



**Logan Lake  
Community Forest**  
CORPORATION

## **Forest Stewardship Plan**

**February 13, 2020**

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## List of Acronyms

- AOA – Archeological Overview Assessment
- BAF – Basal Area Factor
- BEC – Biogeoclimatic Ecosystem Classification
- CHR – Cultural Heritage Resource
- CFA – Community Forest Agreement
- DBH – Diameter at Breast Height
- DFP – Deviation From Potential
- FDP – Forest Development Plan
- FDU – Forest Development Unit
- FPPR – Forest Planning and Practices Regulation
- FRPA – Forest and Range Practices Act
- FSP – Forest Stewardship Plan
- HLP – Higher Level Plan
- IAPP – Invasive Alien Plant Program
- LLCF – Logan Lake Community Forest
- LRMP – Land and Resource Management Plan
- LRUP – Local Resource Use Plan
- MITD – Minimum Inter Tree Distance
- MSSp – Minimum Stocking Standard of Preferred Species
- MSSpa – Minimum Stocking Standard of Preferred and Acceptable Species
- NAR – Net Area to Reforest
- OGMA – Old Growth Management Area
- PP – Ponderosa Pine Biogeoclimatic Zone
- QRP – Qualified Registered Professional
- RMZ – Riparian Management Zone
- RRZ – Riparian Reserve Zone
- SIC – Snow Interception Cover
- TSA – Timber Supply Area
- VQO – Visual Quality Objective
- WTR – Wildlife Tree Retention
- WTRA – Wildlife Tree Retention Area

# 1. Definitions and Interpretation

## 1.1 Definitions

**FDU:** the forest development unit identified under this FSP.

**FPPR:** the Forest Planning and Practices Regulation as amended from time to time.

**FRPA:** the *Forest and Range Practices Act*, SBC 2002, c. 69, as amended from time to time.

**FSP:** this Forest Stewardship Plan.

**FSP Holder:** the Logan Lake Community Forest Corporation.

**Kamloops LRMP:** the Kamloops Land and Resource Management Plan approved by the government in 1995 and as amended from time to time.

**Qualified Registered Professional (QRP):** an individual who is a registered member, in good standing, of a professional association whose training, ability and experience make the member professionally competent.

## 1.2 Definitions under Enactments

Unless otherwise expressly indicated, or indicated by context, terms used in this FSP have the definition given them, as of the Submission Date, in the *Forest and Range Practices Act* and associated regulations and the *Forest Act* and the regulations under them, as amended from time to time.

# 2. FSP Dates and Term

The date of submission of this FSP is September 10, 2018.

The Term of this FSP is 5 years beginning on the Commencement Date. The Commencement Date for the Term of this FSP is the date specified by the Minister in approving this FSP.

# 3. Applicability of this FSP

This FSP applies to the area identified as the forest development unit for the Logan Lake Community Forest (LLCF) within the Kamloops Timber Supply Area (TSA) (see Figure 1).

# 4. Forest Development Units

A Forest Development Unit (FDU) has been identified in this FSP that incorporates the boundary of the Logan Lake Community Forest Agreement (CFA) area within the Kamloops TSA (see Figure 1).

