and spread of invasive plant species within cutblocks and roads under permit or obligation by the Licensees within the FDU's identified in the FSP. This will primarily be completed while conducting field related forest management or timber harvesting activities. The Invasive Alien Plant Program (IAPP), <i>Report a Weed</i> application which is a multiple agency database for inventory and reporting of invasive plant location data in British Columbia will be utilized in this regard. b) Record any observed occurrences of invasive plant species and annually report their presence to IAPP / Report a Weed. c) To prevent the establishment or spread of invasive plant species, where the establishment or spread of invasive species can be reasonably expected, the Licensees will re-vegetate, through grass seeding, soils exposed by forest practices, which include soils disturbed during harvesting and/or road building operations (ditchlines, cut slopes, fill slopes) as well as deactivated roads. In the context of this document, the term "reasonably expected" is determined by the presence of invasive plant species in the immediate vicinity of the Licensees' activities and that the outcome of these activities results in conditions suitable for establishment of invasive species (e.g. Disturbed and exposed mineral soil). The seed used to re-vegetate exposed soils will be of grade Canada Common #1 Forage Mixture (or better) as accepted under the Canada Seeds Act (RS 1985, c S-8) and the associated regulations. Re-vegetation of exposed soils will be completed within the growing season immediately following the timing of the activity that results in disturbance or exposure of the soil.

	<ul style="list-style-type: none">d) Prior to conducting forestry activities in areas where invasive plant species have been identified, workers will be educated to their presence and instructed in preventative measures to minimize the potential for spread. These measures will be presented / reviewed during forestry activity preworks. Measures will include, to the best of their abilities, workers checking and removing invasive plants and or seeds from their persons and from equipment employed during forestry operations.e) During primary forest activities movement of soil or ballast / fill materials from a location where invasive species are present is not permittedf) If infestations occur as a result of the Licensees primary forest activities, invasive plant materials (plants and seeds) will be destroyed through control measures and practices that include hand weeding, hand pulling, burning and herbicide treatments.
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5.0 Natural Range Barriers

Section 18 of FPPR

For the purpose of s.48 (natural range barriers) of the Act, a person who prepares a forest stewardship plan must specify measures to mitigate the effect of removing or rendering ineffective natural range barriers.

FDU	Measures
Spelkúmtn	There are no active Rangeland Tenures within the Spelkúmtn FDU. No measures are required.

APPENDIX A - STOCKING STANDARDS

Table 1. A1 - Stocking Standards with Preferred and Acceptable Species

Stocking Standards ID	Biogeoclimatic Information			Preferred Species												Acceptable Species						Stocking			Min. Inter-Tree Distance	Regeneration Delay (yrs)	Late Free Growing (yrs)	Ht. Relative to Comp. (%)	Max. Density			Additional Standards or Comments					
	Biogeoclimatic Zone	Biogeoclimatic Subzone and Variant	Site Series	Preferred Species #1	Preferred Species #1 Height	Preferred Species #2	Preferred Species #2 Height	Preferred Species #3	Preferred Species #3 Height	Preferred Species #4	Preferred Species #4 Height	Preferred Species #5	Preferred Species #5 Height	Preferred Species #6	Preferred Species #6 Height	Acceptable Species #1	Acceptable Species #1 Height	Acceptable Species #2	Acceptable Species #2 Height	Acceptable Species #3	Acceptable Species #3 Height	Acceptable Species #4	Acceptable Species #4 Height	Acceptable Species #5					Acceptable Species #5 Height	Target (P & A)	Minimum (P & A)		Minimum (P)	Maximum (s/ha)	Post Spacing Minimum (s/ha)	Post Spacing Maximum (s/ha)	
CWH ds1 01	Fdc	2.25	-	-	-	-	-	-	-	-	-	-	-	-	Pw	2.50	Cw	1.50	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	PW31, ALL612, ALL623	
CWH ds1 01	Fdc	2.25	Cw	1.50	-	-	-	-	-	-	-	-	-	-	Pw	2.50	Hw	1.00	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	800	1,500	PW31, CW42, HW42, CW71, ALL612, ALL623	
CWH ds1 01	Fdc	2.25	-	-	-	-	-	-	-	-	-	-	-	-	Cw	1.50	Pw	2.50	Hw	1.00	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	PW31, HW42, ALL612, ALL623	
CWH ds1 02	Plc	1.25	Fdc	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	200	200	2.0	3	20	150	10,000	900	1,500	AI1520, ALL612, ALL623	
CWH ds1 03	Fdc	1.50	Plc	1.25	-	-	-	-	-	-	-	-	-	-	Py	1.00	Cw	1.00	-	-	-	-	-	-	-	800	400	400	2.0	3	20	150	10,000	900	1,500	PLC6, PY7, PY18, ALL612, ALL623	
CWH ds1 04	Fdc	2.25	Cw	1.50	-	-	-	-	-	-	-	-	-	-	Pw	2.50	-	-	-	-	-	-	-	-	-	800	400	400	2.0	3	20	150	10,000	900	1,500	CW71, PW31, ALL612, ALL623	
CWH ds1 04	Fdc	2.25	-	-	-	-	-	-	-	-	-	-	-	-	Cw	1.50	Pw	2.50	Hw	1.00	-	-	-	-	-	800	400	400	2.0	3	20	150	10,000	900	1,500	PW31, HW71, ALL612, ALL623	
CWH ds1 05	Fdc	2.25	Sx	1.00	Cw	1.50	-	-	-	-	-	-	-	-	Pw	2.50	Hw	1.00	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	SX13, SX18, CW42, HW42, CW71, PW13, PW31	
CWH ds1 05	Fdc	2.25	Sx	1.00	-	-	-	-	-	-	-	-	-	-	Cw	1.50	Pw	2.50	Hw	1.00	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	SX13, SX18, PW13, PW31, HW42	
CWH ds1 06	Hw	1.00	Fdc	2.25	Cw	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900	500	400	2.0	6	20	150	10,000	900	1,500	CW71, ALL612, ALL623	
CWH ds1 06	Hw	1.00	Fdc	2.25	-	-	-	-	-	-	-	-	-	-	Cw	1.50	-	-	-	-	-	-	-	-	-	900	500	400	2.0	6	20	150	10,000	900	1,500	ALL612, ALL623	
CWH ds1 07	Cw	2.00	Fdc	3.00	-	-	-	-	-	-	-	-	-	-	Bg	2.00	Hw	1.25	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	BG47, ALL612, ALL623	
CWH ds1 08	Cw	2.00	-	-	-	-	-	-	-	-	-	-	-	-	Ss	3.00	Bg	2.00	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	SS35, BG47, ALL612, ALL623	
CWH ds1 09	Cw	2.00	-	-	-	-	-	-	-	-	-	-	-	-	Bg	2.00	-	-	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	CW1, BG1, BG47, ALL612, ALL623	
CWH ds1 11	Plc	1.25	-	-	-	-	-	-	-	-	-	-	-	-	Cw	1.00	-	-	-	-	-	-	-	-	-	400	200	200	2.0	3	20	150	10,000	900	1,500	PLC1, CW1, ALL520	
CWH ds1 12	Cw	1.00	-	-	-	-	-	-	-	-	-	-	-	-	Plc	1.25	-	-	-	-	-	-	-	-	-	800	400	400	2.0	3	20	150	10,000	900	1,500	CW1, PLC7, ALL612, ALL623	
CWH ms1 01	Cw	1.50	Fdc	2.25	Sx	1.00	Hw	1.50	Ba	0.75	-	-	-	-	Yc	1.50	-	-	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	SX13, SX18, HW13, BA10, BA13, ALL612, ALL623	
CWH ms1 01	Cw	1.50	Fdc	2.25	Sx	1.00	-	-	-	-	-	-	-	-	Hw	1.50	Ba	0.75	Yc	1.50	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	SX13, SX18, ALL612, ALL623	
CWH ms1 02	Plc	1.25	Fdc	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	800	400	400	2.0	3	20	150	10,000	900	1,500	AI1520, ALL612, ALL623	
CWH ms1 03	Cw	1.50	Fdc	2.25	Sx	1.00	-	-	-	-	-	-	-	-	Ba	0.75	-	-	-	-	-	-	-	-	-	800	400	400	2.0	3	20	150	10,000	900	1,500	SX13, SX18, BA10	
CWH ms1 04	Cw	2.00	Fdc	3.00	Sx	1.25	Ba	1.00	Hw	2.00	Yc	2.00	-	-	Pw	2.50	-	-	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	SX13, SX18, BA10, BA13, HW10, HW13, YC13, PW31, ALL612, ALL623	
CWH ms1 04	Cw	2.00	Fdc	3.00	Sx	1.25	Ba	1.00	-	-	-	-	-	-	Hw	2.0	Pw	2.5	Yc	2.0	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	YC13, SX18, PW31, ALL612, ALL623	
CWH ms1 05	Cw	1.50	Hw	1.50	Yc	1.50	Ba	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900	500	400	2.0	6	20	150	10,000	900	1,500	YC13, BA10, BA13, ALL612, ALL623	
CWH ms1 05	Cw	1.50	Hw	1.50	Ba	1.00	-	-	-	-	-	-	-	-	Yc	1.50	-	-	-	-	-	-	-	-	-	900	500	400	2.0	6	20	150	10,000	900	1,500	BA10, BA13, ALL612, ALL623	
CWH ms1 06	Cw	2.00	Fdc	3.00	Yc	2.00	Sx	1.25	Ba	1.00	-	-	-	-	Hw	2.00	-	-	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	YC13, SX13, BA10, BA13, ALL612, ALL623	
CWH ms1 06	Cw	2.00	Fdc	3.00	Yc	2.00	Sx	1.25	-	-	-	-	-	-	Ba	1.00	Hw	2.00	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	SX13, YC13, BA10, BA13, ALL612, ALL623	
CWH ms1 07	Ba	1.00	Cw	2.00	Sx	1.25	-	-	-	-	-	-	-	-	Fdc	3.00	-	-	-	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	FDC1, SX10, SX13, ALL612, ALL623
CWH ms1 07	Ba	1.00	Cw	2.00	-	-	-	-	-	-	-	-	-	-	Sx	1.25	Fdc	3.00	-	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	FDC1, SX18, ALL612, ALL623
CWH ms1 08	Cw	2.00	-	-	-	-	-	-	-	-	-	-	-	-	Ba	1.00	Sx	1.25	-	-	-	-	-	-	-	900	500	400	2.0	3	20	150	10,000	900	1,500	CW1, BA1, SX18, ALL612, ALL623	
CWH ms1 10	Plc	1.25	-	-	-	-	-	-	-	-	-	-	-	-	Cw	1.00	-	-	-	-	-	-	-	-	-	400	200	200	2.0	3	20	150	10,000	900	1,500	PLC1, CW1, ALL520	
CWH ms1 11	Cw	1.00	Yc	1.00	-	-	-	-	-	-	-	-	-	-	Pw	2.50	Sx	0.75	-	-	-	-	-	-	-	800	400	400	2.0	3	20	150	10,000	900	1,500	CW1, YC13, PW31, SX1	
ESSF mw 01	Sx	1.00	Ba	0.60	Bl	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1200	700	600	2.0	4	20	125	10,000	900	1,500	BA17, ALL612, ALL623	
ESSF mw 02	Plc	1.25	Fdc	1.00	-	-	-	-	-	-	-	-	-	-	Sx	0.75	-	-	-	-	-	-	-	-	-	1000	500	400	2.0	7	20	125	10,000	900	1,500	FDC9, FDC14, ALL612, ALL623	
ESSF mw 03	Plc	1.25	Fdc	1.00	Sx	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	500	400	2.0	7	20	125	10,000	900	1,500	FDC9, FDC14, ALL612, ALL623	
ESSF mw 04	Plc	1.25	Sx	0.75	Fdc	1.00	-	-	-	-	-	-	-	-	Bl	0.60	-	-	-	-	-	-	-	-	-	1200	700	600	2.0	7	20	125	10,000	900	1,500	FDC9, FDC14, ALL612, ALL623	
ESSF mw 05	Sx	1.00	Bl	0.75	-	-	-	-	-	-	-	-	-	-	Ba	0.60	-	-	-	-	-	-	-	-	-	1200	700	600	2.0	4	20	125	10,000	900	1,500	BA17, ALL612, ALL623	

Stocking Standards ID	Biogeoclimatic Information			Preferred Species												Acceptable Species						Stocking			Min. Inter-Tree Distance	Regeneration Delay (yrs.)	Late Free Growing (yrs.)	Ht. Relative to Comp. (%)	Max. Density			Additional Standards or Comments				
	Biogeoclimatic Zone	Biogeoclimatic Subzone and Variant	Site Series	Preferred Species #1	Preferred Species #1 Height	Preferred Species #2	Preferred Species #2 Height	Preferred Species #3	Preferred Species #3 Height	Preferred Species #4	Preferred Species #4 Height	Preferred Species #5	Preferred Species #5 Height	Preferred Species #6	Preferred Species #6 Height	Acceptable Species #1	Acceptable Species #1 Height	Acceptable Species #2	Acceptable Species #2 Height	Acceptable Species #3	Acceptable Species #3 Height	Acceptable Species #4	Acceptable Species #4 Height	Acceptable Species #5					Acceptable Species #5 Height	Target (P & A)	Minimum (P & A)		Minimum (P)	Maximum (s/ha)	Post Spacing Minimum (s/ha)	Post Spacing Maximum (s/ha)
ESSF	mw	06	Bl	0.75	Sx	1.00	-	-	-	-	-	-	-	-	Ba	0.60	-	-	-	-	-	-	-	-	-	1200	700	600	2.0	4	20	125	10,000	900	1,500	BA17
ESSF	mw	07	Bl	0.60	Sx	0.75	-	-	-	-	-	-	-	-	Ba	0.60	Cw	0.75	-	-	-	-	-	-	-	1000	500	400	2.0	4	20	125	10,000	900	1,500	BA17, CW14, CW32, ALL612, ALL623
ESSF	mw	08	Bl	0.60	Sx	0.75	-	-	-	-	-	-	-	-	Cw	0.75	-	-	-	-	-	-	-	-	-	1000	500	400	2.0	4	20	125	10,000	900	1,500	BL1, SX1, CW14, CW32, ALL612, ALL623
IDF	ww	01	Fdc	1.50	-	-	-	-	-	-	-	-	-	-	Plc	2.00	Py	1.50	Cw	1.50	-	-	-	-	-	600	400	400	2.0	4	20	150	10,000	900	1,500	PY7, PY18, ALL612, ALL623
IDF	ww	02	Plc	1.25	-	-	-	-	-	-	-	-	-	-	Fdc	1.00	-	-	-	-	-	-	-	-	-	400	200	200	2.0	3	20	150	10,000	900	1,500	ALL520, ALL612
IDF	ww	03	Fdc	1.50	-	-	-	-	-	-	-	-	-	-	Plc	2.00	Py	1.50	-	-	-	-	-	-	-	600	400	400	2.0	3	20	150	10,000	900	1,500	PY7, PY18 ALL520
IDF	ww	04	Fdc	1.50	Py	1.50	-	-	-	-	-	-	-	-	Cw	1.50	-	-	-	-	-	-	-	-	-	600	400	400	2.0	4	20	150	10,000	900	1,500	PY18, ALL612, ALL623
IDF	ww	05	Cw	2.00	Fdc	2.00	-	-	-	-	-	-	-	-	Hw	1.50	-	-	-	-	-	-	-	-	-	1000	500	400	2.0	4	20	150	10,000	900	1,500	
IDF	ww	06	Fdc	2.00	Cw	2.00	-	-	-	-	-	-	-	-	Hw	1.50	-	-	-	-	-	-	-	-	-	1000	500	400	2.0	4	20	150	10,000	900	1,500	HW13
IDF	ww	07	Cw	1.50	-	-	-	-	-	-	-	-	-	-	Plc	2.00	-	-	-	-	-	-	-	-	-	1000	500	400	2.0	4	20	150	10,000	900	1,500	CW1, PLC7
MH	mm2	01	Ba	0.60	Hm	1.00	Yc	1.00	Sx	1.00	-	-	-	-	Bl	1.00	-	-	-	-	-	-	-	-	-	900	500	400	2.0	7	20	125	10,000	900	1,500	HW14, HM13, BL13, BL45, BL53, FD14, CW14, ALL623
MH	mm2	02	Hm	0.75	Sx	0.75	Yc	0.75	-	-	-	-	-	-	Ba	0.60	Bl	0.75	-	-	-	-	-	-	-	800	400	400	2.0	4	20	125	10,000	900	1,500	BL45, BL53, ALL623
MH	mm2	03	Ba	0.60	Hm	1.00	Sx	1.00	Yc	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900	500	400	2.0	4	20	125	10,000	900	1,500	ALL623
MH	mm2	04	Ba	0.60	Hm	1.00	Yc	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900	500	400	2.0	7	20	125	10,000	900	1,500	ALL623
MH	mm2	05	Ba	0.60	Sx	1.00	Yc	1.00	-	-	-	-	-	-	Hm	1.00	-	-	-	-	-	-	-	-	-	900	500	400	2.0	4	20	125	10,000	900	1,500	ALL623
MH	mm2	06	Hm	0.75	Yc	0.75	-	-	-	-	-	-	-	-	Ba	0.60	-	-	-	-	-	-	-	-	-	800	400	400	2.0	7	20	125	10,000	900	1,500	HM1, BA1, ALL623
MH	mm2	07	Ba	0.60	Sx	0.75	Yc	0.75	-	-	-	-	-	-	Hm	0.75	-	-	-	-	-	-	-	-	-	900	500	400	2.0	4	20	125	10,000	900	1,500	BA1, SX1, HM1, ALL623
MH	mm2	08	Hm	0.75	Yc	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	200	200	2.0	4	20	125	10,000	900	1,500	HM1, YC1, ALL623, ALL520
MH	mm2	09	Hm	0.75	Yc	0.75	-	-	-	-	-	-	-	-	Sx	0.75	-	-	-	-	-	-	-	-	-	800	400	400	2.0	4	20	125	10,000	900	1,500	HM1, YC1, SX1, ALL623

Table 2. A2 - Wildfire Management Stocking Standards with Preferred and Acceptable Species

Even Aged Management Stocking Standards for use within the Wildland Urban Interface (WUI)

Stocking Standards ID	Biogeoclimatic Information			Preferred Species												Acceptable Species								Stocking			Min. Inter-Tree Distance	Regeneration Delay (yrs)	Late Free Growing (yrs)	Ht. Relative to Comp. (%)	Max. Density			Additional Standards or Comments			
	Biogeoclimatic Zone	Biogeoclimatic Subzone and Variant	Site Series	Preferred Species #1	Preferred Species #1 Height	Preferred Species #2	Preferred Species #2 Height	Preferred Species #3	Preferred Species #3 Height	Preferred Species #4	Preferred Species #4 Height	Preferred Species #5	Preferred Species #5 Height	Preferred Species #6	Preferred Species #6 Height	Acceptable Species #1	Acceptable Species #1 Height	Acceptable Species #2	Acceptable Species #2 Height	Acceptable Species #3	Acceptable Species #3 Height	Acceptable Species #4	Acceptable Species #4 Height	Acceptable Species #5	Acceptable Species #5 Height	Target (P & A)					Minimum (P & A)	Minimum (P)	Maximum (s/ha)		Post Spacing Minimum (s/ha)	Post Spacing Maximum (s/ha)	
CWH	ds1	01	Fdc	2.30	Ep	2.00	-	-	-	-	-	-	-	-	Pw	2.50	Lw	1.25	Py	1.30	Mb	2.00	Act	2.00	600	400	400	2.0	3	20	100	1000	400	800	PW31, ALL612, ALL623		
CWH	ds1	03	Fdc	1.50	Py	1.30	-	-	-	-	-	-	-	-	Ep	2.00	-	-	-	-	-	-	-	-	-	400	300	200	2.0	3	20	100	800	200	600	ALL612, ALL623	
CWH	ds1	04	Fdc	2.30	Pw	2.50	-	-	-	-	-	-	-	-	Ep	2.00	-	-	-	-	-	-	-	-	-	500	400	300	2.0	3	20	100	900	300	700	PW31, ALL612, ALL623	
CWH	ds1	05	Fdc	2.30	Pw	2.50	Ep	2.00	Mb	2.00	-	-	-	-	Lw	1.25	-	-	-	-	-	-	-	-	-	600	400	400	2.0	3	20	100	1000	400	800	PW31, ALL612, ALL623	
CWH	ds1	06	Fdc	2.30	Lw	1.30	Ep	2.00	-	-	-	-	-	-	Mb	2.00	Act	2.00	-	-	-	-	-	-	-	600	400	400	2.0	3	20	100	1000	400	800	ALL612, ALL623	
IDF	ww	01	Fdc	1.50	Py	1.50	Ep	2.00	Lw	1.50	-	-	-	-	Mb	2.00	-	-	-	-	-	-	-	-	-	400	300	200	2.0	3	20	100	600	200	600	ALL612, ALL623	
IDF	ww	03	Fdc	1.00	Py	1.50	-	-	-	-	-	-	-	-	Ep	2.00	-	-	-	-	-	-	-	-	-	-	400	200	200	2.0	3	20	100	600	200	600	ALL612, ALL623
IDF	ww	04	Fdc	1.50	Mb	2.00	Py	1.50	-	-	-	-	-	-	Ep	2.00	Lw	1.50	-	-	-	-	-	-	-	-	400	300	200	2.0	3	20	100	800	300	600	ALL612, ALL623
IDF	ww	05	Fdc	2.00	Mb	2.00	Ep	2.00	-	-	-	-	-	-	Py	1.50	Lw	1.50	Act	2.00	-	-	-	-	-	-	600	400	200	2.0	3	20	100	1000	300	800	ALL612, ALL623
IDF	ww	06	Fdc	2.00	Mb	2.00	Ep	2.00	-	-	-	-	-	-	Act	2.00	-	-	-	-	-	-	-	-	-	-	600	400	200	2.0	3	20	100	1000	300	800	ALL612, ALL623

Rational for wildfire management stocking standards:

- The objective of the wildfire management stocking standards is to reduce the likelihood of crown fire initiation through creation of a stand with reduced canopy bulk density and increased fire resistance.
- Height over brush percentages have been reduced to allow broadleaf species to occur on site which would reduce fire behavior.
- The block site plan will specify the timing for specific prescribed stand tending treatments that will be required to be completed to promote increased fire resistance. These treatments will include management of harvesting and stand treatment slash, understory vegetation management, crown lifting and stem density reduction treatments.
- Trees which contribute to maximum density calculations are dominant and co-dominant trees and must be at least 50% the free growing height of the tallest primary species.

Table 3. A3 - Footnote descriptions / BEC and Species Notes

Conifer Tree Species	Footnote #	Footnote	Footnote #	Footnote
	1	Suitable on elevated microsites	42	suitable on sites with a fresh soil moisture regimes
Ba means amabilis fir;	2	footnote retired	43	footnote retired
Bg means grand fir;	3	suitable on coarse-textured soils	44	suitable in areas with stronger maritime influence
Bl means subalpine fir;	4	suitable on medium-textured soils	45	suitable in areas with stronger continental influence
Bp means noble fir;	5	footnote retired	46	restricted to area north of the Dean Channel
Cw means western red cedar;	6	suitable on nutrient-very-poor sites	47	risk of balsam wooly adelgid – applies to all Abies species in subzones within the regulated quarantine area (http://www.al.gov.bc.ca/cropprot/balsamwa.htm)
Fd means Douglas-fir;	7	suitable on nutrient-medium sites	48	risk of browsing by deer
Hm means mountain hemlock;	8	suitable on steep slopes	49	retired November 2010
Hw means western hemlock;	9	suitable on warm aspects	50	restricted to sites where the species occurs as a major species in a pre-harvest natural stand
“Lt” means tamarack;	10	suitable on cool aspects	51	footnote retired
Lw means western larch;	11	suitable on crest slope positions	52	restricted to sheltered microsites with deep soil
“Pa” means whitebark pine;	12	suitable on cold air drainage sites	53	minor component
Pl means lodgepole pine;	13	suitable at upper elevations	54	footnote retired
Pw means white pine;	14	suitable at lower elevations	55	footnote retired
Py means ponderosa pine;	15	suitable in the northern portion of biogeoclimatic unit		
“Sb” means black spruce;	16	suitable in the southern portion of biogeoclimatic unit	#	Broadleaf Management Constraints
“Se” means Engelmann spruce;	17	suitable in the western portion of biogeoclimatic unit	a	productive, reliable, and feasible regeneration option
Ss means Sitka spruce;	18	suitable in the eastern portion of biogeoclimatic unit	b	limited in productivity, reliability and/or feasibility
“Sw” means white spruce;	19	footnote retired		
Sx means hybrid spruce or interior spruce;	20	footnote retired	#	Localized Footnotes
Sxs means hybrid Sitka spruce;	21	footnote retired	56	footnote retired
“Sxw” means hybrid white spruce;	22	suitable in southern Gardner Canal-Kitlope area	57	retired November 2010 see footnote 31
Yc means yellow cedar.	23	footnote retired	58	Southern Interior Forest Region - Fd limited to a max 50% of preferred and acceptable well-spaced stems in the IDfMw and all subzones of the ICH (except the ICHxw) due to root rot in areas where stump removal has not been performed. See BC Journal of Ecosystems and Management 9(2): 60-65.
Broadleaf Tree Species	24	suitable in wetter portion of biogeoclimatic unit	59	Prince George region - max 1,400 total sph of aspen and cottonwood.
“Acb” means balsam poplar;	25	footnote retired		Treat as 'ghost' trees in surveys.
“Act” means black cottonwood;	26	suitable minor species on salal-dominated sites	60	footnote retired
“At” means trembling aspen;	27	partial canopy cover required for successful establishment	61	footnote retired
“Dr” means red alder;	28	limited by moisture deficit	62	retired November 2010 see footnote 47
“Ep” means common paper birch;	29	risk of heavy browsing by moose	63	footnote retired
“Mb” means bigleaf maple;	30	retired November 2010	66	Mackenzie forest district only
“Qg” means garry oak;	31	must use of blister rust resistant stock See BC Journal of Ecosystems and Management 10(1): 97-100.	67	footnote retired
“Ra” means arbutus;	32	limited by growing-season frosts	68	footnote retired
“Biogeoclimatic unit” or “BGC classification” means the zone, subzone, variant and site series described in the most recent field guide published by the Ministry of Forests for the identification and interpretation of ecosystems, as applicable to a harvested area.	33	footnote retired and replaced with footnote 'a'	69	suitable at upper elevations of the BEC unit only when used in the southern portion of the BEC unit.
	34	risk of snow damage	70	footnote retired
	35	use of resistant stock mitigates risk of spruce weevil damage. Use stock with the highest resistance rating for your area. See Ss Weevil Decision Tool (http://www.for.gov.bc.ca/hre/forgen/projects/spruceweevil) and BC Journal of Ecosystems and Management 7(3): 45-49.	71	suitable on sites where spp is >35% of the pre-harvest stand
			#	Other Footnotes
			520	Site series not recommended for logging
“MIN or “Min” means minimum.	36	footnote retired	612	The MITD can be reduced to 1.5 meters for any site series and site condition where productive and plantable spots are limited to <400 plantable spots / ha. These include colluvial, hygric / sub-hydric sites, sites where stump avoidance strategies are employed to manage root rot and sites where a clumpy distribution of stems is a desired characteristic to meet wildlife or other resource value management objectives.
	37, 38, 39	footnotes retired	613	Acceptable only in SW portion of the district
	40	risk of redheart damage in areas subject to cold winter outflow air	614	Acceptable only in NE portion of the district
	41	limited by poorly drained soils	623	The crop tree height to brush ratio in a fireweed complex can be lowered to 100% for Fdc and Pl and 80% for other species. Acceptable conifer performance will be verified by meeting height to diameter ratio at ground level of less than or equal to 50 for Fdc and Pl, and less than or equal to 40 for other species

Table 4. A4 – Single Entry Dispersed Retention Stocking Standards

BEC Zone	Layers	Prof. / Acc. Spp.	MITD	Regen Delay	FG Declaration Delay	Comp. Brush Factor	Min Ht	Damage Criteria
As per FSP Single-Story Stocking Standards	Residual Overstory (Layer 1 ≥ 12.5cm DBH)	As per FSP Single-Story Stocking Standards	N/A	As per FSP Single-Story Stocking Standards	Minimum 2 years	N/A	N/A	As per SEDRSS Damage Criteria for Layer 1
	Understory (Layers 2,3&4 <12.5cm DBH)		From Layer 1= Dripline ¹ Between Layers 2,3&4= 2.0m					As per SEDRSS Damage Criteria for Layers 2,3&4

¹The dripline is defined as “the vertical boundary of the outside of the outer live foliage of the overstory tree”. An understory tree is considered outside the dripline if “the main stem pith of the understory stem is outside of the dripline as defined above”. Overstory stems (regardless if counted as a crop tree) inside and outside of survey plots are used to determine the dripline.

The SU is found to have met its Regen Obligation or Free Growing Obligation if the following criteria in the following Tables have been met. The tables reference the Deviation from Potential (DFP) concept of assessing the understory’s performance under various overstory canopy densities. Refer to the Single Entry Dispersed Retention Stocking Standard Framework Implementation Guides for further details.

All stems considered to be crop trees in this methodology must meet or exceed the damage criteria for both Layer 1 stems and Layers 2, 3, and 4 stems (separate damage criteria tables have been developed for each stand structure component). These criteria are found in Appendix following the DFP tables.

**For Old-Growth Sites Managing for Fdc Regeneration
(for use on IDF sites or CWH sites with SI<28 only)**

DFP Threshold Value	Obligation Standard
Average DFP	0.2 or less
Proportion of plots in “stocked” class (below green on DFP table below)	≥ 60% and
Proportion of plots in “partial stocked” class (yellow)	≤ 40% and
Proportion of plots in “open” class (above red on DFP table)	≤ 20%

BA of Overstorey crop trees ≥ 12.5 cm dbh	Understorey density – well spaced sph.								
	0	200	400	600	800	1000	1200	1400	1600
0	1.00	0.76	0.52	0.34	0.22	0.13	0.07	0.03	0.00
1	0.98	0.74	0.51	0.34	0.21	0.13	0.07	0.03	0.00
2	0.96	0.73	0.50	0.33	0.21	0.13	0.07	0.03	0.00
3	0.93	0.71	0.49	0.32	0.20	0.12	0.07	0.03	0.00
4	0.90	0.68	0.47	0.31	0.20	0.12	0.06	0.03	0.00
5	0.86	0.65	0.45	0.30	0.19	0.11	0.06	0.02	0.00
6	0.82	0.62	0.43	0.28	0.18	0.11	0.06	0.02	0.00
7	0.77	0.58	0.40	0.27	0.17	0.10	0.05	0.02	0.00
8	0.72	0.55	0.38	0.25	0.16	0.09	0.05	0.02	0.00
9	0.67	0.51	0.35	0.23	0.15	0.09	0.05	0.02	0.00
10	0.62	0.47	0.32	0.21	0.14	0.08	0.04	0.02	0.00
11	0.57	0.43	0.30	0.20	0.12	0.07	0.04	0.02	0.00
12	0.52	0.39	0.27	0.18	0.11	0.07	0.04	0.01	0.00
13	0.47	0.35	0.24	0.16	0.10	0.06	0.03	0.01	0.00
14	0.42	0.32	0.22	0.15	0.09	0.05	0.03	0.01	0.00
15	0.38	0.28	0.20	0.13	0.08	0.05	0.03	0.01	0.00
16	0.33	0.25	0.17	0.11	0.07	0.04	0.02	0.01	0.00
17	0.29	0.22	0.15	0.10	0.06	0.04	0.02	0.01	0.00
18	0.26	0.19	0.13	0.09	0.06	0.03	0.02	0.01	0.00
19	0.22	0.17	0.12	0.08	0.05	0.03	0.02	0.01	0.00
20	0.19	0.14	0.10	0.07	0.04	0.02	0.01	0.01	0.00
21	0.16	0.12	0.08	0.06	0.04	0.02	0.01	0.00	0.00
22	0.13	0.10	0.07	0.05	0.03	0.02	0.01	0.00	0.00
23	0.11	0.08	0.06	0.04	0.02	0.01	0.01	0.00	0.00
24	0.09	0.07	0.05	0.03	0.02	0.01	0.01	0.00	0.00
25	0.07	0.05	0.04	0.02	0.02	0.01	0.00	0.00	0.00
26	0.05	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00
27	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
28	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00
29	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
30 ₍₁₎	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

For Second Growth Sites Managing for Fdc Regeneration

DFP Threshold Value	Obligation Standard
Average DFP	≤ 0.26
Proportion of plots in “open” class (shaded pink on DFP table)	≤ 25%

OS	Species (may vary per Zone & Site Series)	WS Stems/ha	DFP Table																
			0.0	100.0	200.0	300.0	400.0	500.0	600.0	700.0	800.0	900.0	1000.0	1100.0	1200.0	1300.0	1400.0	1500.0	1600.0
BA m2/ha	WS Stems/plot	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	
0		1.00	0.77	0.59	0.45	0.34	0.26	0.20	0.15	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	
1		0.95	0.72	0.55	0.42	0.33	0.25	0.19	0.15	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	
2	Fdc*, Hw	0.89	0.69	0.52	0.40	0.31	0.24	0.18	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	
3	Cw	0.85	0.65	0.50	0.38	0.29	0.22	0.17	0.13	0.10	0.08	0.06	0.05	0.03	0.03	0.02	0.02	0.01	
4		0.80	0.62	0.47	0.36	0.28	0.21	0.16	0.12	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	
5	*N aspect	0.76	0.58	0.45	0.34	0.26	0.20	0.15	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	
6	no Fdc	0.72	0.55	0.42	0.33	0.25	0.19	0.15	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	
7		0.69	0.53	0.40	0.31	0.24	0.18	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	
8		0.65	0.50	0.38	0.29	0.23	0.17	0.13	0.10	0.08	0.06	0.05	0.03	0.03	0.02	0.02	0.01	0.01	
9		0.62	0.48	0.37	0.28	0.21	0.16	0.13	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	
10		0.59	0.46	0.35	0.27	0.20	0.16	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	
11		0.57	0.43	0.33	0.26	0.20	0.15	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	
12	Hw	0.54	0.42	0.32	0.24	0.19	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	
13	Fdc* & Cw	0.52	0.40	0.30	0.23	0.18	0.14	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	
14	Max	0.50	0.38	0.29	0.22	0.17	0.13	0.10	0.08	0.06	0.05	0.03	0.03	0.02	0.02	0.01	0.01	0.01	
15	200 /ha	0.48	0.37	0.28	0.21	0.16	0.13	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	
16		0.46	0.35	0.27	0.21	0.16	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	
17		0.44	0.34	0.26	0.20	0.15	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	
18	Hw	0.42	0.32	0.25	0.19	0.15	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	
19		0.41	0.31	0.24	0.18	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	
20	Cw Max	0.39	0.30	0.23	0.18	0.14	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	
21	200 /ha	0.38	0.29	0.22	0.17	0.13	0.10	0.08	0.06	0.05	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	
22	(no Fdc)	0.37	0.28	0.22	0.17	0.13	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01	
23		0.36	0.27	0.21	0.16	0.12	0.09	0.07	0.06	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	
24		0.35	0.26	0.20	0.16	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
25		0.34	0.26	0.20	0.15	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
26	Hw	0.33	0.25	0.19	0.15	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
27		0.32	0.24	0.19	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
28	(no Fdc & Cw)	0.31	0.24	0.18	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
29		0.30	0.23	0.18	0.14	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
30		0.29	0.23	0.17	0.13	0.10	0.08	0.06	0.05	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
31		0.29	0.22	0.17	0.13	0.10	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
32		0.28	0.22	0.17	0.13	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
33		0.28	0.21	0.16	0.12	0.09	0.07	0.06	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
34		0.27	0.21	0.16	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
35		0.27	0.20	0.16	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
36		0.26	0.20	0.15	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
37		0.26	0.20	0.15	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
38		0.25	0.19	0.15	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
39		0.25	0.19	0.15	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
40		0.24	0.19	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
41		0.24	0.18	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
42		0.24	0.18	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
43		0.24	0.18	0.14	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
44		0.23	0.18	0.14	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
45		0.23	0.18	0.14	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
46		0.23	0.17	0.13	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
47		0.23	0.17	0.13	0.10	0.08	0.06	0.05	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
48		0.22	0.17	0.13	0.10	0.08	0.06	0.05	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
49		0.22	0.17	0.13	0.10	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
50		0.22	0.17	0.13	0.10	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
51		0.22	0.17	0.13	0.10	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
52		0.22	0.17	0.13	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	
53		0.22	0.17	0.13	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	
54		0.21	0.16	0.13	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	
55		0.21	0.16	0.12	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	
56		0.21	0.16	0.12	0.10	0.07	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	
57		0.21	0.16	0.12	0.09	0.07	0.06	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	
58		0.21	0.16	0.12	0.09	0.07	0.06	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	
59		0.21	0.16	0.12	0.09	0.07	0.06	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	
60		0.21	0.16	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	

For Old Growth Cw/Hw Sites Managing for Cw/Hw Regeneration

DFP Threshold Value		Obligation Standard											
Average DFP		0.32 or less											
Proportion of plots in "open" class (shaded red on DFP table)		≤ 25%											
BA of Overstorey crop trees ≥ 12.5 cm dbh	Understorey density – well spaced sph.												
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400
0	1.00	0.81	0.65	0.51	0.41	0.32	0.25	0.20	0.15	0.12	0.09	0.05	0.03
1	0.98	0.79	0.63	0.50	0.40	0.31	0.25	0.19	0.15	0.12	0.09	0.05	0.03
2	0.95	0.77	0.62	0.49	0.39	0.31	0.24	0.19	0.15	0.11	0.09	0.05	0.02
3	0.93	0.75	0.60	0.48	0.38	0.30	0.23	0.18	0.14	0.11	0.08	0.05	0.02
4	0.90	0.73	0.59	0.46	0.37	0.29	0.23	0.18	0.14	0.11	0.08	0.05	0.02
5	0.88	0.71	0.57	0.45	0.36	0.28	0.22	0.17	0.13	0.10	0.08	0.04	0.02
6	0.85	0.69	0.55	0.44	0.35	0.27	0.22	0.17	0.13	0.10	0.08	0.04	0.02
7	0.83	0.67	0.54	0.43	0.34	0.27	0.21	0.16	0.13	0.10	0.08	0.04	0.02
8	0.80	0.65	0.52	0.41	0.33	0.26	0.20	0.16	0.12	0.10	0.07	0.04	0.02
9	0.78	0.63	0.50	0.40	0.32	0.25	0.20	0.15	0.12	0.09	0.07	0.04	0.02
10	0.76	0.61	0.49	0.39	0.31	0.24	0.19	0.15	0.12	0.09	0.07	0.04	0.02
11	0.73	0.59	0.47	0.38	0.30	0.24	0.18	0.14	0.11	0.09	0.07	0.04	0.02
12	0.71	0.58	0.46	0.36	0.29	0.23	0.18	0.14	0.11	0.08	0.06	0.04	0.02
13	0.69	0.56	0.45	0.35	0.28	0.22	0.17	0.14	0.11	0.08	0.06	0.04	0.02
14	0.67	0.54	0.43	0.34	0.27	0.21	0.17	0.13	0.10	0.08	0.06	0.03	0.02
15	0.64	0.52	0.42	0.33	0.26	0.21	0.16	0.13	0.10	0.08	0.06	0.03	0.02
16	0.62	0.51	0.40	0.32	0.25	0.20	0.16	0.12	0.10	0.07	0.06	0.03	0.02
17	0.60	0.49	0.39	0.31	0.25	0.19	0.15	0.12	0.09	0.07	0.05	0.03	0.02
18	0.58	0.47	0.38	0.30	0.24	0.19	0.15	0.12	0.09	0.07	0.05	0.03	0.02
19	0.56	0.46	0.37	0.29	0.23	0.18	0.14	0.11	0.09	0.07	0.05	0.03	0.01
20	0.55	0.44	0.35	0.28	0.22	0.18	0.14	0.11	0.08	0.06	0.05	0.03	0.01
21	0.53	0.43	0.34	0.27	0.21	0.17	0.13	0.10	0.08	0.06	0.05	0.03	0.01
22	0.51	0.41	0.33	0.26	0.21	0.16	0.13	0.10	0.08	0.06	0.05	0.03	0.01
23	0.49	0.40	0.32	0.25	0.20	0.16	0.12	0.10	0.08	0.06	0.04	0.03	0.01
24	0.48	0.39	0.31	0.24	0.19	0.15	0.12	0.09	0.07	0.06	0.04	0.02	0.01
25	0.46	0.37	0.30	0.24	0.19	0.15	0.12	0.09	0.07	0.05	0.04	0.02	0.01
26	0.44	0.36	0.29	0.23	0.18	0.14	0.11	0.09	0.07	0.05	0.04	0.02	0.01
27	0.43	0.35	0.28	0.22	0.17	0.14	0.11	0.08	0.07	0.05	0.04	0.02	0.01
28	0.41	0.34	0.27	0.21	0.17	0.13	0.10	0.08	0.06	0.05	0.04	0.02	0.01
29	0.40	0.32	0.26	0.21	0.16	0.13	0.10	0.08	0.06	0.05	0.04	0.02	0.01
30	0.39	0.31	0.25	0.20	0.16	0.12	0.10	0.08	0.06	0.05	0.04	0.02	0.01
31	0.37	0.30	0.24	0.19	0.15	0.12	0.09	0.07	0.06	0.04	0.03	0.02	0.01
32	0.36	0.29	0.23	0.19	0.15	0.12	0.09	0.07	0.06	0.04	0.03	0.02	0.01
33	0.35	0.28	0.22	0.18	0.14	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.01
34	0.34	0.27	0.22	0.17	0.14	0.11	0.08	0.07	0.05	0.04	0.03	0.02	0.01
35	0.32	0.26	0.21	0.17	0.13	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.01
36	0.31	0.25	0.20	0.16	0.13	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.01
37	0.30	0.24	0.19	0.15	0.12	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.01
38	0.29	0.24	0.19	0.15	0.12	0.09	0.07	0.06	0.04	0.03	0.03	0.01	0.01
39	0.28	0.23	0.18	0.14	0.11	0.09	0.07	0.06	0.04	0.03	0.03	0.01	0.01
40	0.27	0.22	0.17	0.14	0.11	0.09	0.07	0.05	0.04	0.03	0.02	0.01	0.01

Single Entry Dispersed Retention Damage Criteria

FG DAMAGE CRITERIA FOR SINGLE ENTRY DISPERSED RETENTION STOCKING STANDARD (SEDRSS) MANAGED STANDS IN COASTAL B.C.

Note: this table overrides all other damage criteria for SEDRSS managed stands

TABLE A- Layer 1 - ≥ 12.5 cm DBH. SEDRSS damage criteria

Location of Damage	Type of Damage	Tree being assessed is UNACCEPTABLE if:		Possible damage agents & codes	Comments																											
		Hw, Ba, Bg, Bl, Cy, Fdc, Ss, Pw, Pl	Cw																													
Stem	Wound	<ul style="list-style-type: none"> Wound girdles $>33\%$ stem circumference, or One wound >400 cm² on stem, or Wound on major root within 1 m of stem, or Tree has gouge in stem. 	<ul style="list-style-type: none"> No criteria 	fire NB, windthrow NW, sunscald NZ, logging TL, mechanical TT.	A wound is defined as an injury in which the cambium is dead (e.g., sunscald) or completely removed from the tree exposing the sapwood. Measure the wound across the widest point of the exposed sapwood (or dead cambium when the tree is damaged by sunscald). Healed over wounds (=scars) are acceptable.																											
Stem	Decay	<ul style="list-style-type: none"> Any pathological indicator(s) are present. This may include conk, blind conk, frost crack, or rotten branches. 	<ul style="list-style-type: none"> No criteria 	various decay fungi DD.																												
Stem	Bark Mining	<ul style="list-style-type: none"> Any of the following signs are visible: pitch tubes, boring dust, exit holes on bark surface, galleries under the bark. 	<ul style="list-style-type: none"> No criteria 	Douglas-fir beetle IBD, Ips pini IBI, Pityogenes & Pityophthorus IBP	Note: pitch tubes can be associated with trees that have successfully repelled bark beetles, bark must be removed above pitch tube to confirm successful attack (successful galleries will be filled with frass and not pitch, contain adult beetles and/or larval galleries). Stressed trees are susceptible to secondary bark and twig beetles.																											
Stem	Deformation (including crook, fork and dead or broken top)	<ul style="list-style-type: none"> A crook displaces the portion of the stem above the defect by $>50\%$ from the line of growth formed by the stem below the point of defect in the bottom 2/3rds of the stem only. A fork occurs above stump height in the bottom 2/3rds of the stem only. A dead or broken top extends more than 20% of the stem length or the live crown is removed. 	<ul style="list-style-type: none"> No criteria A dead tree with no live foliage $< 2/3$rds of the stem unable to produce $> 50\%$ merchantable volume. 	frost NG, hail NH, snow NY, drought ND, logging TL, mechanical TT, Dwarf mistletoes (see below).	Note: Field guidance procedures for the estimation of merchantable Cw volume are identified in Appendix 1.																											
Stem	Dwarf Mistletoe Infection	<ul style="list-style-type: none"> Hawksworth rating >3, or severe stem infections (major swelling or deformity) present. 	<ul style="list-style-type: none"> No criteria 	hemlock dwarf mistletoe DMH	The Hawksworth rating system is described in the FPC Dwarf Mistletoe Management Guidebook (or refer to Appendix AA of this document) For SEDRSS, this rating system will only apply to the tree/plot assessment level, and not at the stand level.																											
Foliage	Defoliation	<p>For defoliating insects:</p> <ul style="list-style-type: none"> $> 80\%$ of foliage has been removed, lost or damaged due to insect defoliation. <p>For foliar diseases:</p> <ul style="list-style-type: none"> $> 50\%$ of foliage has been removed, lost or damaged 	<ul style="list-style-type: none"> No criteria 	defoliators ID, foliage diseases DF																												
Foliage	Live Crown Vigour	<ul style="list-style-type: none"> Stems < 17.5 cm dbh - $< 30\%$ live crown due to poor vigour. Stems ≥ 17.5 cm dbh - $< 20\%$ live crown due to poor vigour. 	<ul style="list-style-type: none"> A dead tree with no live foliage 		Percent live crown is the length of continuous green foliage on a tree expressed as a percentage of its total height.																											
Roots	Root Disease	<ul style="list-style-type: none"> Sign(s) or definitive combinations of symptoms of root disease are observed 	<ul style="list-style-type: none"> For Cw, there is no criterion for net down calculation - considered not susceptible or low susceptibility. 	amillaria root disease DRA, laminated root rot DRL, annosus root disease DRN.	Signs are direct evidence of the pathogenic fungus including fruiting bodies, distinctive mycelium or rhizomorphs. Symptoms include foliar thinning or chlorosis, pronounced resin flow near the root collar, reduced recent leader growth, a distress cone crop, and wood decay or stain. Symptoms alone are not usually sufficient to identify root disease. Both signs and symptoms may be detected from old stumps, root balls, or other post-harvest remains.																											
		<ul style="list-style-type: none"> Infected conifer or stump found in plot. See Table Y for well-spaced tree net down calculation by layer. <p>TABLE Y. Deductions from numbers of acceptable well-spaced uninfected stems for trees infected by root disease in layered stands.</p> <table border="1"> <thead> <tr> <th rowspan="2">Tree layer with infected tree(s) or stumps</th> <th colspan="4">Multiplier used to determine number of acceptable trees to be deducted from:</th> </tr> <tr> <th>Layer 1</th> <th>Layer 2</th> <th>Layer 3</th> <th>Layer 4</th> </tr> </thead> <tbody> <tr> <td>Layer 1</td> <td>Deduct BA of infected layer 1 from Crop BA</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Layer 2</td> <td></td> <td>2</td> <td>2</td> <td>3</td> </tr> <tr> <td>Layer 3</td> <td></td> <td></td> <td>2</td> <td>2</td> </tr> <tr> <td>Layer 4</td> <td></td> <td></td> <td></td> <td>2</td> </tr> </tbody> </table>	Tree layer with infected tree(s) or stumps	Multiplier used to determine number of acceptable trees to be deducted from:				Layer 1	Layer 2	Layer 3	Layer 4	Layer 1	Deduct BA of infected layer 1 from Crop BA	2	3	4	Layer 2		2	2	3	Layer 3			2	2	Layer 4				2	<ul style="list-style-type: none"> For Cw, there is no criterion for net down calculation - considered not susceptible or low susceptibility.
Tree layer with infected tree(s) or stumps	Multiplier used to determine number of acceptable trees to be deducted from:																															
	Layer 1	Layer 2	Layer 3	Layer 4																												
Layer 1	Deduct BA of infected layer 1 from Crop BA	2	3	4																												
Layer 2		2	2	3																												
Layer 3			2	2																												
Layer 4				2																												

TABLE B - Layers 2, 3 & 4 - < 12.5 cm DBH. SEDRSS damage criteria

Location of Damage	Type of Damage	Tree being assessed is UNACCEPTABLE if:	Host Species	Possible damage agents & codes	Comments
Stem	Wound	<ul style="list-style-type: none"> Wound girdles >25% stem circumference, or One wound >10% the length of stem 	All	fire NB, windthrow NW, sunscald NZ, logging TL, mechanical TT.	A wound is defined as an injury in which the cambium is dead (e.g., sunscald) or completely removed from the tree exposing the sapwood. Measure the wound across the widest point of the exposed sapwood (or dead cambium when the tree is damaged by sunscald). Healed over wounds (=scars) are acceptable.
Stem	Decay	<ul style="list-style-type: none"> Any pathological indicator(s) are present. This may include conk, blind conk, frost crack, or rotten branches. 	All	various decay fungi DD.	
Stem	Bark Mining	<ul style="list-style-type: none"> Any of the following signs are visible: pitch tubes, boring dust, exit holes on bark surface, galleries under the bark. 	All	Douglas-fir beetle IBD, Ips pini IBI, Pityogenes & Pityophthorus IBP	Note: pitch tubes can be associated with trees that have successfully repelled bark beetles, bark must be removed above pitch tube to confirm successful attack (successful galleries will be filled with frass and not pitch, contain adult beetles and/or larval galleries). Stressed trees are susceptible to secondary bark and twig beetles.
Stem	Deformation (including crook, fork and dead or broken top)	<ul style="list-style-type: none"> The pith is horizontally displaced more than 30 cm from the point of defect and originates above 30 cm from the point of germination 	All	defoliators ID, white pine (spruce) weevil IWS, lodgepole pine terminal weevil IWP,	
		<ul style="list-style-type: none"> The tree leader has been killed three or more times in the last 5 years (weevil only) 	Ss	cattle AC, deer AD, elk AE, moose AM, frost NG, hail NH,	This criterion applies only for terminal weevil damage.
		<ul style="list-style-type: none"> The tree has two or more leaders with no dominance expressed after five years growth and the fork originates above 30 cm from the point of germination. The tree has a dead or broken top at a point that is > 3cm in diameter. The tree has a flat top (umbrella like) form and no distinct leader. 	All	snow NY, drought ND, logging TL, mechanical TT, Dwarf mistletoes (see below).	Leader dominance occurs when the tallest leader is at least 5 cm taller than the second tallest leader. See Appendix AA on Damage Types.
Stem	Lean and Sweep	<ul style="list-style-type: none"> The tree leans >30° from the vertical with or without growth correction. 	All	Flooding NF, snow NY, slides NS, wind NW, mechanical TM	
Stem	Infection (includes cankers and galls)	<ul style="list-style-type: none"> Any infection occurs on the stem. 	All	white pine blister rust DSB, atropellis canker DSA, Dwarf mistletoes (see below).	Note: Wounds caused by rodent flooding around rust cankers should have stem rust recorded as the causal agent.
Branch	Infection (cankers)	<ul style="list-style-type: none"> An infection occurs on a live branch less than 60 cm from the stem. 	Pw, Pl, Py	white pine blister rust DSB, comandra blister rust DSC, stalactiform blister rust DSS.	
		<ul style="list-style-type: none"> A Fdc bacterial canker infection occurs on a Fdc stem that affects >25% of stem circumference. 	Fdc	Fdc bacterial canker DS	
Branch	Galls	<ul style="list-style-type: none"> A gall rust infection occurs on a live branch less than 5 cm from the stem. 	Pl, Py	western gall rust DSG.	
Foliage	Defoliation	<ul style="list-style-type: none"> >60% tree foliage has been removed by hemlock looper 	Hw	Hemlock looper IDL	
		<ul style="list-style-type: none"> > 80% of foliage has been removed, lost or damaged due to insect defoliation. 	All other	defoliators ID	
		<ul style="list-style-type: none"> > 50% of foliage has been removed, lost or damaged due to foliar disease. 	All	foliage diseases DF	
Foliage	Live Crown Vigour	<ul style="list-style-type: none"> <30% live crown present due to poor vigour. 			Percent live crown is the length of continuous green foliage on a tree expressed as a percentage of its total height.
Stem or Branch	Adelgid Gouting	<ul style="list-style-type: none"> Any adelgid gouting occurs on a stem or branch. 	Ba, Bg, Bl	balsam woolly adelgid IAB.	Gouting is defined as excessive swelling on a branch or shoot caused by balsam woolly adelgid, and is often accompanied by misshapen needles and buds. It is most common on branch tips and at nodes near the ends of branches. Consult a recent distribution map to identify the geographic extent of this pest.
Stem or Branch	Dwarf Mistletoe Infection	<ul style="list-style-type: none"> Any infection occurs on the stem or a live branch, or A susceptible tree is located within 10 m of the bole of a higher layer tree that is infected with dwarf mistletoe. 	Hw	hemlock dwarf mistletoe DMH	Note: To confirm infection, the surveyor must observe mistletoe aerial shoots or basal cups on regeneration or on live or dead fallen brooms.

Roots	Root Disease	<ul style="list-style-type: none"> Sign(s) or definitive combinations of symptoms of root disease are observed 	All	armillaria root disease DRA, laminated root rot DRL, annosus root disease DRN.	Signs are direct evidence of the pathogenic fungus including fruiting bodies, distinctive mycelium or rhizomorphs. Symptoms include foliar thinning or chlorosis, pronounced resin flow near the root collar, reduced recent leader growth, a distress cone crop, and wood decay or stain. Symptoms alone are not usually sufficient to identify root disease. Both signs and symptoms may be detected from old stumps, root balls, or other post-harvest remains.
		<ul style="list-style-type: none"> Infected conifer or stump found in plot. See Table Y for well-spaced tree net down calculation by layer. 	All	armillaria root disease DRA.	<p>Example: How to apply net down for root disease.</p> <p>If root disease-infected trees are found in the plot:</p> <ol style="list-style-type: none"> Determine the number of healthy, well-spaced trees in each layer using the prescribed minimum inter-tree distance (MITD) (e. g., 3 layer 1, 3 layer 3 and 4 layer 4 = 10 healthy, well-spaced) ignoring the M-value; Count the number of infected trees (e. g., 1 layer 1 tree and 1 layer 3 tree); Working from the uppermost layer down, apply the multiplier in Table Y to each lower layer. Subtract the resultant from each layer in turn, for susceptible species only (e. g., if all trees are susceptible, 1 infected layer 1 tree removes 1 healthy, well-spaced layer 1 tree plus 3 layer 3 trees plus 4 layer 4 trees). <p>Note the effects are cumulative, not exclusive and lower layers do not affect higher layers.</p> <p>Calculate the remaining healthy, well-spaced trees once all removals due to infected trees are completed (e. g. 10 – 8 = 2). The result is the maximum number of free growing trees tallied for the plot.</p>
		<ul style="list-style-type: none"> Infected conifer or stump found in plot. See Table Y for well-spaced tree net down calculation by layer. 	Fd, Ba, Bg	laminated root rot DRL.	Note: Bl, Cw, Pl, Pw, and broadleaf species are considered not susceptible for survey purposes only
		<ul style="list-style-type: none"> Infected conifer or stump found in plot. See Table Y for well-spaced tree net down calculation by layer. 	Ba, Hw, Ss	annosus root rot DRN.	Note: Bg, Bl, Cw, Cy, Fd, Hm, Pl, Pw, and broadleaf species are considered not susceptible for survey purposes only.

Table 5. A5 – Intermediate Cut Stocking Standards

The following stocking standards are to be applied in intermediate cut situations:

BEC Zone	Layers	Pref. / Acc. Spp.	MITD	Rege n Delay	FG Delay	Comp . Brush Factor	Min . Ht.	Min. BA Retained	Damage Criteria
As per FSP Single-Story Stocking Standards	Residual Overstory (Layer 1 ≥ 12.5cm DBH)	As per FSP Single-Story Stocking Standards	N/A	N/A	1 Year	N/A	N/A	35m ² /ha	As per SEDRSS Damage Criteria for Layer 1

**APPENDIX B - FSP MAPS, FDU'S AND
DECLARED AREAS**

Table 6. B2 - FSP Maps

Map Number	Grid
Detailed Maps	
1:40,000 scale	
1	Spelkúmtn Forest Development Unit Ecosystems and Forest Cover map
2	Spelkúmtn Forest Development Unit Visual Inventory Map
3	Spelkúmtn Forest Development Unit Wildlife, Water and Old Growth Map
4	Spelkúmtn Forest Development Unit Cultural Features Map
5	Spelkúmtn Forest Development Unit Recreation and Other Tenures Map
6	Spelkúmtn Forest Development Unit Overview and Access Map

Table 7. B3 - Landscape Units and Forest Development Units

Landscape Unit (LU)	Forest Development Unit (FDU)	Map #
Railroad	Spelkúmtn	1-6
Ryan	Spelkúmtn	1-6
Birkenhead	Spelkúmtn	1-6
Soo	Spelkúmtn	1-6
Billygoat	Spelkúmtn	1-6

Table 8. B4 - Declared Areas

Cutblocks:
N/A

FDU	Declaration Date	Cut Block # or TSL #	Gross Area (ha)	Volume m ³	Silv System Harv Method	Map #	Comments	Date removed as declared area

Table 9. B7 - FSP Amendment Log

Amendment Number	Amendment Date	Date approved by the DDM (if required)	FDU (if applicable)	Amendment Details

APPENDIX C - LANDSCAPE UNIT OBJECTIVES

Legal Objectives - Railroad Landscape Unit

Results or strategies for Objective 1

1. Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached Railroad Landscape Unit map dated July 30, 2004 subject to timber harvesting and road construction in accordance with section 2, 3 and 4 below.

2. (1) Where sufficient suitable replacement forest is available in the variants listed below, timber harvesting or road construction may be undertaken in OGMAs that are >10 ha in size for operational reasons up to a cumulative maximum of:

- i) 20 ha in variant CWHds1,
 - ii) 25 ha in variant CWHms1,
 - iii) 15 ha in variant ESSFmw,
 - iv) 15 ha in variant IDFww, and
 - v) 10 ha in variant MHmm2,
- provided that replacement OGMA of equivalent or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA.

(2) The criteria in 2 (1) is to apply to individual OGMAs within the categories below and must ensure that OGMA ecological attributes and spatial distribution are maintained or improved:

- i) OGMAs >10 ha to <50 ha in size where the proposed activity affects the OGMA by <5 ha,
- ii) OGMAs ≥50 ha to <100 ha in size where the proposed activity affects the OGMA by <10ha,
- iii) OGMAs ≥100 ha in size where the proposed activity affects the OGMA by <10%.
- iv) Construction of ≤500m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may permanently deactivate and rehabilitate a temporary road or bridge site within four years after construction.

(3) Where OGMA boundary adjustments and replacement areas are required under section 2 (1) and

(2) they must be documented, mapped and submitted to the satisfaction of the Delegated Decision Maker (DDM) at the end of each calendar year for his/her approval.

(4) The provisions in section 2 (1) and (2) do not apply to the following OGMAs #2, 3, 4, 8, 14, 28, 37, 41, 45, 46, 48, 64, 76.

3. Permissible Activities:

(1) Timber harvest may occur to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMAs. Salvage within OGMAs will be done in a manner that retains as many old growth forest attributes as possible.

(2) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by <0.5 ha.

(3) Intrusions, other than those specified, that affect an OGMA by less than 0.5 hectare in total.

(4) Where OGMA replacement forest is required as a result of activities under 3 (1) or (2), it must be of equivalent or better quality and quantity and be identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing

OGMA; such that OGMA ecological attributes and spatial distribution are maintained or improved. OGMA replacement areas must be documented mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.

4. Permissible Activities for Safety Purposes:

(1) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.

(2) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value wildlife trees) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements.

Results or strategies for Objective 2

Maintain stand level structural diversity by retaining wildlife tree patches (WTP). Cutblocks for which harvesting has been completed by each licensee by tenure will retain adequate amounts of wildlife tree patches to ensure that over each 3 year period, commencing on the date the objectives are established, the target percentage as noted in Table A is achieved. In addition:

(1) WTPs must be well distributed across the BEC subzone and located within or immediately adjacent to a cutblock.

(2) Each cutblock >10 ha in size must have a minimum of 2% wildlife tree retention, except in the ESSF mw and MH mm subzone.

(3) No timber harvesting, including single tree selection, is to occur within WTPs for at least one rotation, except as noted in (4) below.

(4) Salvage of windthrown timber and harvesting of remaining standing stems is only permitted within WTPs where catastrophic windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. Where salvage/harvesting is planned and authorized, replacement WTP of equivalent or better quality and quantity must be identified immediately to achieve the retention target.

(5) WTPs must include, if present, remnant old growth patches and live or dead veteran trees (excluding danger trees).

(6) WTPs must include representative larger trees for the stand and any moderate to high value wildlife trees (excluding danger trees).

(7) Where differences exist between mapped and actual BEC subzones, subzones will be confirmed by site plan information.

Table A. Wildlife Tree Retention by BEC subzone in the Railroad Landscape Unit.

BEC Subzone	Wildlife Tree Retention %
CWH ds (Coastal Western Hemlock, dry subarctic)	8
CWH ms (Coastal Western Hemlock, moist subarctic)	6
ESSF mw (Engelmann Spruce Subalpine Fir moist warm subzone)	0
IDF ww (Interior Douglas Fir, wet warm subzone)	8
MH mm (Mountain Hemlock, moist maritime)	0

Legal Objectives - Ryan Landscape Unit

Results or strategies for Objective 1

1. Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached Ryan Landscape Unit map dated July 30, 2004 subject to timber harvesting and road construction in accordance with section 2, 3 and 4 below.

2. (1) Where sufficient suitable replacement forest is available in the variants listed below, timber harvesting or road construction may be undertaken in OGMAs that are >10 ha in size for operational reasons up to a cumulative maximum of:

i) 5 ha in variant CWHds1,

ii) 25 ha in variant CWHms1, and

iii) 40 ha in variant MHmm2,

provided that replacement OGMA of equivalent or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA.

(2) The criteria in 2 (1) is to apply to individual OGMAs within the categories below and must ensure that OGMA ecological attributes and spatial distribution are maintained or improved:

i) OGMAs >10 ha to <50 ha in size where the proposed activity affects the OGMA by <5 ha,

ii) OGMAs ≥50 ha to <100 ha in size where the proposed activity affects the OGMA by <10ha,

iii) OGMAs ≥100 ha in size where the proposed activity affects the OGMA by <10%.

iv) Construction of ≤500m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may permanently deactivate and rehabilitate a temporary road or bridge site within four years after construction.

(3) Where OGMA boundary adjustments and replacement areas are required under section 2 (1) and (2) they must be documented, mapped and submitted to the satisfaction of the Delegated Decision Maker (DDM) at the end of each calendar year for his/her approval.

(4) The provisions in section 2 (1) and (2) do not apply to the following OGMAs #12, 14, 53, 87, 144, 154.

3. Permissible Activities:

(1) Timber harvest may occur to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMAs. Salvage within OGMAs will be done in a manner that retains as many old growth forest attributes as possible.

(2) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by <0.5 ha.

(3) Intrusions, other than those specified, that affect an OGMA by less than 0.5 hectare in total.

(4) Where OGMA replacement forest is required as a result of activities under 3 (1) or (2), it must be of equivalent or better quality and quantity and be identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA; such that OGMA ecological attributes and spatial distribution are maintained or improved. OGMA replacement areas must be documented, mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.

4. Permissible Activities for Safety Purposes:

- (1) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.
- (2) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value wildlife trees) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements.

Results or strategies for Objective 2

Maintain stand level structural diversity by retaining wildlife tree patches (WTP). Cutblocks for which harvesting has been completed by each licensee by tenure will retain adequate amounts of wildlife tree patches to ensure that over each 3 year period, commencing on the date the objectives are established, the target percentage as noted in Table A is achieved. In addition:

- (1) WTPs must be well distributed across the BEC subzone and located within or immediately adjacent to a cutblock.
- (2) Each cutblock >10 ha in size must have a minimum of 2% wildlife tree retention, except in the MHmm subzone.
- (3) No timber harvesting, including single tree selection, is to occur within WTPs for at least one rotation, except as noted in (4) below.
- (4) Salvage of windthrown timber and harvesting of remaining standing stems is only permitted within WTPs where catastrophic windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. Where salvage/harvesting is planned and authorized, replacement WTP of equivalent or better quality and quantity must be identified immediately to achieve the retention target.
- (5) WTPs must include, if present, remnant old growth patches and live or dead veteran trees (excluding danger trees).
- (6) WTPs must include representative larger trees for the stand and any moderate to high value wildlife trees (excluding danger trees).
- (7) Where differences exist between mapped and actual BEC subzones, subzones will be confirmed by site plan information.

Table A. Wildlife Tree Retention by BEC subzone in the Ryan Landscape Unit.

BEC Subzone	Wildlife Tree retention %
CWH ds (Coastal Western Hemlock dry maritime)	10
CWH ms (Coastal Western Hemlock, moist maritime)	8
MH mm (Mountain Hemlock, moist maritime)	0

Legal Objectives - Birkenhead Landscape Unit

Results or strategies for Objective 1

1. Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached Birkenhead Landscape Unit map dated March 21, 2004 subject to timber harvesting and road construction in accordance with section 2, 3 and 4 below.

2. (1) Where sufficient suitable replacement forest is available in the variants listed below, timber harvesting or road construction (unrelated to ecosystem restoration activities) may be undertaken in OGMAs that are >10 ha in size for operational reasons up to a cumulative maximum of:

- i) 15 ha in variant CWHds1,
- ii) 30 ha in variant CWHms1,
- iii) 5 ha in variant IDFww,
- iv) 40 ha in subzone ESSFmw, and
- v) 5 ha in variant MHmm2

provided that replacement OGMA of equivalent or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA.

(2) The criteria in 2 (1) is to apply to individual OGMAs within the categories below and must ensure that OGMA ecological attributes and spatial distribution are maintained or improved:

- i) OGMAs >10 ha to <50 ha in size where the proposed activity affects the OGMA by <5 ha,
- ii) OGMAs ≥50 ha to <100 ha in size where the proposed activity affects the OGMA by <10ha,
- iii) OGMAs ≥100 ha in size where the proposed activity affects the OGMA by <10%.
- iv) Construction of ≤500m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may permanently deactivate and rehabilitate a temporary road or bridge site within four years after construction.

(3) Where OGMA boundary adjustments and replacement areas are required under section 2 (1) and (2) they must be documented, mapped and submitted to the satisfaction of the Delegated Decision Maker (DDM) at the end of each calendar year for his/her approval.

(4) The provisions in section 2 (1) and (2) do not apply to the following OGMAs #8, 14, 24, 52, 70, 74, 95, 101.

3. Permissible Activities:

(1) Timber harvest may occur to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMAs. Salvage within OGMAs will be done in a manner that retains as many old growth forest attributes as possible.

(2) Timber harvesting for ecosystem restoration purposes within fire dominated areas in up to 25% of OGMAs in the IDFww subzone and 25% of OGMAs in the CWHds1 variant. Proposed treatments must adhere to the Strategies and Table B below, and must be incorporated into an approved operational plan (FDP or equivalent) that specifically addresses ecosystem restoration goals. Ecosystem restoration activities must be documented mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.

(3) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by <0.5 ha.

(4) Intrusions, other than those specified, that affect an OGMA by less than 0.5 hectare in total.

(5) Where OGMA replacement forest is required as a result of activities under 3 (1) or (3), it must be of equivalent or better quality and quantity and be identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA; such that OGMA ecological attributes and spatial distribution are maintained or improved. OGMA replacement areas must be documented, mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.

4. Permissible Activities for Safety Purposes:

(1) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.

(2) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value wildlife trees) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements.

Results or strategies for Objective 2

Maintain stand level structural diversity by retaining wildlife tree patches (WTP). Cutblocks for which harvesting has been completed by each licensee by tenure will retain adequate amounts of wildlife tree patches to ensure that over each 3 year period, commencing on the date the objectives are established, the target percentage as noted in Table A is achieved. In addition:

(1) WTPs must be well distributed across the BEC subzone and located within or immediately adjacent to a cutblock.

(2) Each cutblock >10 ha in size must have a minimum of 2% wildlife tree retention, except in the ESSFmw subzone.

(3) No timber harvesting, including single tree selection, is to occur within WTPs for at least one rotation, except as noted in (4) below.

(4) Salvage of windthrown timber and harvesting of remaining standing stems is only permitted within WTPs where catastrophic windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. Where salvage/harvesting is planned and authorized, replacement WTP of equivalent or better quality and quantity must be identified immediately to achieve the retention target.

(5) WTPs must include, if present, remnant old growth patches and live or dead veteran trees (excluding danger trees).

(6) WTPs must include representative larger trees for the stand and any moderate to high value wildlife trees (excluding danger trees).

(7) Where differences exist between mapped and actual BEC subzones, subzones will be confirmed by site plan information.

Table A. Wildlife Tree Retention by BEC subzone in the Birkenhead Landscape Unit.

BEC Subzone	% Wildlife Tree Retention
CWH ds (Coastal Western Hemlock, dry maritime)	4
CWH ms (Coastal Western Hemlock, moist maritime)	3
ESSF mw (Engelmann Spruce Subalpine Fir moist warm)	0
IDF ww (Interior Douglas Fir, wet warm)	5
MH mm (Mountain Hemlock, moist maritime)	2

Ecosystem Restoration Strategies:

The purpose of restoration activities in OGMAs, within the limits provided, is to improve or maximize biodiversity values and/or ecosystem health values in areas where there is a high to extreme risk of natural disturbance. Where ecosystem restoration is proposed and carried out, it must address the following strategies:

1. Where ecosystem restoration provisions within OGMAs are proposed in an FSP, the FSP must outline the highest risk/highest priority transition forests requiring treatment. Ecosystem restoration treatment will be permitted in up to 25% of the OGMA target area, within specified site series in the IDFww and CWHds1 variants (see Table B).
2. Restoration activities within OGMAs must address how old growth structure will be developed and/or maintained through management intervention over time. Accepted treatments include: partial cut timber harvesting, spacing, thinning and prescribed burning. Note: Open forest (<76 stems/ha in IDF, and <170 stems/ha in CWH) or grassland communities will not meet OGMA suitability criteria. Treatments to below these thresholds can occur outside OGMAs; they can and do contribute to natural ecosystem diversity but aren't considered a forested ecosystem for OGMA purposes.
3. Where other resource objectives have been set (e.g. Ungulate Winter Range, Spotted Owl SRMZ, Identified Wildlife – Wildlife Habitat Areas), ecosystem restoration will only be permitted where compatible with those objectives. In addition, restoration plans and treatments must be compatible with and incorporate the habitat requirements of other red and blue-listed species or regionally important species.
4. Restoration prescriptions will vary from site to site, but will maintain the oldest and/or largest trees for the site and high value wildlife trees (any high value wildlife trees that are determined to be danger trees should be left in no work zone areas). Partial harvest will be limited to removal of excess immature and understory trees or any larger trees in excess of the target stocking standard specified in Table B.
5. Partial-cut harvesting will be subject to current timber harvesting and silviculture practices, except normal stocking standards and green-up height obligations will not apply (see Table B for modified stocking standards).
6. BEC subzones, variants and site series for purposes of Table B will be confirmed by site plan or on the ground information.
7. Achieving restoration targets will be a direct function of budget and staffing resources available to undertake treatment activities.
8. Once forest stands within OGMAs have received initial restoration treatment, they should become components of a long term cycle of spacing and/or prescribed burning and future partial-cut harvesting that will maximize biodiversity value and ecosystem health. All treatments subsequent to meeting modified stocking standards would be considered incremental, and would not be considered a licensee responsibility unless by mutual agreement. Special and non-governmental funds can potentially be accessed to finance these incremental treatments.
9. All roads and trails required for restoration treatment must be temporary, and rehabilitated promptly (i.e. made non-drivable) after completion of harvest operations (except roads required for permanent access beyond the OGMA).
10. In most cases a partial-cut harvest can meet target stocking initially, but unless further treatments are undertaken, stocking targets will be exceeded again after a short time. Subsequent (incremental) prescribed burns will normally be required to reduce numbers of new

tree seedlings or rejuvenate the understory and recycle nutrients. If burning is prescribed it should normally follow a partial-cut treatment so that initial fuel loading is reduced. Partial-cut harvest slash volumes and distribution should be managed to facilitate subsequent low soil temperature, surface burns. Measures must be taken to ensure post burn survival of appropriate numbers of tree recruits.

11. Restoration targets set in Table B may be modified over time based on experience, long term monitoring and better scientific knowledge (Adaptive Management).

Table B. Ecosystem Restoration Targets for the Birkenhead Landscape Unit.

BEC Unit	Site series Still need to confirm site series	Target Stocking Standard (stems/ha)	Minimum/Maximum Stocking Standard (stems/ha)	Desired Structures Post Treatment*	Primary Leave Species (Secondary/Minor Leave Species)**	General Mgmt System Proposed
IDF ww	02, 03	- 200 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	76 – 250	WT, LT, CL, UV	02-PI (/Fd) 03-Fd (PI Py/)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain open forest
IDFww	01, 04, 05	- 250 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	170 – 400	WT, LT, CL, UV	01-Fd (PI Py / Cw) 04-Fd (Py / Cw) 05-CwFd (/Ss)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain forest condition
CWHds 1	01, 02, 03, 04, 05	- 250 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	170 – 400	WT, LT, CL, UV	01-Fd (/Cw Lw Pw) 02-PI (Fd/) 03-Fd (PI Py / Cw) 04-Fd (/Cw Lw Pw) 05-Fd (Se/Cw Pw)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain forest condition

* WT = where present and safe, retain a minimum of 5 moderate or high value wildlife trees per hectare; and 5 dying trees >50 cm dbh per hectare (e.g. by no work zone).

LT = large trees for the site, including veteran trees.

CL = approximately 1/3 of leave trees should be in clusters, not just uniform spacing.

UV = the diversity of natural understory vegetation (e.g. shrubs) should be retained, herbicide treatment should not occur.

** leave tree species are taken from the Ministry of Forests Land Management Handbook Number 28.

Legal Objectives - Soo Landscape Unit

Pursuant to Section 4 of the Forest Practices Code of British Columbia Act, the following are landscape unit objectives for the Soo Landscape Unit.

Objective 1

1. Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached Soo Landscape Unit map dated July 30, 2004 subject to timber harvesting and road construction in accordance with section 2, 3 and 4 below.

2. (1) Where sufficient suitable replacement forest is available in the variants listed below, timber harvesting or road construction may be undertaken in OGMAs that are >10 ha in size for operational reasons up to a cumulative maximum of:

i) 35 ha in variant CWHms1, and

ii) 35 ha in variant MHmm2,

provided that replacement OGMA of equivalent or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA.

(2) The criteria in 2 (1) is to apply to individual OGMAs within the categories below and must ensure that OGMA ecological attributes and spatial distribution are maintained or improved:

i) OGMAs >10 ha to <50 ha in size where the proposed activity affects the OGMA by <5 ha,

ii) OGMAs \geq 50 ha to <100 ha in size where the proposed activity affects the OGMA by <10ha,

iii) OGMAs \geq 100 ha in size where the proposed activity affects the OGMA by <10%.

iv) Construction of \leq 500m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may permanently deactivate and rehabilitate a temporary road or bridge site within four years after construction.

(3) Where OGMA boundary adjustments and replacement areas are required under section 2 (1) and (2) they must be documented, mapped and submitted to the satisfaction of the Delegated Decision Maker (DDM) at the end of each calendar year for his/her approval.

(4) The provisions in section 2 (1) and (2) do not apply to the following OGMAs #1, 7, 8, 11, 16, 18,46, 104

3. Permissible Activities:

(1) Timber harvest may occur to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMAs. Salvage within OGMAs will be done in a manner that retains as many old growth forest attributes as possible.

(2) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by <0.5 ha.

(3) Intrusions, other than those specified, that affect an OGMA by less than 0.5 hectare in total.

(4) Where OGMA replacement forest is required as a result of activities under 3 (1) or (2), it must be of equivalent or better quality and quantity and be identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape

distribution are maintained or improved. OGMA replacement areas must be documented, mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.

Permissible Activities for Safety Purposes:

- (1) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.
- (2) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value wildlife trees) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements.

Objective 2

Maintain stand level structural diversity by retaining wildlife tree patches (WTP). Cutblocks for which harvesting has been completed by each licensee by tenure will retain adequate amounts of wildlife tree patches to ensure that over each 3 year period, commencing on the date the objectives are established, the target percentage as noted in Table A is achieved. In addition:

- (1) WTPs must be well distributed across the BEC subzone and located within or immediately adjacent to a cutblock.
- (2) Each cutblock >10 ha in size must have a minimum of 2% wildlife tree retention.
- (3) No timber harvesting, including single tree selection, is to occur within WTPs for at least one rotation, except as noted in (4) below.
- (4) Salvage of windthrown timber and harvesting of remaining standing stems is only permitted within WTPs where catastrophic windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. Where salvage/harvesting is planned and authorized, replacement WTP of equivalent or better quality and quantity must be identified immediately to achieve the retention target.
- (5) WTPs must include, if present, remnant old growth patches and live or dead veteran trees (excluding danger trees).
- (6) WTPs must include representative larger trees for the stand and any moderate to high value wildlife trees (excluding danger trees).
- (7) Where differences exist between mapped and actual BEC subzones, subzones will be confirmed by site plan information.

Table A. Wildlife Tree Retention by BEC subzone in the Soo Landscape Unit.

BEC Subzone	% Wildlife Tree Retention
CWH ds (Coastal Western Hemlock, dry subarctic)	8
CWH ms (Coastal Western Hemlock, moist subarctic)	7
MH mm (Mountain Hemlock, moist maritime)	3

Legal Objectives (Amendment) - Soo Landscape Unit

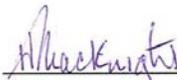
Appendix 1

Ministry of Natural Resource Operations

Ministerial Order

Amendment Order for the Soo Landscape Unit and Objectives

1. Pursuant to section 93.4 of the *Land Act* and by this order, the **Order to Establish the Soo Landscape Unit and Objectives in the Squamish Forest District**, signed August 13th 2004 by the Regional Executive Director Warren Mitchell, is amended as follows.
 - i) The boundary of the Soo Landscape Unit shown on the Soo Landscape Unit Map dated July 30, 2004, is repealed and replaced by the Soo Landscape Unit Map, dated February 5, 2010, attached to this Order.
 - ii) Old Growth Management Area 61 is repealed.
 - iii) Old Growth Management Areas 18 and 24 are repealed and replaced by the amended Old Growth Management Areas 18 and 24 shapes shown on the attached Soo Landscape Unit Map dated February 5, 2010.
 - iv) Objective 1(1) is repealed and replaced by "*Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached Soo Landscape Unit map dated February 5, 2010 subject to timber harvesting and road construction in accordance with section 2, 3 and 4 below.*"
2. This Order takes effect on the day that notice of this Order is published in the Gazette.
3. Pursuant to section 8(2)(b) of the *Forest and Range Practices Act*, an approved forest stewardship plan must be amended to be consistent with this order within 12 months from the effective date of this Order.



Heather MacKnight
Regional Executive Director, Coast Region
Ministry of Natural Resource Operations

Dec. 16, 2010

Date

Legal Objectives - Billygoat Landscape Unit

Pursuant to Section 4 of the Forest Practices Code of British Columbia Act, the following are landscape unit objectives for the Billygoat Landscape Unit.

Objective 1

1. Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached Billygoat Landscape Unit map dated July 30, 2004 subject to timber harvesting and road construction in accordance with section 2, 3 and 4 below.

2. (1) Where sufficient suitable replacement forest is available in the variants listed below, timber harvesting or road construction may be undertaken in OGMAs that are >10 ha in size for operational reasons up to a cumulative maximum of:

- i) 10 ha in variant CWHds1, ii) 20 ha in variant CWHms1,
- iii) 10 ha in variant IDFww, and iv) 15 ha in variant MHmm2,

provided that replacement OGMA of equivalent or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA.

(2) The criteria in 2 (1) is to apply to individual OGMAs within the categories below and must ensure that OGMA ecological attributes and spatial distribution are maintained or improved:

- i) OGMAs >10 ha to <50 ha in size where the proposed activity affects the OGMA by <5 ha,
- ii) OGMAs \geq 50 ha to <100 ha in size where the proposed activity affects the OGMA by <10ha,
- iii) OGMAs \geq 100 ha in size where the proposed activity affects the OGMA by <10%.
- iv) Construction of \leq 500m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may permanently deactivate and rehabilitate a temporary road or bridge site within four years after construction.

(3) Where OGMA boundary adjustments and replacement areas are required under section 2 (1) and (2) they must be documented, mapped and submitted to the satisfaction of the Delegated Decision Maker (DDM) at the end of each calendar year for his/her approval.

(4) The provisions in section 2 (1) and (2) do not apply to the following OGMAs #2, 7, 19, 28, 29, 58, 99, 100.

3. Permissible Activities:

(1) Timber harvest may occur to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMAs. Salvage within OGMAs will be done in a manner that retains as many old growth forest attributes as possible.

(2) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by <0.5 ha.

(3) Intrusions, other than those specified, that affect an OGMA by less than 0.5 hectare in total.

(4) Where OGMA replacement forest is required as a result of activities under 3 (1) or (2),it

must be of equivalent or better quality and quantity and be identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA; such that OGMA ecological attributes and spatial distribution are maintained or improved. OGMA replacement areas must be documented, mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.

4. Permissible Activities for Safety Purposes:

- (1) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.
- (2) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value wildlife trees) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements.

Objective 2

Maintain stand level structural diversity by retaining wildlife tree patches (WTP). Cutblocks for which harvesting has been completed by each licensee by tenure will retain adequate amounts of wildlife tree patches to ensure that over each 3 year period, commencing on the date the objectives are established, the target percentage as noted in Table A is achieved. In addition:

- (1) WTPs must be well distributed across the BEC subzone and located within or immediately adjacent to a cutblock.
- (2) Each cutblock >10 ha in size must have a minimum of 2% wildlife tree retention, except in the MHmm subzone.
- (3) No timber harvesting, including single tree selection, is to occur within WTPs for at least one rotation, except as noted in (4) below.
- (4) Salvage of windthrown timber and harvesting of remaining standing stems is only permitted within WTPs where catastrophic windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. Where salvage/harvesting is planned and authorized, replacement WTP of equivalent or better quality and quantity must be identified immediately to achieve the retention target.
- (5) WTPs must include, if present, remnant old growth patches and live or dead veteran trees (excluding danger trees).
- (6) WTPs must include representative larger trees for the stand and any moderate to high value wildlife trees (excluding danger trees).
- (7) Where differences exist between mapped and actual BEC subzones, subzones will be confirmed by site plan information.

Table A. Wildlife Tree Retention by BEC subzone in the Billygoat Landscape Unit.

BEC Subzone	% Wildlife Tree Retention
CWH ds (Coastal Western Hemlock, dry subarctic)	7
CWH ms (Coastal Western Hemlock, moist subarctic)	2
IDF ww (Interior Douglas Fir, wet warm subzone)	12
MH mm (Mountain Hemlock, moist maritime)	0

APPENDIX D - ORDERS

- **GOAT WINTER RANGE #U2-002-005**
- **UNGULATE WINTER RANGE #U2-005**
- **GRIZZLY BEAR WHA #2-173– 2-175, 2-177 – 2-193, and 2-254-270**
- **SPOTTED OWL WHA #2-517 to 2-525**
- **NOTICE - SURVIVAL OF SPECIES AT RISK**
- **GRIZZLY BEAR WHA #2-272 TO 2-297, 2-381 TO 2-386, 2-390 TO 2-406, 2-436 TO 2-243**
- **ORDER - LAND USE OBJECTIVES FOR THE SEA TO SKY LAND AND RESOURCES MANAGEMENT PLAN**

UNGULATE WINTER RANGE #U2-002



ORDER – UNGULATE WINTER RANGE #U2-002

On being satisfied that the establishment of the ungulate winter range dealt with in this order is necessary to meet the habitat requirements of the ungulate species, and that the management objectives dealt with in this order are necessary to maintain the ungulate species within those areas, and under the authority of section 69 (1) (a) and (b) of the Operational and Site Planning Regulation, B.C. Reg. 107/98, the Deputy Minister of Water, Land and Air Protection orders that

1. the ungulate winter range shown in the map set out in the attached Schedule A (#U2-002) is established;
2. the ungulate winter range referred to in section 1 is approved for mountain goat (*Oreamnos americanus*); and
3. the following practices are established as management objectives inside the ungulate winter range referred to in section 1:

Maintain mountain goat winter ranges to provide high suitability habitat. Habitat attributes include snow interception, foraging opportunities, escape terrain, steep south and west-facing windswept ridges/slopes, conifer bluffs, shrub/grass communities, and security cover. This will be accomplished by applying the following specific management objectives to the proposed UWRs:

Objective 1

Road and trail construction and timber harvesting, including but not limited to, single tree selection and salvage topping for cone harvesting, will not be permitted within the GWRs, except as specified in section 1 and 2 below:

1. The MWLAP Statutory Decision Maker or designate, through the approval of a variance, may allow operations to occur within a GWR for reasons such as but not limited to the following:
 - a. Construction of roads and/or yarding corridors if no other practicable option exists.
 - b. Treatments to restore or enhance degraded habitats.
2. The following activities will be allowed to occur within a GWR subject to objective 2:
 - a. Maintenance and deactivation of existing roads.
 - b. Brushing or clearing along existing roads under active tenure within right of way for safety purposes.
 - c. Falling of guyline clearance, tailhold anchor trees or danger trees along right of way and cutblock boundaries, where the tree has been determined as a danger tree by a qualified Wildlife/Danger Tree Assessor, and the establishment of a No-work Safety Zone as per Worker's Compensation Board requirements is not practicable. Any trees that must be felled within a GWR will be left onsite to provide coarse woody debris.
 - d. Existing access agreements that were previously negotiated between industry and MWLAP will continue to be honoured.

ORDER – UNGULATE WINTER RANGE #U2-002

Objective 2

Where activities within a GWR have been approved by the MWLAP Statutory Decision Maker or designate or where exempted activities must occur, consistent with Objective 1, they shall be undertaken during a period extending from May 1 to October 31 of a calendar year, except as specified below:

1. The MWLAP Statutory Decision Maker or designate may permit industrial operations to occur within a GWR boundary for a period extending up to 4 weeks prior to May 1 and 4 weeks past October 31, where relevant site inspection data indicates that no impacts to Mountain Goats using the GWR will result from the extended operations; or
2. The MWLAP Statutory Decision Maker or designate may permit industrial operations to occur within a GWR boundary during some other specified period, where relevant site inspection data indicates that negative impacts to Mountain Goats using the GWR may result from operations occurring between May 1 and October 31 of a calendar year.

UNGULATE WINTER RANGE #U2-005 – Amended October 31, 2014



ORDER – AMENDMENT TO UNGULATE WINTER RANGE U-2-005
Black-tailed Deer and Moose – Sea to Sky Forest District

This Order is given under the authority of sections 9(2) and 12(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004)(GAR).

1. The delegated decision maker, being satisfied that
 - i. the area contains habitat that is necessary to meet the winter habitat requirements for Black-tailed deer (*Odocoileus hemionus*) and Moose (*Alces americanus*); and
 - ii. the habitat requires special management that is not otherwise provided for under GAR or another enactment;

orders that

- a) this Order cancels and replaces:
 - i. the Order that became effective February 28, 2005 entitled “Order – Ungulate Winter Range #U-2-005”; and
 - ii. the Order that became effective on November 6, 2008 entitled “Order – Amendment to Ungulate Winter Range U-2-005”;
- b) pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan is exempt from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for the winter survival of ungulates in the Soo Timber Supply Area;
- c) the “retention” designation for Black-tailed deer unit G80-25-RE is canceled, and replaced with the amended “retention” unit G80-25-RE and amended “rotation” unit G80-25-RO as shown on the attached Schedule A map, and contained in the UWR spatial layer stored in the Geographic Warehouse
(WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY). The centre point of the line on the attached Schedule A map is what establishes the UWR boundary;
- d) the “retention” designation for Black-tailed deer units G98-34-RE and J18-87-RE is canceled, and replaced with a “rotation” designation as shown on the attached Schedule A map, and contained in the UWR spatial layer stored in the Geographic Warehouse
(WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY). The amended units are renamed G98-34-RO and J18-87-RO. The centre point of the line on the attached Schedule A map is what establishes the UWR boundary;
- e) the “rotation” designation for Black-tailed deer units J18-88-RO and J18-89-RO is cancelled, and replaced with a “retention” designation as shown on the attached Schedule A map, and contained in the UWR spatial layer stored in the Geographic Warehouse
(WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY). The amended units are renamed J18-88-RE and J18-89-RE. The centre point of the line on the attached Schedule A map is what establishes the UWR boundary;
- f) the area described as “J28-205-RE” and shown in the map set out in the attached Schedule A, and contained in the UWR spatial layer stored in the Geographic Warehouse
(WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY), is

established as Black-tailed deer unit J28-205-RE of U-2-005. The centre point of the line on the attached Schedule A is what establishes the UWR boundary;

- g) the areas described as “J27-46-RE (cancelled)”, “J27/28-47-RO (cancelled)”, “G88-90-RE (cancelled)”, “G75-9-RO (cancelled)” and shown in the map set out in the attached Schedule A, being entirely protected under the provincial *Park Act*, are deleted and no longer part of the Order for UWR U-2-005;
 - h) the areas described as “G75-11-RO”, “J57-86-RE”, and “J26/27-201-RO” and shown in the map set out in the attached Schedule A, and contained in the UWR spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY), with portions being protected under the provincial *Park Act*, are amended;
 - i) the areas described as “J37-64-RO”, “J58-58-RO”, and “J58-59A-RO” and shown in the map set out in the attached Schedule A, and contained in the UWR spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY) with portions being in private land, are amended;
 - j) the Black-tailed deer unit J47-80-RE amended by the Order for UWR U-2-005 established November 6, 2008 and shown in the map set out in the attached Schedule A, and contained in the UWR spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY) remains unchanged and in effect;
 - k) the remaining Black-tailed deer and Moose units originally established by the Order for UWR U-2-005 on February 28, 2005 and shown in the map set out in the attached Schedule A map, and contained in the UWR spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY) remain unchanged and in effect ;
 - l) if there is a discrepancy between the areas shown in the map set out in the attached Schedule A map and the UWR spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_POLY), the areas as detailed in the UWR spatial layer will take precedent.
2. The delegated decision maker, being satisfied that
- i. the general wildlife measures (GWMs) described below are necessary to protect and conserve the winter habitat of Black-tailed deer and Moose; and
 - ii. GAR or another enactment does not otherwise provide for that protection or conservation;
- orders that
- a) the GWMs outlined in Schedule 1 are established for U-2-005;

Schedule 1:

Definitions:

Words and expressions not defined in this Order have the meaning given to them in *the Forest and Range Practices Act* (FRPA) and the regulations made under it, unless context indicates otherwise.

Deer Winter Range – Retention means forested habitat, usually stands of mature or old-growth conifers, which provide deer with resources critical to survival during severe winters.

Deer Winter Range – Rotation means habitats in various stages of succession that provide deer winter habitat for survival and are usually located between retention winter range habitats when the distance between retention winter ranges is >4km; or in areas where there is a lower snow pack and known deer winter use.

Director means the Director of Resource Management, South Coast Region, Ministry of Forests, Lands and Natural Resource Operations (FLNR).

Functional Winter Range means a narrow range of habitats that sustain deer over winter periods of extended stressful conditions. Functional winter range is important and is required during periods where snow can persist occasionally over extended periods of time.

Incursion means new timber harvesting or road construction that is located within a UWR boundary where no harvesting or road construction is otherwise permitted to occur.

Moose Core Winter Range means forested habitat, usually stands of mature or old-growth conifers, having very high winter forage values and/or good snow interception properties and are close to good moose forage values.

Moose Winter Range Forage Management Zone means habitat that is outside the Moose Core Winter Range that is managed for the production of winter moose forage.

Productive forest area means forest included as either contributing, partial contributing or non-contributing as per timber supply review planning.

Traditional and cultural activities are as defined in the *Free Use Permit Regulation of the Forest Act*.

General Wildlife Measures:

Deer Winter Range – Retention units (DWRRE):

1. No timber harvesting, including salvage, and road construction are permitted. Exemptions would only normally be considered for the purposes of enhancing quality of the DWRRE; or for roads where there is no other practicable option.
2. GWM 1 does not apply if:
 - a. it is necessary to create guyline tiebacks for timber harvesting outside of a DWRRE boundary;
 - b. trees felled in accordance with GWM 2 (a) are retained onsite to function as coarse woody debris, unless the felled tree:
 - i. lies outside the DWRRE boundary; or

- ii. poses a forest health risk;
- c. cutting of trees is for the purpose of traditional and cultural activities, as authorized under a Free Use Permit issued under the *Forest Act*; or
- d. road maintenance activities, or road deactivation, or brushing and clearing activities occur on existing roads.

Deer Winter Range – Rotation units (DWRRO):

- 3. Maintain a minimum of 20% of the total DWRRO area in each unit as *functional winter range* at any one time. The functional winter range component must be spatially arranged to provide optimum ready access to forage and shelter for deer; and must be spatially identified prior to commencing harvesting.
- 4. Up to 20% of the total DWRRO area in each unit can be harvested every 20 years without restrictions as long as GWM 3 has been met.
- 5. The requirements of GWM 4 may be exceeded if Silviculture treatments, and timber harvesting including intermediate commercial thinning, are undertaken in the same DWRRO unit to enhance, create or expedite the production of functional winter range.

Moose Core Winter Range (MCWR):

- 6. Timber harvesting, including salvage, and road construction are not permitted. Exemptions would normally be considered for the purposes of enhancing the quality of the MCWR; or for roads where there is no other practicable option.
- 7. GWGWM 6 does not apply if:
 - a. it is necessary to create guyline tiebacks for timber harvesting outside of a MCWR boundary;
 - b. trees felled in accordance with GWM 7 (a) are retained onsite to function as coarse woody debris, unless the felled tree:
 - i. lies outside the MCWR boundary; or
 - ii. poses a forest health risk;
 - c. cutting of trees is for the purpose of traditional and cultural activities, as authorized under a Free Use Permit issued under the *Forest Act*; or
 - d. road maintenance activities, or road deactivation, or brushing and clearing activities occur on existing roads.

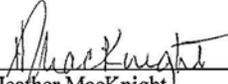
Moose Winter Range Forage Management Zone (MWRFMZ):

- 8. Timber harvesting, reforestation and stand tending (silviculture) operations in MWRFMZ are permitted if they will not cause a material adverse impact on the production of moose winter forage.

9. Timber harvesting will result in cut blocks where areas of forage production are ≤ 200 meters from a group of retained trees, an area of wildlife tree retention, or the cut block boundary.
10. Wildlife tree retention areas, or other groups of retained trees (up to 0.2 ha), planned within an area of timber harvesting, will be designed to provide patches of snow interception and security cover.

Incursions:

11. Where primary forest activities are planned immediately adjacent to any DWRRE or MCWR unit in U-2-005 with >30 ha productive forest area, GWMs #1 or #6 respectively do not apply to the area of an incursion along the UWR unit boundary if:
 - a. the incursion is required to provide for a logical harvesting boundary or a logical road or trail location that utilizes a physical feature or administrative boundary; and
 - b. the area of the incursion, or multiple incursions cumulatively, do not exceed:
 - i. 1 ha of productive forest area in UWR units with >30 ha and ≤ 50 ha productive forest area; or
 - ii. 2 ha of productive forest area in UWR units with >50 ha to ≤ 100 ha productive forest area; or
 - iii. 3 ha or 1% of productive forest area, whichever is greater, in UWR units with >100 ha productive forest area;
 - c. the incursion exceeds 0.5 ha, and the area of the incursion is replaced with an equivalent or greater area of equal or better habitat contiguous to the UWR unit such that there is no net loss; and the incursion does not affect the intent or integrity of the UWR unit; and
 - d. boundaries of the incursion and any replacement habitat are provided to the Director (via ESRI shape files) prior to the commencement of primary forest activities associated with the incursion.



Heather MacKnight
Regional Executive Director, South Coast Region
Ministry of Forests, Lands and Natural Resource Operations

October 31, 2014.

Date Signed

Appendix 1:

The following information is provided by FLNR and Ministry of Environment (MoE) as background information and support to the Order amending UWR U-2-005. This appendix is not part of the Order.

1. **Activities to which the Order does not apply:** Section 2(2) of the *Government Actions Regulation* states

An Order under any of sections 5 to 15 does not apply in respect of

- (a) any of the following entered into before the Order takes effect:
 - (i) a cutting permit;
 - (ii) a road permit;
 - (iii) a timber sale licence that does not provide for cutting permits;
 - (iv) a forestry licence to cut issued by a timber sales manager under section 47.6 (3) of the *Forest Act*;
 - (v) subject to subsection (3), a minor tenure,
- (b) a declared area,
- (c) areas described in section 196 (1) of the *Act*, and
- (d) areas referred to in section 110 of the *Forest Planning and Practices Regulation*.

2. Authority to consider an exemption from these GWMs is provided in Section 92(1) of the *Forest Planning and Practices Regulation* and section 79(1) of the *Woodlot License Planning and Practices Regulation*. An exemption may be provided if the Minister's delegate is satisfied that the intent of the GWM will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the Director of Resource Management, South Coast Region with a rationale describing the nature of the problem and options to integrate winter range conservation with proposed forest and/or range practices. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 14 calendar days of arrival at the FLNR regional office. Incomplete packages will be returned to the proponent for re-submission. A template for exemption requests is available at: <http://www.env.gov.bc.ca/wld/frpa/index.html>

3. In the Soo Timber Supply Area two subspecies of Black-tailed deer occur. Coastal areas are occupied by Columbian Black-tailed deer (*Odocoileus hemionus columbianus*) while more interior habitats are occupied by Rocky Mountain mule deer (*O. h. hemionus*). The GWMs do not distinguish between the two subspecies.
4. Moose winter range is differentiated from deer winter range on the Schedule A map by colour. Labels for deer winter range "retention" and "moose core winter range" include a descriptor shown as "RE" (e.g. J28-49-RE). Labels for deer "rotation" and "moose winter range forage management zone" include a descriptor shown as "RO" (e.g. J28-53-RO).

5. Any maps produced by *Forest Act* agreement holders to spatially identify at least 20% functional winter range in DWRRO, or any mapping undertaken in support of timber harvesting in MWRFMZ, are to be kept on file and made available to a government official upon request. It is recommended that qualified professionals be engaged to help spatially define the functional winter range in DWRRO, or assist with planning in MWRFMZ.
6. Specific to GWM 4 in Deer Rotation Winter Range, where up to 20% of the total rotation polygon may be harvested every 20 years, the intent is to include any forest in the rotation winter range category that is <20 years old at the time of the assessment. The “up to 20% every 20 years” is not measured or tied to the Order date (i.e. every 20 years is not measured from 2005 to 2024, then 2025 to 2044). As an example, if a licensee in the year 2012 is considering a new cut block in a 100 ha rotation deer winter range and there is a 20 ha - 18 year old cut block already existing, then the 18 year old block is included as part of the 20%, and in this example no further regular harvesting would be allowed until the existing block was at least 20 years old. In the same example, if the 18 year old block was only 10 ha, then a further 10 ha could be harvested in 2012.
7. Guidance specific to GWM 3, 4, 5, 8, 9 and 10 is provided in Appendix 2.
8. The intent of GWM 11 is to facilitate pre-authorized boundary exemptions for those UWR retention or core units with >30 ha productive forest area provided that FLNR is notified prior to the incursion taking place.

Examples of incursions include a cut-block, road, trail or landing that overlaps an UWR boundary and: a) that the intent of the UWR boundary was to follow a creek/road and in some areas the boundary extends slightly beyond the creek/road due to a GIS mapping error and creates the overlap; or b) unintentional overlap occurs with an engineered primary forest activity that becomes evident when comparing map scales (e.g. 1:20000 vs 1:5000); or c) *Forest Act* agreement holders can demonstrate that the block, road, trail or landing are located in a logical location and the incursion does not exceed the amount allowed.

In almost all instances the amount of incursion is anticipated to affect a small area. No replacement area is required when the discrepancy is: a) caused by GIS boundary mapping error since the intent of the winter range has not been altered; or b) the cumulative overlap is <0.5 ha. In other situations, the intended result is that where a boundary amendment is suggested by a *Forest Act* agreement holder and when the reduction is measurable (≥ 0.5 and ≤ 3 ha or <1% measured cumulatively in any UWR unit), it will result in no net loss to the winter range. Delineation of equal or better UWR habitat, in quantity and quality, will be required. A biological assessment to replace habitat should be conducted by a qualified professional with appropriate training and experience for the work being completed. If replacement habitat is required and equal or better habitat is not available contiguous to the UWR unit in question, the incursion cannot proceed under this GWM. Boundary amendments meeting the conditions identified in GWM 11 will be periodically reviewed by FLNR and MoE and the UWR boundary officially amended under the *Government Actions Regulation*. In any instances where the conditions in GWM 11 cannot be met, proposed primary forest activities will require an exemption as outlined under section 2 in this Appendix.

UWR retention or core units with <30 ha productive forest area are excluded from GWM 11 because of potential adverse impacts to the small amount of existing snow interception cover from an incursion. An exemption request for any of these small UWR units should be submitted to the Director of Resource Management as outlined under section 2 in this Appendix. Proponents are responsible for determining the amount of productive forest area (i.e. area of contributing, partial-contributing, or non-contributing forest as per the timber supply review) within all UWR units to determine which category they fit into in the GWM.

In addition to reporting incursions to the Director prior to commencement of activities as per GWM 11(d), it is the proponent's responsibility to keep accurate records of each occurrence. Records must also be made available to a government official upon request.

9. These GWMs do not apply to persons who must comply with the *Worker's Compensation Act* and the regulations under that *Act* (e.g. danger tree felling). Consistent with section 2(3) of the *Forest Planning and Practices Regulation*, exemptions from these GWMs are not required to meet safety requirements. Where safety considerations prevent following the GWMs, professionals should consider writing a rationale to explain the safety issue; and it should be kept on file.

Appendix 2.

The following information is provided by FLNR and Ministry of Environment (MoE) as background information and support to the Order amending UWR U-2-005. This appendix is not part of the Order.

A. Deer Winter Range:

1. In meeting the requirement for GWM 3, the critical features of functional winter range that will help to sustain deer during winter periods are:

- well-developed tree crowns that intercept snow (allowing foraging and movement);
- warm aspects (SE, S, SW, W);
- moderate to steep slopes (40-100%);
- elevations below 1500m (in interior ecosystems on shallow snow pack zones, and 1000m in coastal ecosystems and the moderate to deep snow pack zones);
- small openings (<0.5 ha) in a variable canopy permitting growth of key forage species;
- multiple canopy layers with an understory of Douglas-fir or cedar-hemlock thickets providing additional thermal cover, security cover and forage;
- small rock outcrops that provide intense solar radiation and foraging areas and thermal sites;
- minimal shading from adjacent hillsides;
- older forests (>100 years) with arboreal lichen (*Alectoria*, *Bryoria* and *Usnea* spp.) which are key winter food sources, especially when snow depths restrict access to the availability of other rooted forage species;
- proportions of crown closure habitat within functional deer winter range (Figure 1) within the Moderate Snowpack Zone:

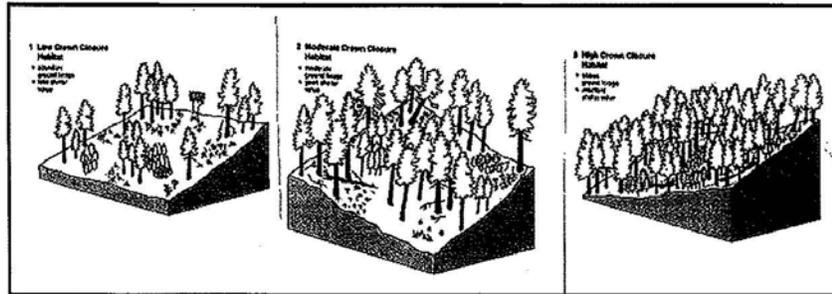
Crown closure habitat types within functional deer winter range in low, moderate, and deep snowpack zones¹:

<i>Crown Closure Habitat</i>	<i>Crown Closure Percentage</i>	<i>Crown Closure Class Code</i>	<i>Recommended proportion (%) of Crown Closures within the Shallow Snowpack Zone* (100 cm mean annual snowfall)</i>	<i>Recommended proportion (%) of Crown Closures within the Moderate Snowpack Zone* (100-150 cm mean annual snowfall)</i>	<i>Recommended proportion (%) of Crown Closures within the Deep Snowpack Zone* (150-200 cm mean annual snowfall)</i>
Low	16-35%	2, 3	~40	~33	~33
Moderate	36-65%	4, 5, 6	~40	~33	0
High	>65%	>6	~20	~33	~66

*This Order does not define elevations for snow zones, however: Shallow Snowpack Zone is generally defined as <400 m elevation. Moderate Snowpack Zone is generally defined as 400-800 m elevation. Deep Snowpack Zone is generally defined as >800 m elevation.

¹ See Armleder, H.M., M.J. Waterhouse, R.J. Dawson and K.E. Iverson. 1998. Mule Deer Response to Low-volume Partial Cutting on Winter Ranges in Central Interior British Columbia. Ministry of Forests, Research Program. B.C.

Figure 1: Proportions of crown closure habitat within functional deer winter range



2. In meeting the requirement for GWMs 4 and 5, the following is suggested operational guidelines for planning harvesting, planting, stand tending and road building within a Rotation Winter Range:

The following guidelines have been divided into recommendations when harvesting: 1) an area within a rotation winter range that meets GWM 4; and 2) a portion of the winter range for the purpose of creating, expediting or enhancing part of the winter range as per GWM 5.

<i>Harvesting</i>	
<i>Guidelines to consider when harvesting the unrestricted 20% of the rotation winter range as to GWM 4.</i>	<i>Guidelines to apply when creating winter range attributes in rotation winter range through mitigation or enhancement as per GWM 5.</i>
<ul style="list-style-type: none"> • Consider small openings as opposed to one large one • Consider lower volume selective harvesting 	<ul style="list-style-type: none"> • Maintain the crown closure proportions recommended for the specific snowpack zone • Openings should be 0.5 to 1.0 tree heights wide (Nyberg and Janz 1990).
<ul style="list-style-type: none"> • Maintain micro-habitats important to deer (ridges, rock outcrops and knolls with conifer cover, topographic breaks or edges that show travel use by deer, dense thickets that provide security and thermal cover) 	<ul style="list-style-type: none"> • Maintain a significant component of old-growth trees; cover must be at least 100m wide to be effective at providing cover and gain thermal shelter • Maintain micro-habitats important to deer (ridges, rock outcrops and knolls with conifer cover, topographic breaks or edges that show travel use by deer, dense thickets that provide security and thermal cover) • Control debris (slash) depths to maintain movement opportunities for deer • Minimize damage to residual trees and regeneration

3. Other considerations:

- If **road building** must occur in or adjacent to a winter range, harassment or disturbance pressures on deer can be reduced by:
 - Designing road layout to minimize the amount of road required;
 - Avoiding road routes through the winter range or along an edge; and
 - Maintaining, where possible, cover (screening) along the road edge.
- **Reforestation (tree species selection) and stand density management** that produce an optimum mix of: 1) large crowns for cover; and 2) thermal shelter, should be considered when preparing a site plan or enhancement plan in a rotation winter range.
- Consulting a qualified professional in wildlife/forest management is recommended when preparing site plans or enhancement plans for a rotation winter range.

B. Moose Winter Range:

1. In meeting the requirements of GWM 8, 9 and 10, the following is offered as guidance for operating in Moose Winter Range Forage Management Zone:

Harvesting Operating Guidelines²:

- Harvesting may utilize a suite of harvesting/silviculture systems including clear cutting, variable retention, selective logging, and commercial thinning.
- Special attention is to be paid to including the retention of larger limbed tree species (specific to individual ecosystems) that provide better snow interception than other species.
- Early harvesting (i.e. before culmination age is achieved) is permitted as a technique to put a closed canopy stand back into the high forage value status associated with a recently logged (i.e. early seral) vegetative community.
- Commercial thinning can be used to reduce crown closure and stimulate the production of herbaceous forage species. Commercial thinning may be done uniformly across a stand or involve removal of small groups to target a mosaic of mature trees and forage areas on the floodplain in the future.
- Commercial thinning in combination with delayed or extended rotation final harvest may also be considered. Multiple entry commercial thinning may be considered as a part of this strategy.

Reforestation Operating Guidelines:

- Generally, reforestation strategies which optimize timber production and forage production are to be used within the THLB portion of the MWRFMZ.
- Reforestation prescriptions should include options such as cluster planting or lower density stocking so that crown closure is delayed and forage production is maintained further into the rotation.

² See International Forest Products Ltd (Interfor) 2002. TFL 38 Moose Winter Range Management Strategy. June 2002. Squamish, B.C.

- Tree species that provide for better snow interception characteristics should be considered for reforestation.
- Brush control prescriptions should focus only on control of brush that is directly competing with crop trees and should specifically avoid incidental or broadcast brushing of high value forage species such as red-osier dogwood, black cottonwood and willow.

Stand Tending Operating Guidelines:

- Juvenile spacing may be used to reduce crop tree density and thereby increase light to the forest floor and stimulate rooted forage production.
- Pruning prior to crown closure may be used to increase light penetration and maintain forage production longer into the rotation.
- In stands where stand establishment has been achieved, consider manual brushing to promote sprouting to increase the forage supply.

C. References:

Armleder, H.M., M.J. Waterhouse, R.J. Dawson, and K.E. Iverson. 1998. Mule Deer Response to Low-volume Partial Cutting on Winter Ranges in Central Interior British Columbia. Ministry of Forests, Research Program, BC.

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region. Ministry of Forests, Research Branch, BC.

International Forest Products Ltd (Interfor). 2002. TFL 38 Moose Winter Range Management Strategy. Squamish, BC.

Nyberg, J.B. and D.W. Janz, technical eds. 1990. Deer and Elk Habitats in Coastal Forests of Southern British Columbia. Ministry of Forests, Special Report Series 5, Research Branch, Victoria, BC.

Resources Inventory Committee. 1997. Standardized inventory methodologies for components of British Columbia's biodiversity: Ground based census techniques for selected cervids – Moose, Elk, Mule/Black-tailed Deer, White-tailed Deer and Fallow Deer. Ministry of Environment, Lands and Parks, Wildlife Branch, Victoria, BC.

St-Louis, A., J.P. Ouellet, M. Crête, J. Maltais, and J. Huot. 2000. Effects of partial cutting in winter on white-tailed deer. *Can J. For. Res.* 30: 655-661 (2000). © 2000 NRC Canada.

GRIZZLY BEAR WHA #2-172 to 2-175, 2-177 to 2-193, 2-204, 2-254 to 2-270



NOTE: WHA 2-260 was amended on August 25, 2010, therefore this order no longer applies to WHA 2-260. (Feb 21, 2012)

ORDER – Wildlife Habitat Areas # 2-172 to 2-175, 2-177 to 2-193, 2-204, 2-254 to 2-270

This order is given under the authority of sections 9(2) and 10(1) of the *Government Actions Regulation* (B.C. Reg. 582/04).

The Deputy Minister of Environment orders that:

1. the wildlife habitat areas shown in the map set out in the attached Schedule A (2-172 to 2-175, 2-177 to 2-193, 2-204, 2-254 to 2-270) and boundaries contained in the GIS file *twha_bc* are established;
2. the wildlife habitat areas in the attached Schedule A and boundaries contained in the GIS file *twha_bc* are established for Grizzly Bear (*Ursus arctos*);
3. the general wildlife measures outlined in Schedule 1 are established for the wildlife habitat areas in the attached Schedule A and boundaries contained in the GIS file *twha_bc*;
4. where there is any discrepancy between the Wildlife Habitat Area boundaries as shown in the attached Schedule A and the GIS file *twha_bc*, the boundaries as detailed in the GIS file will take precedent. The centre point of the line on the map denoting the wildlife habitat area establishes the boundary;
5. for the purposes of section 2(3)(a) of the *Government Actions Regulation*, these General Wildlife Measures apply to minor tenures; and
6. pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan are hereby exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* to the extent that wildlife habitat areas 2-172 to 2-175, 2-177 to 2-193, 2-204 and 2-254 to 2-270 address the amount included for Grizzly Bear in the Notice for the Squamish Forest District.

Schedule 1 – General Wildlife Measures

Access

- Do not construct roads, trails or landings unless there is no other practicable option and an exemption is approved by the Minister of Environment or delegate. An exemption would not be required for road maintenance and deactivation on existing roads within the WHA; nor to allow tailholds in the WHA associated with landings adjacent to the WHA boundary. Where roads in the WHA are permanently deactivated, proponents must notify the Ministry of Environment Regional Manager.

Harvesting

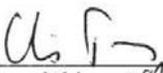
- No timber harvesting should be carried out within the WHA unless an exemption is approved by the Minister of Environment or delegate. Exemptions would only normally be considered to restore or enhance degraded habitat and to ensure windfirmness. An exemption would not be required to meet worker safety concerns (e.g. danger tree felling in the WHA) for harvesting/silviculture in cutblocks adjacent to the WHA.

Silviculture and Pesticides

- Do not use pesticides unless there is no other practicable option and an exemption is approved by the Minister of Environment or delegate. When reforesting areas within the WHA use reduced stocking standards as outlined in the document titled, Grizzly Bear Habitat in Managed Forests: Silviculture Treatments to Meet Habitat and Timber Objectives.

Range

- Plan livestock grazing to maintain forage value for Grizzly Bears and minimize the potential for conflicts.
- Do not place livestock attractants within WHA.
- Incorporate management strategies in the range use plan to reduce contact and competition between livestock and Grizzly Bears. Consider salt placement, alternate water development, drift fencing, or altering periods of livestock use.
- Existing range tenures (RAN072850, RAN072851, RAN072852) overlapping WHA 2-190 are exempted from these general wildlife measures.


Signed this 25th day of May, 2006
Chris Trumpy, Deputy Minister
Ministry of Environment

Wildlife Habitat Areas # 2-172 to 2-175, 2-177 to 2-193, 2-204, 2-254 to 2-270

The following information is intended to provide background information and support to the legal order establishing WHAs 2-172 to 2-175, 2-177 to 2-193, 2-204, 2-254 to 2-270. The appendix is not part of the legal order.

Appendix 1

1. Authority to consider an exemption from these general wildlife measures is provided in Section 92(1) of the *Forest Planning and Practices Regulation*. In instances where it is not practicable to comply with these measures, a person proposing to conduct forestry activities should consider seeking an exemption from the requirements to comply with the applicable General Wildlife Measures.

An exemption application should be submitted to the Minister's delegate (Regional Manager – Ministry of Environment, for the Region that the Wildlife Habitat Area is located) with a rationale describing the nature of the problem and options to integrate habitat conservation with proposed forest practices. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 30 days of arrival. Incomplete packages will be returned to the proponent for resubmission.

GRIZZLY BEAR WHA #2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443 and WHA #2-260



ORDER – Wildlife Habitat Areas
2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443
Grizzly Bear – Squamish Forest District

This order is given under the authority of sections 9(2) and 10(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004) (GAR).

1. The Deputy Minister of Environment, being satisfied that
 - i. the following area contains habitat that is necessary to meet the habitat requirements for Grizzly Bear (*Ursus arctos*);orders that
 - a) the areas shown in the map set out in the attached Schedule A (2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443) and contained in the wildlife habitat area (WHA) spatial layer stored in the Geographic Warehouse (*fwha_bc*) are established as wildlife habitat areas 2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443 for Grizzly Bear. The centre point of the line on the attached Schedule A is what establishes the WHA boundary;
 - b) if there is a discrepancy between the areas shown in the map set out in the attached Schedule As and the WHA spatial layer stored in the Geographic Warehouse (*twha_bc*), the areas as detailed in the WHA spatial layer will take precedent; and
 - c) pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan are hereby exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for Coastal Tailed Frog in the Squamish Forest District.

2. The Deputy Minister of Environment, being satisfied that
 - i. the general wildlife measures (GWMs) described below are necessary to protect or conserve the habitat of Grizzly Bear ; and
 - ii. GAR or another enactment does not otherwise provide for that protection or conservation;orders that
 - a) the GWMs outlined in Schedule 1 are established for WHAs 2-272 to 2-297, 2-381 to 2-386, 2-388, 2-390 to 2-406, 2-436 to 2-443.

NOTE: With approval of this order, *Forest Act* agreement holders are exempt from their obligations to prepare a result or strategy for both Grizzly Bear and Coastal Tailed Frog in the Squamish Forest District. The exemption for Grizzly Bear is provided in an notice amendment available at:
<http://www.env.gov.bc.ca/wld/frpa/notices/sar.html>
(August 22, 2011)

Definitions

Words and expressions not defined in this order have the meaning given to them in the *Forest and Range Practices Act (FRPA)* and the regulations made under it, unless context indicates otherwise.

incursion means timber harvesting or road construction that is located within a wildlife habitat area boundary where no harvesting or road building is otherwise permitted to occur.

productive forest area means forest included as either contributing, partial contributing and non-contributing as per Timber Supply Review 2 planning

regional manager means the Ministry of Environment Regional Manager Environmental Stewardship, South Coast

traditional and cultural activities is as defined in the *Free Use Permit Regulation*.

Schedule 1 – General Wildlife Measures:

Access, harvesting and silviculture

1. Do not harvest timber or construct roads in the WHA.
2. Provided the Regional Manager is notified prior to the commencement of activities, GWM 1 does not apply if:
 - a) future road reconstruction is required through WHA 2-438, 2-439 or 2-440 to access timber beyond the WHA; or
 - b) future road reconstruction or relocation of the Lillooet South FSR is required through WHA 2-399 or 2-400, as a result of flooding, debris torrent or similar natural event, associated with the Lillooet River.
3. GWM 1 does not apply if:
 - a) timber harvesting within the WHA is necessary to create guyline tiebacks for timber harvesting provided trees that fall within the WHA boundary are retained on site to function as coarse woody debris;
 - b) cutting of trees is for the purposes of traditional and cultural activities, as authorized under a Free Use Permit;
 - c) timber harvesting occurs in Block 18-6 within WHA 2-382, with an area not to exceed that shown on the field map dated May 1, 2009; or
 - d) timber harvesting and temporary road construction occurs in Block 156 in WHA 2-397, with an area of overlap not to exceed that shown on the map dated August 9, 2010.

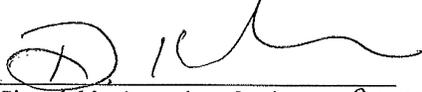
4. Where timber harvesting or road construction are planned immediately adjacent to any WHA with >30 ha productive forest area, GWM 1 or GWM 3 do not apply to the area of an incursion along the WHA boundary if:
- a) the incursion is required to provide for a logical harvesting boundary or a logical road or trail location that utilizes a physical feature or administrative boundary;
 - b) the area of the incursion, or multiple incursions cumulatively, do not exceed:
 - i. 1 ha of productive forest area in WHAs with >30 ha and ≤50 ha productive forest area; or
 - ii. 2 ha of productive forest area in WHAs with >50 ha to ≤100 ha productive forest area; or
 - iii. 3 ha or 1% of productive forest area, whichever is greater, in WHAs with >100 ha productive forest area;
 - c) the incursion exceeds 0.5 ha, and the area of the incursion is replaced with an equivalent or greater area of equal or better habitat contiguous to the WHA such that there is no net loss; and the incursion does not affect the intent or integrity of the WHA; and
 - d) the incursion as per GWM 4 a) or b), and any replacement habitat as per GWM 4 c) are provided to the Regional Manager (via ESRI shapefiles) prior to the commencement of primary forest activities associated with the incursion.

Pesticides

5. Do not use pesticides in the WHA, except for:
- a) the use of *Bacillus thuringiensis* var *kurstaki* for the control of western spruce budworm;
 - b) the use of beetle pheromones for the control of bark beetles; and
 - c) the application of herbicides to control invasive plants or noxious weeds.

Recreation

6. Wherever practicable, do not develop recreational structures, trails, or facilities.


Signed this 25 day of August 2010
Doug Konkin, Deputy Minister
Ministry of Environment

Appendix 1:

The following information is provided by the Ministry of Environment as background information and support to the order establishing WHAs 2-272 to 2-297; 2-381 to 2-386; 2-388 to 2-406; 2-436 to 2-443. This appendix is not part of the order.

1. **Activities to which the order does not apply:** Section 2(2) of the *Government Actions Regulation* states

An order under any of sections 5 to 15 does not apply in respect of

(a) any of the following entered into before the order takes effect:

(i) a cutting permit;

(ii) a road permit;

(iii) a timber sale licence that does not provide for cutting permits;

(iv) a forestry licence to cut issued by a timber sales manager under section 47.6 (3) of the *Forest Act*;

(v) subject to subsection (3), a minor tenure,

(b) a declared area,

(c) areas described in section 196 (1) of the Act, and

(d) areas referred to in section 110 of the *Forest Planning and Practices Regulation* (FPPR).

2. Authority to consider an exemption from these GWMs is provided in section 92(1) of the FPPR, and section 79(1) of the *Woodlot License Planning and Practices Regulation*. An exemption may be provided if the Minister's delegate is satisfied that the intent of the GWM will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the Minister's delegate (Regional Manager for the region in which the order applies) with a rationale describing the nature of the problem and options to integrate WHA conservation with proposed forest and/or range practices. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 14 calendar days of arrival. Incomplete packages will be returned to the proponent for re-submission. A template for exemption requests is available at: <http://www.env.gov.bc.ca/wld/frpa/index.html>

3. For GWM 1, exemptions would only normally be considered to restore or enhance degraded habitat, as determined by the Regional Manager, or for roads or trails where there are no other practicable options.
4. GWM 1 does not apply to road maintenance, road deactivation or brushing within the right-of-way on existing roads or trails in the WHA, provided these activities are carried out in a manner that will not affect the intent or integrity of the WHA.

5. For GWM 2 the intent of clause (b) is to allow reconstruction or relocation of the Lillooet South FSR (through 2-399 or 2-400) if future flooding or debris torrent (or similar event) on the Lillooet River result in the river channel migrating towards the Lillooet South FSR making such a relocation necessary. The Regional Manager should be provided with reconstruction/relocation engineering plans prior to the commencement of work.
6. For GWM 3 (d) the temporary road to access Block 156 should be deactivated to a non-driveable state as soon as possible after completion of harvesting and planting. This will minimize disturbance to grizzly bears while foraging in this WHA.
7. The intent of GWM 4 is to facilitate pre-authorized boundary exemptions for those WHAs with >30 ha productive forest area provided that MOE is notified prior to the incursion taking place. Examples of incursions include a cut-block, road, trail or landing that overlaps a WHA boundary and: a) that the intent of the WHA boundary was to follow a creek/road and in some areas the boundary extends slightly beyond the creek/road due to a GIS mapping error and creates the overlap; or b) unintentional overlap occurs with an engineered primary forest activity that becomes evident when comparing map scales (e.g. 1:20000 vs 1:5000 often at final design stage); or c) *Forest Act* agreement holders can demonstrate that the block, road, trail or landing are located in a logical location and the incursion does not exceed the amount allowed.

In almost all instances the amount of incursion is anticipated to affect a small area. No replacement area is required when the discrepancy is: a) caused by GIS boundary mapping error since the intent of the WHA has not been altered; or b) the cumulative overlap is <0.5 ha. In other situations, the intended result is that where a boundary amendment is suggested by a *Forest Act* agreement holder and when the reduction is measurable (≥ 0.5 and ≤ 3 ha or <1% measured cumulatively in any WHA), it will result in no net loss to habitat in the WHA. Delineation of equal or better grizzly bear habitat, in quantity and quality, will be required contiguous to the WHA. Any biological assessment to replace habitat should be conducted by a qualified professional with appropriate training and experience for the work being completed. If replacement habitat is required and equal or better habitat is not available contiguous to the WHA in question then the incursion cannot proceed under this GWM.

Boundary amendments meeting the conditions identified in GWM 4 will be periodically reviewed by MoE and the WHA boundary officially amended under the *Government Actions Regulation*. In any instances where the conditions in GWM 4 cannot be met, proposed primary forest activities will require an exemption as outlined under section 2 in this Appendix.

WHAs with <30 ha of productive forest area (i.e. WHA 2-273, 2-276, 2-277, 2-281, 2-282, 2-284, 2-285, 2-286, 2-287, 2-289, 2-290, 2-292, 2-293, 2-294, 2-296, 2-390, 2-392, 2-395, 2-406, 2-437), are excluded from GWM 4 (b)(i) because of potential adverse impacts to the small amount of security cover from an incursion. An exemption request for any incursions in these WHAs should be submitted to the Regional Manager, as

outlined under section 2 in this Appendix.

In addition to reporting incursions to the Regional Manager prior to commencement of timber harvesting or road construction as per GWM 4 (d), it is the proponent's responsibility to keep accurate records of each occurrence. Records must also be made available to a MoE or Ministry of Forests and Range official upon request.

8. Where roads in the WHA are temporary and no longer required, they should be permanently deactivated. Proponents must notify the Regional Manager when deactivation of temporary roads is complete.
9. When reforesting areas within the WHA reduced stocking standards should be used as outlined in the document titled: *Grizzly Bear Habitat in Managed Forests - Silviculture Treatments to Meet Habitat and Timber Objectives*.
10. These GWMs do not apply to persons who must comply with the *Worker's Compensation Act* and the regulations under that Act (e.g. danger tree felling).

SPOTTED OWL -WILDLIFE HABITAT AREAS 2-517 TO 2-525



ORDER – WILDLIFE HABITAT AREAS 2-517 to 2-525

This order is given under the authority of sections 9(2) and 10(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004) (GAR).

1. The Regional Executive Director, South Coast Region, Ministry of Forests, Lands and Natural Resource Operations, being satisfied that
 - i. the following area contains habitat that is necessary to meet the habitat requirements for Spotted Owl (*Strix occidentalis*); and
 - ii. the habitat requires special management that is not otherwise provided for under GAR or another enactment;orders that
 - a) the areas shown in the map set out in the attached Schedule A (2-517 to 2-525) and contained in the wildlife habitat areas (WHAs) spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_WILDLIFE_HABITAT_AREA_POLY) are established as wildlife habitat areas for Spotted Owl (including Long Term Owl Habitat Area (LTOHA), and Managed Future Habitat Area (MFHA) boundaries, as defined in the Feature Notes). The centre point of the line on the attached Schedule A is what establishes the WHAs; and
 - b) if there is a discrepancy between the areas shown in the map set out in the attached Schedule A and the WHA spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_WILDLIFE_HABITAT_AREA_POLY), the areas as detailed in the WHA spatial layer will take precedent.
2. The Regional Executive Director, South Coast Region, Ministry of Forests, Lands and Natural Resource Operations, being satisfied that
 - i. the general wildlife measures (GWMs) described below are necessary to protect and conserve the habitat of Spotted Owl; and
 - ii. GAR or another enactment does not otherwise provide for that protection or conservation;orders that
 - a) the GWMs outlined in Schedule 1 are established for WHAs 2-517 to 2-525
3. Pursuant to section 7(2) of the *Forest Planning and Practices Regulation* a person required to prepare a forest stewardship plan is exempt from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for Spotted Owl in the Sea to Sky District.

4. The GWMs outlined in Schedule 1 do not apply for the purposes of exploration, development and production activities when these activities have been authorized for the purpose of subsurface resource exploration, development or production by the *Mineral Tenure Act, the Coal Act, or the Geothermal Resources Act*.

Definitions:

Words and expressions not defined in this order have the meaning given to them in the *Forest and Range Practices Act* and the regulations made under it, unless context indicates otherwise.

drier ecosystems means the following biogeoclimatic subzones or variants: CWHds1, CWHms1, CWHms2, MHmm2, ESSFmw and IDFww.

large coarse woody debris (CWD) means fallen trees or logs (non self-supporting and a diameter at the small end >7.5cm) at an angle <45 degrees to the ground surface, stumps, or fallen large branches (>20cm in diameter).

large wildlife trees means wildlife trees, in wildlife tree classes 2 through 7-8, that are typically >75 cm dbh in wetter ecosystems; and wildlife trees, in wildlife tree classes 2 through 7-8, that are typically >50 cm dbh in drier ecosystems.

long-term owl habitat area (LTOHA) means the defined areas within a WHA that are to function as current or future Spotted Owl habitat.

managed future habitat area (MFHA) means the defined areas within a WHA that are primarily available for timber harvesting opportunities while retaining structural attributes to maintain options for all or portions of the MFHA to become future Spotted Owl habitat and, if necessary, LTOHA.

nest and critical roost site reserves means a forested and conserved area, normally 80 ha of Spotted Owl habitat, surrounding areas that are known by the Ministry of Environment (MoE) and Ministry of Forests, Lands and Natural Resource Operations (FLNR) and identified by the Director of Resource Management, South Coast Region to be used for nesting and roosting by Spotted Owls, or those areas identified by *Forest Act* agreement holders during the course of conducting timber harvesting and road construction.

net benefit to Spotted Owl habitat means a stand treatment that within 20 years will create or enhance Spotted Owl habitat conditions by improving quality of habitat or accelerating the development of spotted owl habitat attributes.

no net loss of Spotted Owl habitat means that any primary forest activity occurring within LTOHA that causes a temporary or permanent loss of Spotted Owl habitat or habitat attributes associated with Spotted Owl habitat, is mitigated to provide a net benefit to Spotted Owls and Spotted Owl habitat within 20 years.

Spotted Owl habitat is defined in Section 2 of the document *Best Management Practices for Managing Spotted Owl Habitat: A component of the Spotted Owl Management Plan 2, Chilliwack and Squamish Forest Districts* dated July 7, 2009.

total area under prescription (TAUP) means the treatment area, natural non-productive areas (e.g. rocky outcrops, slides, wetlands), wildlife tree retention areas, reserves, and road rights-of-way but excludes the road prism (top of cut bank to toe of fill slope) of existing permanent roads.

treatment area means the area where tree removal occurs including timber extraction corridors and landings, but excludes road rights-of-way, road prisms (top of cut bank to toe of fill slope), natural non-productive areas (e.g. rocky outcrops, slides, wetlands), wildlife tree retention areas and reserves.

uniform forest stands means a forest stand lacking structural diversity where trees are of a similar age and uniform size (height and diameter), with no apparent secondary tree canopy layers.

wetter ecosystems means the following biogeoclimatic subzones or variants: CWHdm, CWHvm1, CWHvm2 and MHmm1.

wildlife tree retention area (WTRA) means areas set aside from treatment that vary in size and distribution and are located to maximize protection of, and/or recruitment of, structural attributes associated with Spotted Owl habitat (e.g. wildlife trees, large trees, large CWD); and to provide for stand level biodiversity and habitat benefits for small mammals, including prey species for Spotted Owls.

Schedule 1 – General Wildlife Measures:

Access, timber harvesting and silviculture

- 1) Do not harvest timber or construct roads within WHA areas designated as long term owl habitat areas (LTOHA) or managed future habitat areas (MFHA) except as provided in GWM 2 through 6.
- 2) GWM 1 does not apply if:
 - a) timber harvesting within the WHAs is necessary to create guyline tiebacks for timber harvesting provided that trees that fall within the LTOHA portion of the WHA boundary are retained on site to function as coarse woody debris;
 - b) timber harvesting is for the purposes of traditional and cultural activities, as authorized under a Free Use Permit; or
 - c) road maintenance, deactivation or brushing in the road rights-of-way is required.
- 3) GWM 1 does not apply where timber harvesting within LTOHA is designed to enhance or create Spotted Owl habitat if:

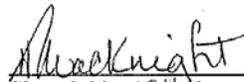
- a) timber harvesting results in a net benefit to Spotted Owl habitat;
 - b) timber harvesting occurs outside of nest and critical roost site reserves;
 - c) a minimum of 10% of the total area under prescription (TAUP) is retained as untreated wildlife tree retention areas (WTRA);
 - d) excluding the area retained in WTRAs as specified in GWM 3(c), no more than 40% of the stand basal area in the rest of the TAUP is harvested; and of the 40% stand basal area removed:
 - i. a minimum of 50% of the basal area is harvested as single stems or as small groups of trees that result in canopy gaps ≤ 50 square metres;
 - ii. no more than 25% of the basal area removed is from timber extraction corridors (e.g. linear features) and the maximum corridor width is 8 m; and
 - iii. no more than 25% of the basal area removed is from groups of trees that would result in canopy gaps between 51 and 300 square metres;
 - e) in drier ecosystems, a minimum average of 275 live trees/ha >30 cm dbh are retained across the treatment area where tree retention density on each hectare of treatment area may vary between 240 to 310 live trees >30 cm dbh;
 - f) in wetter ecosystems, a minimum average of 225 live trees/ha >50 cm dbh are retained across the treatment area where tree retention density on each hectare of treatment area may vary between 200 to 250 live trees >50 cm dbh;
 - g) an average density of 100 large-diameter live trees/ha are retained across the treatment area where large-diameter live tree retention densities per hectare may vary between 50 and 150 trees/ha as follows:
 - i. in non-uniform forest stands, retained large-diameter live trees are selected from the diameter classes representing the 150 largest diameter live trees/ha;
 - ii. in uniform forest stands, retained large-diameter live trees are selected from the dominant and co-dominant canopy layers; and
 - iii. at least 10 large wildlife trees/ha, if present, are retained among the 100 largest diameter live trees/ha; and
 - h) all pre-harvest coarse woody debris is retained.
- 4) GWM 1 does not apply to timber harvesting within WHA areas designated as MFHA if:
- a) timber harvesting occurs outside of nest and critical roost site reserves;
 - b) a minimum of 10% of the TAUP is retained as untreated WTRAs;
 - c) in drier ecosystems, a minimum average of 40 large-diameter live trees/ha are retained across the TAUP as follows:
 - i. in non-uniform forest stands, the retained large-diameter trees are selected from the diameter classes representing the 80 largest diameter live trees/ha;
 - ii. in uniform forest stands, the retained large-diameter trees are selected from the dominant and co-dominant canopy layers;

- iii. the number of trees retained per hectare may vary across the TAUP, however no point within the TAUP should be greater than 40 m from a retained tree;
 - iv. of the 40 large-diameter trees/ha, no more than 40% of those trees within the TAUP are retained within wildlife tree retention areas and other reserves; and
 - v. large-diameter trees are retained as single trees or groups of trees within the TAUP;
- d) in wetter ecosystems, a minimum average of 15 large-diameter live trees/ha are retained across the TAUP as follows:
- i. in non-uniform forest stands, the retained large-diameter trees are selected from the diameter classes representing the 30 largest diameter live trees/ha;
 - ii. in uniform forest stands, the retained large-diameter trees are selected from the dominant and co-dominant canopy layers;
 - iii. the number of trees retained per hectare may vary across the TAUP, however, no point within the TAUP should be greater than 40 m from a retained tree;
 - iv. of the 15 large-diameter trees/ha, no more than 40% of those trees within the TAUP are retained within WTRAs and other reserves; and
 - v. large-diameter trees are retained as single trees or groups of trees within the TAUP;
- e) post-harvest large coarse woody debris is retained over the treatment area to result in:
- i. representative species and sizes of the pre-harvest large coarse woody debris;
 - ii. a minimum average volume of 75 cubic metres/ha of large coarse woody debris; and
 - iii. where pre-harvest Western redcedar large coarse woody debris is present, a minimum average volume of 25 cubic metres/ha of Western redcedar large coarse woody debris if available, or all pre-harvest Western redcedar large coarse woody debris, if the pre-harvest amount available is <25 cubic metres/ha, towards the GWM 4 (e) ii requirement; and
- f) early successional conifer species that are ecologically suitable for the site are planted with consideration for variable density planting.
- 5) GWM 1 does not apply to road construction within the WHA if:
- a) road construction activities occur outside of nest and critical roost site reserves;
 - b) there is no other practicable option for road construction in the LTOHA and the negative impacts of clearing road rights-of-way are offset so that there is no net loss to Spotted Owl habitat; and
 - c) road rights-of-way clearing widths within the LTOHA do not exceed the minimum clearing widths established under FPPR section 78.

- 6) GWM 1 does not apply to salvage in the MFHA if salvage activities:
- a) occur outside of nest and critical roost site reserves; and
 - b) follow the requirements in GWM 4(a) through (e).

Pesticides

- 7) Do not use pesticides in LTOHA, except for:
- a) the use of *Bacillus thuringiensis var kurstaki* for the control of western spruce budworm;
 - b) the use of beetle pheromones for the control of bark beetles; and
 - c) the application of herbicides for control of invasive plants or noxious weeds.



Signed this 18th day of February, 2013

Heather MacKnight, Regional Executive Director, South Coast Region
Ministry of Forests, Lands and Natural Resource Operations

Appendix 1:

The following information is provided by FLNR and MoE as background information and support to the order establishing Spotted Owl WHAs 2-517 to 2-525. This appendix is not part of the order.

1. These GWMs do not apply to persons that must comply with the *Workers Compensation Act* and the regulations made under that Act (e.g. OH&S Regulation Part 26). Where a GWM cannot be achieved due to a safety concern, a person should consider developing a rationale related to the safety issue. Consistent with section 2(3) of the *Forest Planning and Practices Regulation*, exemptions from these GWMs are not required to meet safety requirements. In situations where exercising the safety concern may be common and affect a substantial part of the cut-block (e.g. certain cable yarding situations, or meeting inter-tree spacing requirements in GWM 4 c(iii) and 4 d(iii)), it has the potential to significantly affect the over-riding objective of the Spotted Owl Management Plan, particularly maintaining structural attributes in the MFHA. In these cases, agreement holders should consider increasing retention in other portions of the cut-block or consider clustering of trees as a means of offsetting the lost retention from the safety affected area. This will help to ensure that the objective for MFHA in the Spotted Owl Management Plan is achieved at the broader scale.
2. **Activities to which the order does not apply:** Section 2(2) of the *Government Actions Regulation* states
An order under any of sections 5 to 15 does not apply in respect of
 - (a) any of the following entered into before the order takes effect:
 - (i) a cutting permit;
 - (ii) a road permit;
 - (iii) a timber sale licence that does not provide for cutting permits;
 - (iv) a forestry licence to cut issued by a timber sales manager under section 47.6 (3) of the *Forest Act*;
 - (v) subject to subsection (3), a minor tenure,
 - (b) a declared area,
 - (c) areas described in section 196 (1) of the Act, and
 - (d) areas referred to in section 110 of the *Forest Planning and Practices Regulation*.
3. *Forest Act* agreement holders should be familiar with the document *Best Management Practices for Managing Spotted Owl Habitat: A component of the Spotted Owl Management Plan 2, Chilliwack and Squamish Forest Districts* dated July 7, 2009. This document was developed by the Best Management Practices Working Group and contains recommendations that are not directly reflected in this order, yet are still considered important for managing Spotted Owl habitat and should be considered by professionals when proposing activities in Spotted Owl WHAs. The document may be updated from time to time. Where a discrepancy exists between the BMPs and the GWMs, the latter takes precedence.

The document is available here:

<http://www.for.gov.bc.ca/ftp/DCK/external!/publish/SOMP/>

4. Authority to consider an exemption from these GWMs is provided in Section 92(1) of the *Forest Planning and Practices Regulation* and section 79(1) of the *Woodlot License Planning and Practices Regulation*. An exemption may be provided if the Minister's delegate is satisfied that the intent of the GWM will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the Minister's delegate with a rationale describing the nature of the problem and options to integrate owl habitat conservation with proposed forest and/or range practices. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be handled within 14 calendar days of arrival at the FLNR Regional office. Incomplete packages will be returned to the proponent for resubmission. A template for exemption requests is available at:
<http://www.env.gov.bc.ca/wld/frpa/index.html>

For GWM 1, exemptions would generally be considered when the proposed activities continue to meet the intent of the Spotted Owl Management Plan, as determined by the FLNR.

5. For the definition of large wildlife trees (as used in GWM 3(g)(iii)): see Figure 2 (classes 2 through 7-8) in *Best Management Practices for Managing Spotted Owl Habitat: A component of the Spotted Owl Management Plan 2, Chilliwack and Squamish Forest Districts* dated July 7, 2009.
6. For the LTOHA definition: The management goal is to achieve 100% Spotted Owl habitat conditions by conserving existing Spotted Owl habitats (e.g. old forests) and creating additional Spotted Owl habitats or enhancing habitat (e.g. in younger forests) to improve quality for foraging and/or nesting. Forestry activities within the LTOHA are only permitted with the purpose of enhancing and creating Spotted Owl habitat or protecting Spotted Owl habitat from catastrophic loss.
7. For the MFHA definition: The management goal is to allow for timber harvesting with the retention of structural attributes such as large diameter trees, snags, and large coarse woody debris to enable future recruitment as Spotted Owl habitat. The attributes retained are not normally present (in quality and quantity) in stands managed for timber on "normal" 60-100 year rotations. See also the section on MFHA in *Best Management Practices for Managing Spotted Owl Habitat: A component of the Spotted Owl Management Plan 2, Chilliwack and Squamish Forest Districts* dated July 7, 2009.

8. The intent of GWM 3(b), 4(a), 5(a) and 6(a) is that *Forest Act* agreement holders contact the FLNR or MoE for locations of known nest and critical roost site reserves prior to the commencement of activities. In some cases agreement holders may, during the course of conducting timber harvesting and road construction, identify a nest or critical roost site; and if this occurs they should provide that information to the Director of Resource Management, South Coast Region. It must be noted that since these sites represent a 'sensitive occurrence' (masked by the BC Conservation Data Centre (CDC)) they are protected from being distributed to the public. Proponents required to know of these locations may have to enter into a Confidentiality Agreement with MoE (and the BC CDC) before the location will be provided. There are times when the information will not be released because a planned activity will fall outside the critical nest or roost site, but this will be determined by the CDC upon reviewing the activity.
9. In GWM 3(g)(i) and (ii) and 4(c)(i) and (ii) and 4(d)(i) and (ii), retained trees should include any veteran trees present, and any trees exhibiting valuable habitat characteristics such as large, clustered or gnarled branches, or horizontal thickly moss-covered branches (e.g. wildlife trees from class 1). In uniform stands, preference should also be given to retain more windfirm species, such as Douglas-fir and Western redcedar, where options exist. When determining large tree retention in GWM 4(c) and 4(d), the intent is to refer to individual type stand tables (rather than block tables), which should provide a more accurate reflection of the stand conditions and are ecologically more defensible.
10. In GWM 3(e), 3(f), 4(c) and 4(d), tree retention in general should consider:
 - a) on dry sites, Douglas-fir trees are very windfirm;
 - b) on wet sites, Western redcedar trees are considered to be more windfirm than hemlock and balsam fir because of crown characteristics and rooting habits;
 - c) stem taper may be an important factor affecting susceptibility to stem breakage;
 - d) the height-to-diameter ratio of dominant trees in even-aged stands has been found to be a good indicator of risk of stem breakage;
 - e) crown class alone is not a reliable predictor of windthrow hazard. There is some evidence to suggest that dominant, codominant, and veteran trees are less susceptible to windthrow than the intermediate and suppressed crown classes if they have been exposed to wind for a long time;
 - f) more information is available in the Windthrow Handbook for BC Forests, available here: <http://www.for.gov.bc.ca/hfd/pubs/Docs/Wp/Wp01.htm>
 - g) that some post harvest stem breakage and windthrow is expected and acceptable since it will help create wildlife trees and coarse woody debris.
11. The intent of GWM 3 (h) is that pre-harvest coarse woody debris is retained on site as distributed across the treatment area; and it will not be assessed as waste as defined in the *Provincial Logging Residue and Waste Measurement Procedures Manual* (Waste Manual). Coarse woody debris piled at roadside or landings has limited ecological value. There is also an expectation that when harvest occurs to

create or enhance LTOHA that post-harvest large CWD will be recruited and distributed throughout the treatment area (e.g. particularly in stands with <75 m³/ha). It is important that the forest professional understands that retention of post-harvest large CWD in long-term spotted owl habitat will not form the grounds for classification as unavoidable waste as defined in the Waste Manual. All post-harvest large CWD will be subject to measurement and classification according to the methods outlined in the Waste Manual.

12. The intent of GWM 4 (e)(ii) and (iii) is to:

- a) improve the potential for restoring superior owl habitat through retention of large CWD that has a high component of fallen trees or logs >75cm in diameter and >5m in length in the wetter ecosystems; and a high component of fallen trees or logs >50cm in diameter and >5m in length in the drier ecosystems.
- b) distribute large CWD throughout the treatment area as single pieces and/or small piles, using a variety of large CWD materials (e.g. fallen trees, logs, and large branches rather than just large branches). Logs should be processed at the stump so that large CWD can be left throughout the stand to avoid concentrating CWD accumulations at landings and roadsides.
- c) not use fresh cut stumps to meet large CWD requirements where there are large fallen trees and other sources available. Fresh stumps should only be needed to meet the CWD requirements in second growth stands where alternate sources of large CWD are limited. Ideally, fresh stumps should only form a small portion of large CWD requirements.
- d) follow best management practices on page 18 section 4.3 of the Best Management Practices document.
- e) it should be understood that if large CWD is also comprised of merchantable timber (meaning logs, timber and woody material that meets the Coast Timber Merchantability Specifications) it may be subject to waste billing under the Waste Manual. It is important that the forest professional understands that retention of large CWD in managed future spotted owl habitat will not form the grounds for classification as unavoidable waste as defined in the Waste Manual. All large CWD will be subject to measurement and classification according to the methods outlined in the Waste Manual. The intent of the GWM is to leave existing CWD while adding to it with low grade and non-merchantable material (meaning logs, timber and woody material that does not meet the Coast Timber Merchantability Specifications) such that minimum average levels are achieved. As mentioned in Appendix clause 12 (a), large and long piece sizes should be considered. Where it is estimated that required levels of large CWD may not exist or pre-harvest merchantable timber must be retained (e.g. to meet the Cw requirement) it is incumbent on the forest professional to undertake surveys to establish the levels and to develop a plan for recruitment of large CWD that addresses the billable waste issues. This may include marking of large CWD pieces for retention.

13. The intent of GWM 5 (b) is that offsets to the negative impacts of clearing road rights-of-way must be acceptable to the Director of Resource Management, South Coast Region.
14. The intent of GWM 6 is to enable minor and major salvage in only the MFHA when it meets the conditions of this GWM. If a disturbance event (e.g. windthrow, fire, or forest health etc) occurs in treated MFHA which does not meet the conditions of this GWM, an exemption is required. Major salvage (operations that recover >100 cubic metres of forest products) within the LTOHA will only be considered on a site by site basis where damage within the LTOHA exceeds 30% of the stand volume; or where a natural disturbance caused by insects, disease, wildfire, windthrow or other catastrophic event results in degradation to the suitability of Spotted Owl habitat. Salvage proposals in the LTOHA will require an exemption. Proponents should not expect that all salvage applications in the LTOHA will be approved. It is not government's intention to accept repeated salvage requests over the same or similar area. Minor salvage (operations that recover <100 cubic metres of forest products) is not permitted in the LTOHA.
15. The 2012 Spotted Owl Management Plan acknowledges the need for adaptive management. It is expected that the Best Management Practices document will need to adapt as the practices are implemented and tested, and as new information becomes available. For more on adaptive management please refer to section 7 of *Best Management Practices for Managing Spotted Owl Habitat: A component of the Spotted Owl Management Plan 2, Chilliwack and Squamish Forest Districts* dated July 7, 2009; and to the Forest Practices Branch website: <http://www.for.gov.bc.ca/HFP/archives/amhome/AMDEFS.HTM>.

Where adaptive management is being considered for implementation at an operational scale, and differs from requirements in this order, the adaptive management proposal (that follows the 6 step process outlined in the above website) should be submitted as an exemption request. To acknowledge successful results from the adaptive management process, this order may be periodically updated.

16. Where an established WHA is subject to the operations of multiple *Forest Act* agreement holders, which may include areas under timber licence, woodlot licence, and First Nations woodlands licence, cooperation between licence holders should occur in order to ensure compliance with the GWMs established by this order.

NOTICE - SURVIVAL OF SPECIES AT RISK



December 30, 2004

**NOTICE – INDICATORS OF THE AMOUNT, DISTRIBUTION AND ATTRIBUTES OF
WILDLIFE HABITAT REQUIRED FOR THE SURVIVAL OF SPECIES AT RISK IN
THE SQUAMISH FOREST DISTRICT**

This Notice is given under the authority of section 7(2) of the *Forest Planning and Practices Regulation* (B.C. Reg. 14/04) and 9(3) of the *Woodlot Licence Planning and Practices Regulation* (B.C. Reg. 21/04).

The following Notice includes indicators of the amount, distribution and attributes of wildlife habitat required for the survival of the species at risk outlined in Schedule 1.

Approved Wildlife Habitat Areas are not included in the indicators of amount, distribution and attributes for each of the species outlined in Schedule 1. As per section 7(3) of the *Forest Planning and Practices Regulation*, forest tenure holders are exempt from the obligation to specify a result or strategy in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation*, for approved Wildlife Habitat Areas.

This Notice applies to the Squamish Forest District.

Schedule 1

1) Marbled Murrelet (*Brachyramphus marmoratus*)

Amount:

1. An amount equal to the total amount of currently suitable nesting habitat in the non-contributing landbase. Government policy for determining the amount of suitable nesting habitat is provided in the species account for Marbled Murrelet in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004);
2. An amount of suitable Marbled Murrelet nesting habitat within Old Growth Management Areas consistent with the direction from landscape unit planning; and
3. An amount of suitable nesting habitat to a maximum net mature timber harvesting landbase impact of 415 ha.

Distribution:

1. The amount of habitat referenced above must be distributed to provide:
 - areas of suitable nesting habitat of the size and spatial distribution identified in the species account for Marbled Murrelet in the *Accounts and Measures for*

Managing Identified Wildlife (Identified Wildlife Management Strategy Version 2004).

- The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Marbled Murrelet in the *Accounts and Measures for Managing Identified Wildlife* in the Identified Wildlife Management Strategy Version 2004.

Attributes:

Species:
Marbled murrelet

Attribute	Characteristics
Size	Maintain a balanced range of patch sizes including a mix of large (>200 ha), medium (50-200 ha) and small (<50 ha) patches within managed forests. The area should include vertical canopy complexity,
Tree Features	Large branches or branches with deformities, and presence of mossy platforms
Tree Species	It is unlikely that Marbled murrelets select particular tree species, however certain species are more likely to provide large horizontal platforms suitable for nesting. This includes yellow cedar, western hemlock, Sitka spruce, Douglas-fir and western red cedar. Less likely species include mountain hemlock and amabilis fir.
Nesting Habitat Features	Suitable nesting habitat includes old seral stage coniferous forests, providing large trees with platforms (limbs or deformities >15cm diameter) with variable canopy structure and small gaps in the canopy. Readily nest on steep slopes but is not essential if forest canopies are non-uniform.
Tree Size	Most nesting trees in BC are >200 yr. Nest trees are typically >40 m tall and nest heights are typically >30 m. Nest limbs range in size from 15-74 cm diameter.
Structural Stage	7: old forest (>250 yr - age class 9, but 8 is acceptable if older forest is not present and the age class 8 provides platform limbs and other nest attributes).
Additional information	Table 3 of the IWMS Version 2004 species account for Marbled Murrelet provides detailed information about the habitat features that are associated with most likely, moderately likely and least likely habitat within each of the Marbled Murrelet Conservation regions.

2) Grizzly Bear (*Ursus arctos*)

Amount:

- 7280 ha with an impact to the mature timber harvesting landbase of approximately 385 ha.

Distribution:

- The amount of habitat referenced above must be distributed in the Soo Timber Supply Area to provide:

- areas of suitable foraging and security habitat of the size and spatial distribution identified in the species account for Grizzly Bear in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).
2. The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Grizzly Bear in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).

Attributes:

**Species:
Grizzly Bear**

Attribute	Characteristics
Size	1-500 ha, depending on the area of use, extent of seasonal habitat and buffer size required.
Critical patch habitats	Critical patch habitats include, estuaries, rich non-forested fens, the edges of forested and non-forested bogs, herb-dominated patches on avalanche chutes with adjacent forest (particularly south-facing ones), herb-dominated subalpine parkland meadows, skunk cabbage swamps, floodplain ecosystems, white bark pine forage areas, and areas where bears fish for spawning salmon. Den cavities and surrounding stands are also considered critical. Non-forested critical habitats include a core area and buffer of forested cover. Forested critical habitats are not buffered.
Denning Habitat Features	Hibernating habitats tend to be high elevation areas that are sloped with dry, stable soil conditions that remain frozen throughout the winter. Dens are typically located on steep north-facing slopes, areas where vegetation will stabilize the den roof and where snow will accumulate for insulation. Dens are rarely re-used but Grizzly bears will often return to the same vicinity to dig new dens.
Foraging Habitat Features	Habitat selection is strongly influenced by meeting nutritional requirements, access to mates, thermal cover (i.e., dens), social interactions and the presence and activities of people. Habitat requirement vary greatly as some bears are more transient while others are more resident. Both residents and transients select patches or complexes of habitats within landscapes.
Structural Stage	Generally, foraging is more abundant in non-forested sites, sites with partial forest or sites with many tree gaps in older forest. Closed forest sites near quality habitat may be used for security and day bedding areas. Many or all structural stages can be used seasonally or for specific needs and as such, forage type is not necessarily tied to one particular structural stage.
Elevation	All elevations from sea level estuaries to high alpine meadows and talus slopes.

3) Coastal Tailed Frog (*Ascaphus truei*)

Amount:

1. 40 ha not exceeding an impact to the mature timber harvesting landbase of 25 ha.

Distribution:

1. The amount of habitat referenced above must be distributed to provide:
 - areas of suitable habitat of the size and spatial distribution identified in the species account for Coastal Tailed Frog in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).
2. The areas described above are located within occupied streams in the biogeoclimatic units and preferred elevations identified in the species account for Coastal Tailed Frog in the *Accounts and Measures for Managing Identified Wildlife* in the Identified Wildlife Management Strategy Version 2004.

Attributes:

**Species:
Coastal Tailed
Frog**

Attribute	Characteristics
Size	Approximately 20 ha (depending on number and length of suitable stream reaches). Larger areas may be appropriate in watersheds with unstable terrain (class 4-5). Areas should include at least two streams or stream reaches (i.e., S4 to S6) with previous detections of tailed frogs. The area should include a 30 m core area buffered by a 20m management zone on both sides of occupied stream reaches.
Habitat Attributes	Tailed frog aquatic habitats are generally characterised by year round flow, non fish bearing (S4-S6), intermediate gradient (>2.5%), coarse substrates (>6.4 cm), stable channel beds and forest cover (generally associated with structural stage S6 or S7). Retain 100% of forest cover within the core area. Within the management zone maintain 70% basal area with appropriate structure to maintain riparian forest, important structural elements (e.g., coarse wood debris,) water quality and temperature (5 to 18 degrees), and naturally dispersed water flows.
Elevation	From sea level to 2140 m.

4) Spotted Owl (*Strix occidentalis*)

Amount:

An amount of area consistent with the area contained within Special Resource Management Zone and Matrix Activity Centre boundaries in the Squamish Forest District as identified in the 1997 *Spotted Owl Management Plan*.

Distribution:

The amount referenced above must be distributed consistent with Special Resource Management Zones and Matrix Activity Centres boundaries in the Squamish Forest District as identified in the 1997 *Spotted Owl Management Plan*.

Attributes:

Attributes consistent with those identified for Long Term Activity Centres (LTACs) in the 1999 *Spotted Owl Management Plan – Resource Management Plans* and attributes consistent with

those identified for Matrix Activity Centres in the 1997 *Spotted Owl Management Plan* for the Squamish Forest District.

LAND USE OBJECTIVES FOR THE SEA TO SKY LRMP

Ministry of Forests, Lands and Natural Resource Operations

Ministerial Order

Land Use Objectives for the Sea-to-Sky Land and Resource Management Plan

Part 1 - Interpretation

1. Relationship with *Forest and Range Practices Act*

- (1) Pursuant to section 93.4 of the *Land Act*, the following objectives are established as land use objectives for the purposes of the *Forest and Range Practices Act*, and apply to the area shown on Map 1.
- (2) This ministerial order establishes land use objectives in accordance with section 93.4 of the *Land Act*, and nothing in, under or arising out of this ministerial order abrogates or derogates from any aboriginal rights, aboriginal title or treaty rights of any applicable First Nation and does not relieve the Province of any obligation to consult with First Nations.

2. Definitions

- (1) In this order:

“cultural heritage resources” means:

- a) trees, wild plant foods, botanical medicines and other forest resources, including wildlife, that are utilized by a First Nation for food, social, treaty or ceremonial purposes; and
- b) culturally modified trees and other historical and archaeological artefacts, sites and locations that are important to the cultural practices, knowledge, spirituality and heritage of a First Nation;

“cultural management areas” means areas identified by First Nations as having historic and contemporary cultural significance to them and for which management direction is provided in the Sea-to-Sky LRMP and government-to-government agreements. The locations of the cultural

management areas referred to in this order are shown on Map 2 and are comprised of:

- the In-SHUCK-ch Nation cultural management area;
- the Lil'wat Nation cultural management areas; and
- the Squamish Nation special cultural management areas;

“cultural places” means places identified by First Nations as having cultural heritage resource values of importance to them and for which management direction is provided in the Sea-to-Sky LRMP and government-to-government agreements. The locations of the cultural places referred to in this order are shown on Map 3 and are comprised of:

- the In-SHUCK-ch Nation cultural sites;
- the Lil'wat Nation A7x7ŭlrñecw (spirited ground) areas and the Skelulátkwa / Owl Creek cultural education area;
- the Squamish Nation Sŭiyamŭn ta Skŭwŭwú7mesh (cultural sites) and Úŭwumixw (village sites); and
- the Lil'wat Nation “Old Growth and Sensitive Areas”;

“floodplain management areas” means the Crown Land portions of the floodplains of the Upper Lillooet, Green, Soo, Elaho and Squamish Rivers shown on Map 4;

“forested area” means those treed stands identified in the Vegetation Resource Inventory (VRI) with ages greater than age class 2 and with the primary species component as a coniferous tree species, or with the primary species component as a deciduous tree species and the secondary component as a coniferous tree species.

“herbicide” means a substance used to destroy or inhibit the growth of plants;

“mature forest” means stands 80 years or older in the Coastal Western Hemlock (CWH) biogeoclimatic zone and 100 years or older in the Interior Douglas Fir (IDF) biogeoclimatic zone;

“old growth forest” means a stand of trees 250 years or older in the Coastal Western Hemlock and Interior Douglas Fir biogeoclimatic zones;

“pesticide” means a substance used to repel, kill, or control any species considered to be a pest, including weeds, insects, rodents, fungi, bacteria, or other organisms and includes herbicides, insecticides, rodenticides, fungicides, and bactericides;

“riparian areas” means areas of land that have conservation values because of their proximity to water and their ability to support plant and animal species that are distinctly different from the adjacent upland areas.

- (2) Words and expressions not defined in this order have the meaning given to them in the *Forest and Range Practices Act*, the *Forest Act*, the *Heritage Conservation Act*, the *Range Act* and the regulations made there under, unless the context indicates otherwise.
- (3) Where an objective refers to an area shown both on a map and in a spatial dataset linked to the map, the boundaries of the area defined by the spatial dataset are to apply in the event of any inconsistency. The spatial datasets that apply to this order are available for download by going to the Legal Planning Objectives theme on the GeoBC Data Discovery Service at:
<https://apps.gov.bc.ca/pub/geometadata/metadataDetail.do?recordUID=55383&recordSet=ISO191155>
- (4) The descriptive headings used in this order are for convenience only and do not limit or enlarge the meaning of any of the objectives.

Part 2 - First Nations’ Cultural Places and Cultural Management Areas

3. Objectives for First Nations’ cultural places

- (1) Protect the cultural heritage resources within the cultural places listed in Schedule 1 and shown on Map 3, to support First Nations’ food, social, ceremonial and spiritual use of the forest.
- (2) Maintain 100% of the forested area in the following cultural places:
 - a. Zone 2 of the In-SHUCK-ch mountain special management area shown on Map 5;
 - b. Category A Lil’wat Nation A7x7ŭlrñecw (spirited ground) areas shown on Map 6;
 - c. Portions of Category B Lil’wat Nation A7x7ŭlrñecw (spirited ground) areas within floodplain management areas as shown on Map 7;
 - d. Squamish Nation Sīiyamín ta Skw̓wú7mesh (cultural sites) shown on Map 8;
 - e. Core areas within Squamish Nation Úxwumixw (village sites) shown on Map 8; and
 - f. Lil’wat Nation Q’em’sám (Old Growth and Sensitive Area) shown on Map 12.

- (3) Despite subsection 3 (2), timber harvesting may occur in the cultural places described in subsection 3 (2) to:
 - a. maintain forest health within the cultural places and adjacent forests;
 - b. address road maintenance activities within the cultural places; and to
 - c. eliminate a safety hazard.

4. Objectives for First Nations' cultural management areas

- (1) Conserve cultural heritage resources within the Lower Lillooet, Upper Soo, Qwalímak / Birkenhead River, Cheakamus, Callaghan, Kákila, Upper Elaho, Nexw Áyantsut / Sims Creek and the Estétiwih / Westside Squamish River cultural management areas shown on Map 2.
- (2) Maintain opportunities for First Nations to practice traditional harvesting for food, social, ceremonial and spiritual purposes in the cultural management areas.
- (3) Maintain 100% of the old growth forest in the Upper Elaho cultural management area shown on Map 2.
- (4) Protect riparian area and cultural heritage resource values in the Qwalímak / Birkenhead River corridor area shown on Map 9 by:
 - a. limiting forest harvesting to stands that were less than 40 years of age as of March 2008; and by
 - b. using alternatives to pesticide and herbicide applications in this area, where practicable.
- (5) Despite subsection 4 (4) a., timber harvesting may occur in the Qwalímak / Birkenhead River corridor described in section 4 (4) to:
 - a. maintain forest health within the corridor and adjacent forests;
 - b. address road maintenance activities within the corridor; and to
 - c. eliminate a safety hazard.

Part 3 - Floodplains and Riparian Areas

5. Objectives for floodplain management areas

- (1) Maintain the functional integrity of the floodplain ecosystems within each of the five floodplain management areas shown on Map 4 by:
 - a. limiting the total area available for timber harvesting to a maximum of 20% of each floodplain management area over a rotation; and

- b. retaining a fully representative suite of forest types, plant communities and wildlife habitats within each floodplain management area, where practicable.
- (2) Maintain 100% of the forested area in the portion of the Squamish River floodplain management area that is situated on the west side of the Squamish River as shown on Map 10.
 - (3) Despite subsection 5 (2), timber harvesting may occur in the portion of the Squamish River floodplain management area situated on the west side of the Squamish River as described in section 5 (2) to:
 - a. maintain forest health in the area and adjacent forests;
 - b. address road maintenance activities within the area; and to
 - c. eliminate a safety hazard.

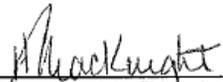
6. Objectives for riparian areas

- (1) Maintain at least 70% of the forested area, as a combination of mature forest and old growth forest, within the Upper Lillooet River riparian area shown on Map 11.
- (2) Maintain at least 70% of the forested area, as a combination of mature forest and old growth forest, within a minimum 100 meter riparian buffer area around Lillooet Lake.
- (3) Protect riparian area values within the 100 meter riparian buffer area around Lillooet Lake by using alternatives to pesticide and herbicide applications in this area, where practicable.

Part 4 - Transition

7. Application of this order

- (1) This order and the land use objectives in this order take effect on the date that notice of this order is published in the Gazette.
- (2) The applicable period under section 8(2)(b) of the *Forest and Range Practices Act* is 12 months starting on the date this order comes into effect as specified in subsection 7(1).



Heather MacKnight
Regional Executive Director, South Coast Region
Regional Operations
Ministry of Forests, Lands and Natural Resource Operations

August 13, 2013
Date

Ministry of Forests, Lands and Natural Resource Operations

Ministerial Order

SEA TO SKY LAND AND RESOURCE MANAGEMENT PLAN

**ADDING THE DEFINITION OF FORESTED AREA AND AMENDING THE OBJECTIVES FOR FIRST NATIONS
CULTURAL PLACES**

Preamble

WHEREAS the purpose of this order is to facilitate the implementation of the Sea to Sky Land and Resource Management Plan ("the LRMP") in the context of ongoing operational activities,

AND WHEREAS the Land Use Planning Agreement between the Lil'wat Nation and the Province of British Columbia, signed April 11, 2008, enables designation of additional lands to protect 'Old Growth and Sensitive Ecosystems',

THEREFORE, pursuant to section 93.4 of the *Land Act*, I, Heather MacKnight, Regional Executive Director of the South Coast Region of the Ministry of Forests, Lands and Natural Resource Operations hereby make the amendments set out in the attached Schedule.

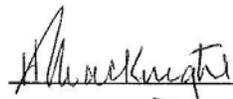
Schedule

1. Pursuant to Section 93.4 of the *Land Act* this order amends the Order dated April 4, 2011, titled "Land Use Objectives for the Sea-to-Sky Land and Resource Management Plan" (the original order), which was signed by Heather MacKnight, Regional Executive Director, Ministry of Forests, Lands and Natural Resource Operations.

The Original Order is amended as follows:

2. The Definitions (Section 2) of the original order is amended by:
 - a. Amending the definition for "Cultural Places" of the original order by adding the following bullet:
 - The Lil'wat Nation "Old Growth and Sensitive Areas"
 - b. Adding the following definition:

"Forested Area" means those treed stands identified in the Vegetation Resource Inventory (VRI) with ages greater than age class 2 and with the primary species component as a coniferous tree species, or with the primary species component as a deciduous tree species and the secondary component as a coniferous tree species.
3. The Objectives for First Nations Cultural Places (Section 3) of the original order is amended by:
 - a. Amending Subsection (2) "Maintain 100% of the forested area in the following cultural places" by adding the following:
 - Lil'wat Nation Q'em'sám (Old Growth and Sensitive Area) shown on Map 12
4. Maps attached to the original order are amended by:
 - a. Amending Map 3: First Nations Cultural Places by adding an icon representing the Lil'wat Nation Q'em'sám (Old Growth and Sensitive Area).
 - b. Addition of Map 12 showing in detail the Lil'wat Nation Q'em'sám (Old Growth and Sensitive Area).
5. This order comes into effect when notice of this order is posted in the Gazette.



Heather MacKnight, Regional Executive Director

Ministry of Forests, Lands and Natural Resource Operations

August 13, 2013
Date

APPENDIX E - RECREATION ORDERS

Dec 3'105

Recreation Trails (designated various times)	Recreation Sites (designated various times)	Interpretive Forests
<ul style="list-style-type: none"> <input type="checkbox"/> Meager Cr. Hotsprings <input type="checkbox"/> Barkley Cr <input type="checkbox"/> Tenquille Lake. (Branch 12) <input type="checkbox"/> Tenquille Lake <input type="checkbox"/> Rainbow-Madeley <input type="checkbox"/> Mid Altitude <input type="checkbox"/> Cal Cheak/Brandywine <input type="checkbox"/> Brandywine Meadows <input type="checkbox"/> Petgill Lake <input type="checkbox"/> Rutherford Snowmobile <input type="checkbox"/> Deeks Cr. <input type="checkbox"/> Magnesia/Harvey Creeks <input type="checkbox"/> Owl Lakes Chain UREP* <input type="checkbox"/> Peanuts* <input type="checkbox"/> Barkley Valley* <input type="checkbox"/> Deminger Trail (TFL 38)* <input type="checkbox"/> Elaho Giant (TFL 38)* <input type="checkbox"/> Cal Cheak Kayak Pull-out* <input type="checkbox"/> Lizzie Lake* <input type="checkbox"/> Tenquille to Owl* <input type="checkbox"/> Brandywine Snowmobile* 	<ul style="list-style-type: none"> <input type="checkbox"/> Meager Lake <input type="checkbox"/> Showh Lake <input type="checkbox"/> Soo River <input type="checkbox"/> Soo River Falls <input type="checkbox"/> Norton Lake <input type="checkbox"/> Madeley Lake <input type="checkbox"/> Meager Cr. Hot-springs <input type="checkbox"/> Alexander Falls <input type="checkbox"/> Brohm Lake <input type="checkbox"/> Echo Lake <input type="checkbox"/> Tenquille Lake <input type="checkbox"/> Molson Memorial Picnic Site (TFL 38)* <input type="checkbox"/> Hideaway (TFL 38)* <input type="checkbox"/> Riverside (TFL 38)* <input type="checkbox"/> Driftwood Bay* <input type="checkbox"/> Lizzie Bay* <input type="checkbox"/> Strawberry Point* <input type="checkbox"/> Lizzie Lake* <input type="checkbox"/> Owl Cr.* <input type="checkbox"/> Spetch Cr.* <input type="checkbox"/> Twin One* <input type="checkbox"/> Upper Lillooet* <input type="checkbox"/> Sloquet Hot-springs* <input type="checkbox"/> Cat Lake* <input type="checkbox"/> Mosquito Lake* <input type="checkbox"/> Blackwater Lake* <input type="checkbox"/> Whiskey Lake* 	<ul style="list-style-type: none"> <input type="checkbox"/> Whistler <input type="checkbox"/> Brohm Lake* <input type="checkbox"/> Shadow Lake*

* Denotes that there are no established objectives for the features identified.

2.8.3 Land-use objectives

No land use objectives are in place that relate to recreation resources.

**Order to Establish Objectives
for Recreation Trails
in the Squamish Forest District**

File: 16660-04

Notice is hereby given that, pursuant to Section 6(3) of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites and recreation trails are to be established effective *December 14, 2000*:

Mid-Altitude Recreation Trail, Project (16660-20/6408)

The objectives are to manage the Mid-Altitude recreation trail for a non motorized recreation experience year round. Provide opportunities for backpacking, hiking, ski touring, and heli-skiing. Any mountain biking should be on trails below the alpine. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Tenquille Lake (Branch 12) Recreation Trail, Project (16660-20/6131)

The objectives are to manage the Tenquille Lake (Branch 12) recreation trail for a multi-use recreation experience year round. Provide opportunities fishing, hiking, ski mountaineering and snowmobiling. Manage for mountain biking and horseback riding except where prohibited. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Paul Kuster
District Manager, Squamish Forest District

Date

**Order to Establish Objectives
for Recreation Trails
in the Squamish Forest District**

File: 16660-04

Notice is hereby given that, pursuant to Section 6(3) of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites and recreation trails are to be established effective *December 14, 2000*:

Pergill Lake Recreation Trail, Project (16660-20/6130)

F. Howe
The objectives are to manage the Pergill Lake recreation trail for a multi-use recreation experience year round. Provide opportunities for mountain biking, trials bike riding, hiking, backpacking, and access to the alpine for the mountaineering and alpine rock climbing club. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Rutherford Snowmobile Recreation Trail, Project (16660-20/6048)

The objectives are to manage the Rutherford Snowmobile recreation trail for a multi-use recreation experience year round. Provide opportunities fishing, berry picking, picnicking, and snowmobiling. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Brandywine Meadows Recreation Trail, Project (16660-20/3215)

Call
The objectives are to manage the Brandywine Meadows recreation trail for a non-motorized recreation experience in the summer, and a motorized recreation experience in the winter. Provide opportunities for hiking, sightseeing, camping, and snowmobiling. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Paul Kuster
District Manager, Squamish Forest District

Date

**Order to Establish Objectives
for Recreation Trails
in the Squamish Forest District**

File: 16660-04

Notice is hereby given that, pursuant to Section 6(3) of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites and recreation trails are to be established effective *December 14, 2000*:

Cal Cheak Brandywine Recreation Trail, Project (16660-20/3218)

Whistle

The objectives are to manage the Peigill Lake recreation trail for a non motorized recreation experience year round. Provide opportunities for fishing, hiking, and sightseeing. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Tenquille Lake Recreation Trail, Project (16660-20/3217)

The objectives are to manage the Tenquille Lake recreation trail for a multi-use recreation experience year round. Provide opportunities fishing, hiking, ski mountaineering and snowmobiling. Manage for mountain biking and horseback riding except where prohibited. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Rainbow-Madeley Recreation Trail, Project (16660-20/6125)

Call

The objectives are to manage the Rainbow-Madeley recreation trail for a non-motorized recreation experience in the summer, and a motorized recreation experience in the winter. Provide opportunities for hiking, camping, and snowmobiling. Opportunities for mountain biking only in the lower alpine. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Paul Kuster
District Manager, Squamish Forest District

Date

**Order to Establish Objectives
for Recreation Sites
in the Squamish Forest District**

File: 16660-04

Notice is hereby given that, pursuant to Section 6(3) of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites and recreation trails are to be established effective *December 14, 2000*.

Madeley Lake Recreation Site, Project (16660-20/3185)

Callaghan
The objectives are to manage the Madeley Lake recreation site for a multi-use recreation experience year round. Maintain a roaded recreation experience at the Brohm Lake recreation site (not suitable for motorhomes). Provide opportunities for swimming, picnicking, fishing, and hiking. The lake shoreline and overstorey features will be conserved.

Tenquille Lake Recreation Site, Project (16660-20/0237)

The objectives are to manage the Tenquille Lake recreation site for a multi-use recreation experience year round. Maintain a roaded recreation experience to the trailhead for the lake. Provide opportunities for a non-motorized recreation experience in the summer, and a multi use recreation experience in the winter. Provide opportunities for snowmobiling, ski mountaineering, fishing, hiking, and camping. The lake shoreline and overstorey features will be conserved.

Meager Lake Recreation Site, Project (16660-20/0235)

30/02
The objectives are to manage the Meager Lake recreation site for a non-motorized recreation experience in the summer, and a multi-use recreation experience in the winter. Provide opportunities for snowmobiling, fishing, hiking, and swimming. The lake shoreline and overstorey features will be conserved.

Paul Kuster
District Manager, Squamish Forest District

Date

**Order to Establish Objectives
for Recreation Sites
in the Squamish Forest District**

File: 16660-04

Notice is hereby given that, pursuant to Section 6(3) of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites and recreation trails are to be established effective *December 14, 2000*:

*Colby and
Soo
Rivers*

Showh Lake Recreation Site, Project (16660-20/3186)

The objectives are to manage the Showh Lake recreation site for a non-motorized recreation experience year round. Provide opportunities for swimming, picnicking, fishing, and hiking. The lake shoreline and overstorey features will be conserved.

Soo River Recreation Site, Project (16660-20/3063)

The objectives are to manage the Soo River recreation site for a multi-use recreation experience year round. Provide opportunities for snowmobiling, fishing, and hiking.

Soo River Falls Recreation Site, Project (16660-20/3064)

The objectives are to manage the Soo River Falls recreation site for a multi-use recreation experience year round. Provide opportunities for snowmobiling, mountain biking, and ATV riding.

Norton

Norton Lake Recreation Site, Project (16660-20/6311)

The objectives are to manage the Norton Lake recreation site for a multi-use recreation experience year round. Provide opportunities for swimming, picnicking, fishing, and hiking. The lake shoreline and overstorey features will be conserved.

Paul Kuster
District Manager, Squamish Forest District

Date

**Order to Establish Objectives
for Recreation Sites
in the Squamish Forest District**

File: 16660-04

Notice is hereby given that, pursuant to Section 6(3) of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites and recreation trails are to be established effective *December 14, 2000*:

Barkley Creek Recreation Trail, Project (16660-20/3185)

Callaghan ✓
The objectives are to manage the Barkley Creek recreation trail for a multi-use recreation experience year round. Maintain a roaded recreation experience at the Brohm Lake recreation site (not suitable for motorhomes). Provide opportunities for swimming, picnicking, fishing, and hiking. The lake shoreline and overstorey features will be conserved.

Tenquille Lake Recreation Site, Project (16660-20/0237)

The objectives are to manage the Tenquille Lake recreation site for a multi-use recreation experience year round. Maintain a roaded recreation experience to the trailhead for the lake. Provide opportunities for a non-motorized recreation experience in the summer, and a multi use recreation experience in the winter. Provide opportunities for snowmobiling, ski mountaineering, fishing, hiking, and camping. The lake shoreline and overstorey features will be conserved.

Meager Lake Recreation Site, Project (16660-20/0235)

Meager ✓
The objectives are to manage the Meager Lake recreation site for a non-motorized recreation experience in the summer, and a multi-use recreation experience in the winter. Provide opportunities for snowmobiling, fishing, hiking, and swimming. The lake shoreline and overstorey features will be conserved.

Paul Kuster
District Manager, Squamish Forest District

Date

**Order to Establish Objectives
for Recreation Sites
in the Squamish Forest District**

File: 16660-04

Notice is hereby given that, pursuant to Section 6(3) of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites and recreation trails are to be established effective *December 14, 2000*:

Meager Creek Hotsprings Recreation Site and Trail, Project (16660-20/0236)

✓ The objectives are to manage the Meager Creek Hotsprings recreation site for a semi primitive non-motorized recreation experience in the summer, and a multi use recreation experience in the winter. The hotspring features will be managed, and the vegetation features conserved.

Meager

Alexander Falls Recreation Site, Project (16660-20/0108)

The objectives are to manage the Alexander Falls recreation site for a multi-use recreation experience. Maintain a roaded recreation experience at the Alexander Falls recreation site (motorhomes not recommended). Provide opportunities for cross country skiing, snowmobiling, snowshoeing, picnicking, and site seeing.

Brohm Lake Recreation Site, Project (16660-20/0106)

The objectives are to manage the Brohm Lake recreation site for a multi-use recreation experience year round. Maintain a roaded recreation experience at the Brohm Lake recreation site. Provide opportunities for swimming, picnicking, fishing, hiking, and mountain biking activities. The lake shoreline and overstorey features will be conserved.

*all activities
from Brohm*

Echo Lake (Rutherford) Recreation Site, Project (16660-20/6243)

The objectives are to manage the Echo Lake (Rutherford) recreation site for a multi-use recreation experience year round. Provide opportunities for snowmobiling, fishing, and picnicking. The lake shoreline and overstorey features will be conserved.

Paul Kuster
District Manager, Squamish Forest District

Date

**Order to Establish Objectives
for Recreation Trails
in the Squamish Forest District**

File: 16660-04

Notice is hereby given that, pursuant to Section 6(3) of the *Forest Practices Code of British Columbia Act*, objectives for the following Ministry of Forests recreation sites and recreation trails are to be established effective *December 14, 2000*:

Barkley Creek Recreation Trail, Project (16660-20/6047)

The objectives are to manage the Barkley Creek recreation trail for a multi-use recreation experience year round. Provide opportunities for ATV riding, hiking, hunting, dirt biking, horseback riding, ski touring, and snowmobiling. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Deeks Creek Recreation Trail, Project (16660-20/6121)

The objectives are to manage the Deeks Creek recreation trail for a non motorized recreation experience year round. Provide opportunities for hiking, fishing, swimming, and camping. Motor vehicles are not permitted along the trail. The overstorey vegetation features will be conserved. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Magnesia/Harvey Creek (Lions) Recreation Trail, Project (16660-20/3182)

The objectives are to manage the Magnesia/Harvey Creek (Lions) recreation trail for a non-motorized recreation experience year round. Provide opportunities for hiking, ski touring, and mountaineering. The overstorey vegetation features will be conserved. Motor vehicles are not permitted along the trail. Because of broken and uneven terrain, the trail can be dangerous. Beware of rapidly changing weather conditions.

Paul Kuster
District Manager, Squamish Forest District

Date

E. H. Harvey

E. H.

APPENDIX F – First Nations Consultation

The Licensee First Nations FSP Consultation process is summarized in the tables below. The referral letters and responses are appended below.

Lil'wat Nation

Date	Item
February 13, 2019	Lil'wat Forestry Ventures submitted a referral letter to the Lil'wat Nation requesting support for the Spelkúmtn Community Forest, Forest Stewardship Plan [FSP]
March 7, 2019	The Lil'wat Nation provided a letter expressing approval of the Spelkúmtn Community Forest, FSP

Squamish Nation

Date	Item
September 28, 2020	Lil'wat Forestry Ventures submitted a referral letter to the Squamish Nation requesting support for the Spelkúmtn Community Forest, Forest Stewardship Plan [FSP]
November 13, 2020	The Squamish Nation provided an email letter stating the Squamish Nation has conducted an initial review of the Community Forest project and that the Squamish Nation does not require further consultation at this time and that the Squamish Nation will defer to the Lil'wat Nation regarding review and comment of the FSP.



Squamish Nation

415 West Esplanade
North Vancouver BC, V7M 1A6

September 28, 2020

Attention: Peter Baker, Director, Aboriginal Rights and Title

Re: FSP Support Letter, Spel'kumtn Community Forest

Please accept this letter as a request for support of the Forest Stewardship Plan for the Community Forest Agreement K5X. This submission is being completed for the Spel'kumtn Community Forest Partnership, comprised of members from Lil'wat Nation and the Village of Pemberton.

The FSP area is located around the communities of Mount Currie and Pemberton, BC. FSP maps have been included to show the operating area within the Spel'kumtn Community Forest (SCF), specifically regarding old growth, visuals, wildlife/ water, cultural areas, spirited ground and recreation.

FSPs are a key operational plan under the Forest and Range Practices Act (FRPA). FSPs identify broad areas called Forest Development Units (FDUs) where timber harvesting and road construction may occur, are subject to review and comment, and must be approved by government before taking effect. FSPs do not show cutblocks and roads for approval, and are generally in effect for a 5 year term.

For each of the 11 FRPA values and their Objectives, such as wildlife & biodiversity, the FSP identifies legally binding results and strategies, forest practices, measures, and standards which will be required to be implemented by the holder of the FSP in the forest development units. Results and strategies must be consistent with government objectives, and must be measurable and verifiable. The FSP also must be consistent with objectives set out in land-use plans, such as the Sea-to-Sky Land Use Plan, and sub-unit plans as approved in Landscape Unit planning.



The FSP forms only one part of the overall forest stewardship and due diligence process. Examples of other sustainability initiative include Management Plans. In addition to the legal framework in the FSP, other regulatory requirements are outside the FSP, such as the Heritage Conservation Act, Wildlife Act, Foresters Act, Federal Species at Risk Act, Federal Fisheries Act, and First Nation case law.

Your earliest support of this FSP would be greatly appreciated. If you have any questions, please contact Klay Tindall at (604) 894-6115, (604) 388-5529 or klay.tindall@lilwat.ca.

Sincerely,

Klay Tindall, RPF
Forest Operations Manager

CC: Aaron Marchant, Referrals Analyst

Abe Litz

From: Klay Tindall <Klay.Tindall@lilwat.ca>
Sent: Friday, November 13, 2020 10:58 AM
To: 'Abe Litz (alitz@hedbergassociates.com)'
Subject: FW: Spel kúmtn Community Forest Stewardship Plan

FYI

From: Arthur Macapagal [mailto:Arthur_Macapagal@squamish.net]
Sent: November 13, 2020 10:47 AM
To: Klay Tindall <Klay.Tindall@lilwat.ca>
Cc: Aaron Marchant <Aaron_Marchant@squamish.net>
Subject: Re: Spel kúmtn Community Forest Stewardship Plan

Dear Mr. Tindall

Re: Spel kúmtn Community Forest Stewardship Plan

The area associated with the Project is within the unseeded traditional territory of the Squamish Nation, which is subject to our constitutionally protected rights and title.

We have conducted our initial review of the Project and do not require further consultation on it at this time and would like to differ to Lil'wat Nation.

Please do not hesitate to contact me if you have any questions or concerns,

Huy chexw a (Thank You),

Arthur Macapagal
Program Manager, Rights & Title

T 604-998-0285

C 604-352-8170

F 604-982-0515

squamish.net<<https://linkprotect.cudasvc.com/url?a=https%3a%2f%2fwww.squamish.net%2f&c=E,1,iLyDEQbRf7FEhz-39bFCJg57BqN0axxs0QtwXF1Js0mrdp386BzWaOxTmg8RQ4OYR4qV8iGHVPJyz7RmDfiUfDVoQF3PvmTj7SOgKtAz2kRsHXVcL8rRJ19Wtw,,&typo=1>>

[cid:image003.jpg@01D6B9AA.590B4CE0]<https://linkprotect.cudasvc.com/url?a=https%3a%2f%2fwww.squamish.net%2f&c=E,1,C2IX5TVkTxiktBhE-F45StfOwNY6RnAJcRXB48-F5v9dBqULbitAYjWR-K8_OXZtHR40zGSeQYONoydqOvqlc_02Ysvji21X74HHT1m8jZnNJeQuZi6fCQ,,&typo=1>

*The information in this message and/or its attachments is confidential. Use or disclosure of the contents by anyone other than the intended recipient is prohibited. If you have received this in error, please delete and notify the sender immediately.

Please consider the environment before printing this email.

ATTENTION: This email originated outside of Lil'wat Nation and should be treated with extra caution. If you have any doubt about the validity of the email, please contact your IT service desk.



Lil'wat Nations Lands Office

P.O. Box 602

Mount Currie, BC, V0N 2K0

February 13, 2019

Attention: Harriet Van Wart, Director, Department of Lands & Resources

Re: FSP Approval, Spel'kumtn Community Forest

Please accept this letter as a request for an approval of the Forest Stewardship Plan for the Community Forest Agreement K5X. This submission is being completed for the Skel'kumtn Community Forest Limited Partnership, comprised of members from Lil'wat Nation and Village of Pemberton.

The FSP area is located around the communities of Mount Currie and Pemberton. FSP maps have been included to show the operating area within the Spel'kumtn Community Forest (SCF), specifically regarding Old Growth, Visuals, Wildlife/ water, Cultural areas, spirited ground, and recreation.

FSPs are a key operational plan under the Forest and Range Practices Act (FRPA). FSPs identify broad areas called Forest Development Units (FDUs) where timber harvesting and road construction may occur, are subject to public review and comment, and must be approved by government before taking effect. FSPs do not show cutblocks and roads for approval, and are generally in effect for a 5 year term.

For each of the 11 FRPA values and their Objectives set by government, such as wildlife and biodiversity, the FSP identifies legally binding results and strategies, forest practices, measures, and standards, which will be required to be implemented by the Holder of the FSP in the forest development units. Results and strategies must be consistent with government Objectives, and must be measurable and verifiable. The FSP also must be consistent with government objectives set out in Land-Use Plans, such as the Sea to Sky Land Use Plan, and sub-unit plans such as approved Landscape Unit Plans.



The FSP forms only one part of the overall forest stewardship and due diligence process. Examples of other sustainability initiatives include Management Plans. In addition to the legal framework in the FSP, other regulatory requirements are outside the FSP, such as the Heritage Conservation Act, Wildlife Act, Foresters Act, Land Act, Federal Species at Risk Act, Federal Fisheries Act, and First Nations case law.

Your **earliest review and approval** would be greatly appreciated. If you have any questions regarding this request please contact Klay Tindall at (604) 894-6115 or by email at klay.tindall@lilwat.ca.

Sincerely,

Klay Tindall, RPF
Forest Operations
Manager



March 7, 2019

Lil'wat Forestry Ventures LP
PO Box 605
Mount Currie, BC V0N 2K0
Fax: (604) 894-6841

Attention: Klay Tindall, RFP

Re: Forest Stewardship Plan (FSP) Approval, Spel'kumtn Community Forest

Our File: 02132019-001 LFV FSP Approval Spel'kumtn Community Forest

We are writing to you in response to your letter dated February 13, 2019 informing us of your request for FSP approval for the Spel'kumtn Community Forest, and asking us to bring forward any aboriginal interests we may have on or adjacent to the land in question.

The Spel'kumtn Community Forest lies within the traditional territory of the Lil'wat Nation. These lands have been used and occupied by the Lil'wat since time immemorial. The Province of British Columbia has been notified of the existence of the Lil'wat Nation's traditional territory.

The Lil'wat Nation asserts its inherent aboriginal title to its entire traditional territory, sovereignty over its traditional territory, and a right to self-determination. The Lil'wat Nation's aboriginal rights, including title, are protected under s. 35 of the *Constitution Act, 1982*.

A series of recent court decisions have:

- upheld the existence of aboriginal title in British Columbia;
- declared that aboriginal title coexists with crown title;
- limited the instances in which aboriginal title can be infringed by British Columbia or a third party;
- established strict criteria for any such infringement;
- declared that aboriginal title includes the right to choose the use to which the land is put;
- placed a legal duty on the Province of British Columbia to undertake meaningful consultation with First Nations and accommodate potential infringement; and



- declared that accommodation may have economic and/or cultural components.

Furthermore, the Supreme Court of Canada confirmed in the *Tsilhqot'in* decision that aboriginal title is real and meaningful, territorial in nature, and that First Nation consent is required for the use of its aboriginal title lands and resources. The decision also specifically states that aboriginal title confers:

. . . the right to decide how the land will be used; the right of the enjoyment and occupancy of the land; the right to possess the land; the right to economic benefits of the land; and the right to pro-actively use and manage the land. (at para. 73)

As a consequence of these decisions, British Columbia is under a legal obligation to consult with the Lil'wat Nation, and, where appropriate, seek consent from Lil'wat Nation and accommodate the Lil'wat Nation for infringements on its aboriginal title and rights.

At the February 27, 2019 Referral Committee (the Committee) meeting the Committee reviewed and discussed your request for FSP approval for the Spel'kumtn Community Forest; the following motion was passed:

Motion #03 0227019

Moved by AJ Nelson, seconded by Carl Wallace that the Lil'wat Land Use Referral Committee approves the Spel'kumtn Community Forest Forest Stewardship Plan for a 5-year term as presented by Klay Tindall, RPF, Forest Operations Manager, Lil'wat Forestry Ventures. Motion Carried

We do not have any comments at this time. However, if any new information were to arise during the course of this activity that indicates there may be impacts on Lil'wat aboriginal rights, title or interests, we would expect to receive notice and to have an opportunity to provide comments at that time. Furthermore, nothing in this letter is intended to affect the scope of, or the opportunity to exercise, any of Lil'wat's aboriginal rights, nor is it intended to accept any infringement of same.

Sincerely,

Harriet VanWart, Director
Lands and Resource Department
Lil'wat Nation

APPENDIX G – FSP ADVERTISING

The FSP was advertised as available for public review and comment for the period from November 1, 2018 to January 4, 2019. The Notice of public viewing was advertised in the November 1, 2018 and November 8, 2018 editions of the Pique newspaper.

Copies of the advertising are appended to this document below.

A public open house to present the Spelkumtn Community Forest Management Plan and Forest Stewardship Plan, hosted by the Village of Pemberton [VoP] was held November 19, 2018. The open house was advertised on the VoP website for 2 weeks prior to the open house event. The open house presented both the Spelkumtn Community Forest Management Plan and the Forest Stewardship Plan [FSP]. All documents and information presented at the open house were posted on the VOP website following the open house (Nov 20, 2018). Additionally, a list of frequently asked questions (FAQ's) and responses regarding the Community Forest FSP and Management Plan were posted on the VOP website.

Comments specific to the FSP contents were received from 3 members of the public and responses were provided to each comment. Comments and responses were included in the FAQ's posted to the VoP website in December 2018.

Copies of the specific public comments received and the responses to these comments are appended to this document below.

The Lil'wat Nation Business Group hosted a community open house on November 25, 2019. The open house was advertised on the Lil'wat Nation webpage and through social media and community notice boards. The FSP and Management Plan were presented by Lil'wat Forestry Ventures [LFV] at the open house event. No FSP specific comments were received during the Lil'wat Business Group community open house.



Public Notice of Viewing



Spelkumtn Community Forest Stewardship Plan

The Spelkumtn Community Forest is located adjacent to and is managed through a partnership between the Village of Pemberton and the Lil'wat Nation. The Spelkumtn Community Forest is submitting for approval, a Forest Stewardship Plan [FSP]. The proposed Forest Stewardship Plan is for a term of 5 years, and when approved, will form the basis for the issuance of permits authorizing road construction, harvesting and other forest development activities. The Forest Stewardship Plan conforms and complies with applicable Higher-Level Plans, the *Forest and Range Practices Act* and the associated regulatory framework.

As per Section 20 of the *Forest Planning and Practices Regulation*, notice is hereby given to all First Nations, Guides, Outfitters, Trappers, Private Land Owners, Tenure Holders, Water Users and the general public that submission of the Forest Stewardship Plan for approval is proceeding and your input is requested so that any concerns or comments can be addressed.

The proposed Forest Stewardship Plan is available for public review and comment commencing November 1, 2018 and lasting for a period of 60 days, at the Village of Pemberton and at the offices of Lil'wat Forestry Ventures in Mount Currie.

Additionally, an Information Session will be held November 19th in the Village of Pemberton to present the FSP and the associated Spelkumtn Community Forest Management Plan. Details of the Information Session will be posted when final.

To view the Forest Stewardship Plan during regular business hours, contact:

Village of Pemberton
7400 Prospect Street, Pemberton BC
Mon. to Fri., 8:30am to 4:30pm
(excluding statutory holidays)
View online at www.pemberton.ca

Lil'wat Forestry Ventures Office
1R 10 Road, Mt Currie BC
Mon. to Fri., 8:30am to 4:30pm
(excluding statutory holidays)

In order to be considered, comments regarding this plan must be in writing, and received no later than January 4, 2019. Comments should be addressed to:

Abe Litz, RPF
Hedberg and Associates Consulting Ltd.
Suite 205-1121 Commercial Place, Squamish BC V8B 0S5
Phone 604.815.4555 ext 228
alitz@hedbergassociates.com

2222 village square 604 932 4540 www.araxi.com

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Public Notice of Viewing Spelkumtn Community Forest Stewardship Plan



The Spelkumtn Community Forest is located adjacent to and is managed through a partnership between the Village of Pemberton and the Lil'wat Nation. The Spelkumtn Community Forest is submitting for approval, a Forest Stewardship Plan [FSP]. The proposed Forest Stewardship Plan is for a term of 5 years, and when approved, will form the basis for the issuance of permits authorizing road construction, harvesting and other forest development activities. The Forest Stewardship Plan conforms and complies with applicable Higher-Level Plans, the *Forest and Range Practices Act* and the associated regulatory framework.

As per Section 20 of the *Forest Planning and Practices Regulation*, notice is hereby given to all First Nations, Guides, Outfitters, Trappers, Private Land Owners, Tenure Holders, Water Users and the general public that submission of the Forest Stewardship Plan for approval is proceeding and your input is requested so that any concerns or comments can be addressed.

The proposed Forest Stewardship Plan is available for public review and comment commencing November 1, 2018 and lasting for a period of 60 days, at the Village of Pemberton and at the offices of Lil'wat Forestry Ventures in Mount Currie.

Additionally, an Information Session will be held November 19th in the Village of Pemberton to present the FSP and the associated Spelkumtn Community Forest Management Plan. Details of the Information Session will be posted when final.

To view the Forest Stewardship Plan during regular business hours, contact:

Village of Pemberton

7400 Prospect Street, Pemberton BC
Mon. to Fri., 8:30am to 4:30pm
(excluding statutory holidays)
View online at www.pemberton.ca

Lil'wat Forestry Ventures Office

IR 10 Road, Mt Currie BC
Mon. to Fri., 8:30am to 4:30pm
(excluding statutory holidays)

In order to be considered, comments regarding this plan must be in writing, and received no later than January 4, 2019. Comments should be addressed to:

Abe Litz, RPP
Hedberg and Associates Consulting Ltd.
Suite 205-1121 Commercial Place, Squamish BC V8B 0S5
Phone 604.815.4555 ext 228
alitz@hedbergassociates.com



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Abe Litz

From: Abe Litz <alitz@hedbergassociates.com>
Sent: Monday, January 07, 2019 4:05 PM
To: 'Ian Kruger'
Cc: 'Klay Tindall'; 'Jill Brooksbank'; 'Sarah Weber'; Kerry Mehaffey
Subject: RE: Community Forest Comment

Hello Ian,

Thanks very much for your letter and for the expression of support from PORCA. The Community Forest recognizes the importance and value of the Pemberton area trail network and it is the intention of the CF to ensure the trail use experience is not diminished by forest management activities and that the network continues to be properly managed. The Community Forest is currently exploring the idea of development of a stakeholder committee which would be comprised of the variety of stakeholders / users across the CF area, similar to a model that is being utilized in the Cheakamus [Whistler] Community Forest.

PORCA would be offered a seat on this committee to provide the organization the opportunity for input on management decisions as related to trail use, trail development and trail management.

Klay Tindall will be reaching out to you in the coming weeks to schedule a mutually acceptable time to meet and discuss information sharing / mutual planning processes and formation of a stake holder committee.

In regards to the fuels management area I am providing you with an excerpt from the response that has been given to others regarding how fuel thinning is planned. This response, along with a summary of other questions and concerns is available on the Community Forest FAQ page found here;

<https://www.pemberton.ca/public/download/documents/55401>

I would encourage you to review this page as it may provide you additional useful information.

Fuel thinning activities can involve a range of treatments. Prescribed by a Registered Professional Forester, these area-specific treatments can include removal of small understory trees, removal of woody debris (sticks, limbs, logs, etc) from the forest floor, removal of the branches from the lower portion of trees, removal of a percentage of trees in a stand so there is less continuous tree crown cover, and a variety of other treatments. The objective of the treatments is to reduce the flammability of an area by reducing the amount of burnable material, so that a fire is less likely to start, and if a start happens, it will spread more slowly and has less potential to blow up into an uncontrollable destructive fire.

As with most forest management planning, wildfire reduction planning would also consider the range of values on a particular site (recreation values, wildlife values, visual impacts, etc) and tailor the treatment to be consistent with the range of objectives for the variety of values. This planning would include looking at options to access the site and determine what roads would be necessary for use to complete the treatments. Again, the range of values / current uses of roads would be considered as part of the existing site values and the plan would address protection / management of existing values.

There are a number of examples of fuel thinning treatments that have occurred in the Sea to Sky, particularly in Whistler over the past 6-8 years adjacent to the resort. Some example area of treatments that have occurred include behind Kadenwood in Creekside, around the athlete's village in Function, above the Alpine meadows sub-division and around the Olympic Park in Callahan. These treatments have all been planned and completed with input from local users / neighboring communities to the treatment areas. The feedback from WORCA on areas where fuel thinning overlaps on trail networks has been positive, the general comment being removal of understory brush and small trees has improved

trail use experience through increasing site lines and simplified trail building by removal of much of the downed/dead wood and brush present, exposing more line choices and speeding trail build activities.

Currently the fuel thinning treatment areas identified are candidate areas and no detailed fuel thinning plans have been developed. The fuel thinning treatments are quite expensive to complete and although a small amount of merchantable timber may be generated during treatments the amount would not cover the costs of the treatments. It is expected that any fuel thinning treatments that are completed would be done in partnership with Provincial/Regional government partners under community protection funding. It is the intention of the community forest to explore options that are available to access funding for community wildfire protection from the various levels of government. If funding is received fire proofing treatment prescriptions would be developed in consultation with the community and various stakeholders.

I hope this address your concerns and I look forward to meeting with you in the coming months. Please do not hesitate to contact me if you require further information.

Cheers

Abe Litz, RPF
Silviculture Forester

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From: Ian Kruger <igkruger@hotmail.com>
Sent: Wednesday, December 26, 2018 8:58 PM
To: alitz@hedbergassociates.com
Subject: Community Forest Comment

Spel'kumtn Community Forest,

The Pemberton Off Road Cycling Association is an organization with over 600 members whose guiding principles are “inclusive, fun, and community.” PORCA was founded to support riders and trails of all levels. Through community involvement and trails stewardship, the association strives to maintain and enhance Pemberton's world class riding experience for residents and visitors.

The Pemberton Off Road Cycling Association is excited to see the development of the Spel'kumtn Community Forest. The Association is supportive of maximizing community input on management decisions that affect the forests surrounding Pemberton and the Lilwat Nation. It is our hope that recreation is recognized not only as an economic but also as a key community asset that defines the unique character of Pemberton.

While both the Forest Stewardship Plan and the story boards presented at the recent community information session make reference to recreation as a value of the forest, PORCA feels that the Community Forest has yet to fully engage groups who represent recreation within the valley. To date the sole outreach has been a request for a letter of support. The association looks forward to increased opportunities for organizations representing the broad range of recreational users to express concerns and provide input for management decisions.

The fuels reduction locations identified in harvest area maps for 2019-2020 are a concern to PORCA. The association is supportive of these efforts and realizes their importance in keeping Pemberton and surrounding communities safe. However, all three fuel reduction locations contain trails that are significant to the community. It is our hope that the Community Forest will provide greater detail into how these operations will be performed and their impacts upon trails and trail users.

Of particular concern to PORCA and Pemberton trail users is the prospect that the road utilized as the Waco Connector may be reactivated to facilitate fuels reduction. Doing so will significantly change the character of Pemberton's primary trail network. While the Association believes that this impact could be mitigated by scheduling the work during winter months and perhaps creating new trail connections, the work presents a challenge for both the Community Forest and trail users. PORCA looks forward to participating in the planning and communication of these activities.

The Pemberton Off Road Cycling Association is prepared to participate in the Community Forest process. We look forward to achieving community consensus upon the best way to support our forests and the communities that rely upon them.

Sincerely,

Ian Kruger

President

Pemberton Off Road Cycling Association

Abe Litz

From: Abe Litz <alitz@hedbergassociates.com>
Sent: Monday, January 07, 2019 2:57 PM
To: 'susie price'
Cc: 'Klay Tindall'; 'Jill Brooksbank'; 'Sarah Weber'
Subject: RE: community forest plans

Hello Susie,

Thank you for your comments and support for the Spelkumtn Community Forest. I have provided you with answers to the questions you have raised below. I would also like to direct you to the FAQ page for the community forest (<https://www.pemberton.ca/public/download/documents/55401>) which contains a summary of the other questions and responses from community members which have been received during the development of the Community Forest and the associated Forest Stewardship Plan [FSP].

Firstly, I am not aware of the "Ivy Lake Resource Plan ". Do you know who developed the plan? Do you know if a copy of the Plan is publicly available? Any information you could provide would be great as it would be the intention of the Community Forest to consider this plan in the management of the area where relevant. I have searched a number of known resources and can find no records of this plan.

We are currently at this stage of development of the community forest where, the extent of the community forest area operating area, including portions of the landbase near Ivy Lake, have been identified. No site specific (cut block level) planning has been completed at this stage on any portion of the community forest. Once the community forest is officially established and operating, individual areas for harvest across the community forest area will be identified and site-specific planning will occur for these individual areas. The concerns you have identified with harvest in the Ivy Lake area would be addressed at the site level (individual cutblock) planning stage. Below, I have provided you with a quick overview of the processes that would occur during site level planning, as relating to your questions and concerns.

During site level harvest plan development the managers of the community forest will utilize the services of a Professional Forester who has the responsibility to identify all the values identified for a specific site and ensure proper planning for and management of the values occurs. The role of the Forest Stewardship Plan [FSP] is to identify the range of values across the community forest area and to provide measurable and verifiable results and strategies for management of the identified values.

In proximity to the Ivy lake area there are a number of overlapping values that are identified through the FSP as requiring management. These values include management of visual quality and presence and management requirements for Lil'wat First Nation Cultural Management Areas – Spirited Ground. The management requirements for these values would permit harvesting only at a small scale and in a manner, which has low visual impact, achieved normally through limiting opening size and use of retention trees and retention patches throughout harvesting areas.

In regards to impacts to water wells in the area; I am not aware of any specific hydrological studies that have been completed on the aquifer area in the vicinity of Ivy Lake. However, it can be generally stated that aquifers in mountainous terrain are not impacted by small changes in forest cover. Small scale openings are considered to have no effect on watershed level rates of surface water infiltration or on aquifer levels. Additionally, harvest planning, regardless of location will always assess all surface water and drainage patterns present on an area of harvest interest and ensure no permanent impacts to surface water quality or drainage patterns occurs due to harvesting activities. All water management actions and results of activities must be consistent with the Governmental regulations related to water quality and management. If during site specific assessments, non-typical conditions regarding water flow or infiltration rates are identified the prescribing Forester may decide to consult additional hydrology specialists for management advice.

The FSP and forestry regulations are very specific on management of surface water. All riparian areas within or adjacent to a planned harvest area must be identified, mapped and a feature specific riparian management strategy devised to ensure no negative impacts to surface water occurs. The riparian management strategies will include development of specific actions to be followed during harvest for each individual riparian feature. Actions include specific requirements for retention of trees and vegetation adjacent to the feature, development of crossing designs or crossing restrictions, limitations on approach or limitations on activities that may occur within a riparian area with regards to harvesting equipment. These measures also consider protection of the riparian features from petroleum or other deleterious substance entry. The process described above is sufficient to protect water quality on areas of planned harvest.

In regards to your terrain stability concerns, harvesting on the majority of sites does not increase soil / slope instability, although the potential for increase on specific sites does exist, generally on steep slopes. The potential for slope instability is assessed at the block planning stage, it is the responsibility of the Professional Forester to assess all areas of proposed harvest for a range of factors. Assessment of terrain stability will look at existing terrain/topography, existing forest cover and drainage / runoff patterns within and adjacent to the area. If the potential for terrain instability is identified, the Professional Forester designing the cutblock will develop a strategy to minimize or eliminate terrain stability risks. The Professional Forester may decide to utilize the services of a Professional Geotechnical Engineer or Professional Hydrologist to develop and prescribe specific actions to address site slope stability, as required.

All assessments and resulting plans are completed and signed/sealed by a Professional Forester prior to any harvesting activities proceeding. Professional sign-off is the assurance that the activities prescribed, will result in harvesting of an area, that is consistent with all objectives established for the range of values under the BC Forest and Range Practice Act [FRPA] and other relevant land use regulations.

The Spel'Kúmtn Community Forest would also like to acknowledge that the mountain bike community is an important stakeholder within the community forest area and recreational trails are a very important value. The Community Forest intends to continue to develop relationships with the mountain bike community to ensure the important recreation values provided within the community forests are thoughtfully managed and will continue to develop and thrive.

Thanks for your time and if you would like to discuss further please do not hesitate to contact me.
Sincerely

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-----Original Message-----

From: susie price <squidge32@hotmail.com>
Sent: Friday, December 28, 2018 8:31 AM
To: alitz@hedbergassociates.com
Subject: Re: community forest plans

Dear Abe,

The concept of a community forest is wonderful and for the communities involved a good way forward so we have more control over the forest that surround us. They should be seen not just as a resource but an integral part of our environment.

I would like to stress two points that I know your organization has looked at but is vital importance to me and my neighbours.

Firstly, we who live on Reid road, Ivey Lake area all are on wells. There are at least 40 wells in this area. Not all of them have been registered. As the Lots can be subdivided there is a possibility of approximately another 40 wells in the area. Our watershed is in the scope of the community forest plan and there could be negatively affected by what gets logged, please confirm how the plan has taken into account this. Have you looked at the Ivey Lake resource plan that was done over 20 years ago, and was drawn up by all interested parties ?

As well as you are aware if one logs then land, soil and substrate becomes more unstable and therefore if logging is done above Reid road what affect will this have on stability above our properties? With changing climate patterns heavier rains and less snow pack will exaggerate this problem. What in the plan has done to take these issues into consideration.

Secondly, I know the mountain biking community has been heavily involved in the plan, and I want to put my weight behind the acknowledgement of how important recreational trails are to this community. They are used by a diverse group of people and bring pleasure and revenue to the area.

I look forward to hearing your response to my questions.

Kind regards

Susie Price

Sent from my iPad

Abe Litz

From: Abe Litz <alitz@hedbergassociates.com>
Sent: Monday, January 07, 2019 3:13 PM
To: 'Yojioro Hiki'
Cc: 'Jill Brooksbank'; 'Klay Tindall'; 'Sarah Weber'
Subject: RE: Community Forest

Hello Yojioro,

Thank you for your comments regarding concern for the management of water quality in the Reid road area. Please see the response below which address your concerns.

The Community Forest is currently at this stage of development where, the extent of the community forest area operating area, including portions of the landbase near Ivy Lake, have been identified. No site specific (cut block level) planning has been completed at this stage on any portion of the community forest. Once the community forest is officially established and operating, individual areas for harvest across the community forest area will be identified and site-specific planning will occur for these individual areas. The concerns you have identified with harvest in the Reid Road area would be addressed at the site level (individual cutblock) planning stage. Below, I have provided you with a quick overview of the processes that would occur during site level planning, as relating to your questions and concerns.

During site level harvest plan development, the managers of the community forest will utilize the services of a Professional Forester who has the responsibility to identify all the values identified for a specific site and ensure proper planning for and management of the values occurs. The role of the Forest Stewardship Plan [FSP] is to identify the range of values across the community forest area and to provide measurable and verifiable results and strategies for management of the identified values.

In proximity to the Reid Road area there are a number of overlapping values that are identified through the FSP as requiring management. These values include management of visual quality and presence and management requirements for Lil'wat First Nation Cultural Management Areas – Spirited Ground. The management requirements for these values would permit harvesting only at a small scale and in a manner, which has low visual impact, achieved normally through limiting opening size and use of retention trees and retention patches throughout harvesting areas.

In regards to impacts to water wells in the area; I am not aware of any specific hydrological studies that have been completed on the aquifer area in the vicinity. However, it can be generally stated that aquifers in mountainous terrain are not impacted by small changes in forest cover. Small scale openings are considered to have no effect on watershed level rates of surface water infiltration or on aquifer levels. Additionally, harvest planning, regardless of location will always assess all surface water and drainage patterns present on an area of harvest interest and ensure no permanent impacts to surface water quality or drainage patterns occurs due to harvesting activities. All water management actions and results of activities must be consistent with the Governmental regulations related to water quality and management. If during site specific assessments, non-typical conditions regarding water flow or infiltration rates are identified the prescribing Forester may decide to consult additional hydrology specialists for management advice.

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The potential for slope instability is also assessed at the block planning stage, it is the responsibility of the Professional Forester to assess all areas of proposed harvest for terrain stability. Assessments will look at existing terrain/topography, existing forest cover and drainage / runoff patterns within and adjacent to the area. If the potential for terrain instability is identified, the Professional Forester designing the cutblock will develop a strategy to minimize or eliminate terrain stability risks. The Professional Forester may decide to utilize the services of a Professional Geotechnical Engineer or Professional Hydrologist to develop and prescribe specific actions to address site slope stability, as required.

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Thank you for your time and if you have further questions or concerns, please do not hesitate to contact me.
Sincerely,

Abe Litz, RPF
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-----Original Message-----

From: Yojioro Hiki <telehiki@hotmail.com>
Sent: Thursday, January 03, 2019 5:58 PM
To: alitz@hedbergassociates.com
Subject: Re: Community Forest

SLRD

Dear whom it may concern

This is Yojiro Hiki of 1773 Reid road.

I am not sure if the potential forestry activity is related with our area directly. We are against any logging that can affect our water: shallow wells / deep wells / creek/ community water system.

We love our area. However, the water (quality and quantity) is a big concern to live here.

Sincerely
Yojiro Hiki
1773 Reid Road Mt Currie

iPhoneから送信