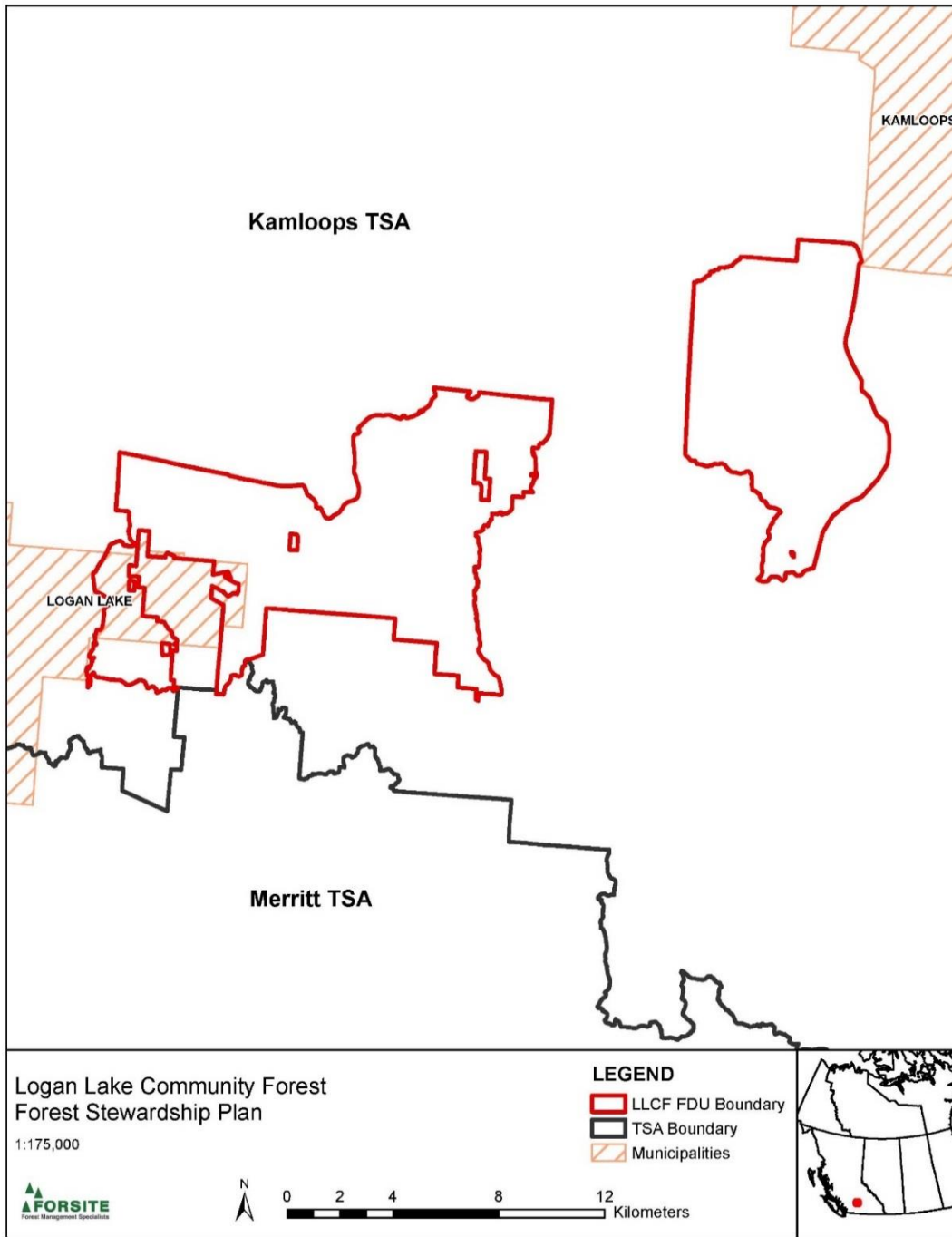


Figure 1: Forest Development Unit for the Logan Lake Community Forest – Forest Stewardship Plan

## 4.1 FSP Map Layers

The FSP Maps (see Appendix A) identify locations of the following items that were in effect on the Submission Date as per section 14(2) and (3) of the FPPR:<sup>1</sup>

1. Ungulate winter range area;
2. Wildlife habitat area;
3. Scenic area;
4. Old growth management area; and
5. Area where commercial timber harvesting is prohibited by an enactment.

## 4.2 Additional Items Identified in the FDU (Blocks and Roads)

The areas within the LLCF FDU that have Cutting Permits and/or Road Permits approved prior to the approval date of this FSP are considered in effect (FPPR Section 14(3)(j)). Table 1 outlines these areas within this FSP.

**Table 1: Cutting Permits and Road Permits held by the LLCF**

Cutting Permit	Cut Blocks
1	CFA003, CFA002, CFA001
2	1, 2
3	1, 2, 3, 5
4	1, 2, 3, 4, 5
5	1, 2, 3
6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
8	1, 2, 3, 4, 5
9	1, 2, 3, 4, 5, 6, 7, 8, 9
10	1, 2, 4, 5
12	4, 18, 19, 20
13	PL2, PL1, PL3, PL8, PL9, PL25, LL2
14	DL17, DL5, DL1, DL2
15	CM4, CM5, CM1, CM2
16	TL1, TL2, TL3, TL4, TL5, TL6, TL7, TL8, TL9
17	MC1, MC2, MC3, MC4, MC6
18	LL1
19	INK1, INK2, INK3, INK4, INK5, INK6, INK7, INK8, INK9, INK10, INK11, INK12, INK13, INK14, INK15, INK16, INK17, INK18, INK19, INK20, INK21

Road Permit	Sections
R18045	All

<sup>1</sup> The following items have not been identified as they are not present within the FDU at the date of submission of this FSP.

- L1 Lakes
- Fisheries Sensitive Watersheds
- Community Watersheds
- Lakeshore Management Zone

## 5. Results or Strategies

The following sections outline objectives that are relevant to this FSP as identified directly through the Forest and Range Practices Act<sup>2</sup> and associated regulations, the Kamloops LRMP Higher Level Plan (HLP) Order<sup>3</sup>, or the Old Growth Management Objectives for the Kamloops LRMP Area Order<sup>4</sup>.

### 5.1 Soil Management and Conservation

**Objective<sup>5</sup>:** 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.

**Applicable Area:** The LLCF FDU.

**Result or Strategy:** If the FSP Holder carries out primary forest activities, the activities will conform to soil disturbance limits as specified in Sections 35 and 36 of the FPPR.

### 5.2 Water Objectives

#### 5.2.1 Water Licensees

**Objective<sup>6</sup>:** Ensure implementation of a referral process to notify all potentially impacted water licensees when development is proposed.

**Applicable Area:** The LLCF FDU.

**Result or Strategy:** Prior to carrying out primary forest activities, the FSP Holder will:

- 1) Ensure a QRP assesses whether there are known water licenses that may be potentially impacted by the proposed activities.
- 2) If it is determined by a QRP that there may be a potential impact, the related water licensees will be contacted to solicit input during the preparation of site plans or road permits.
- 3) Where specific information is provided by the water licensee(s), work with the potentially impacted water licensee(s) to develop strategies to mitigate the potential impact on the water license(s).
- 4) In the event that agreement cannot be reached in (3), communicate back to the potentially impacted water licensee(s) what management strategies, developed by a QRP, will be undertaken in response to the potential impact.

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<sup>2</sup> Forest and Range Practices Act. [http://www.bclaws.ca/Recon/document/ID/freeside/00\\_02069\\_01](http://www.bclaws.ca/Recon/document/ID/freeside/00_02069_01)

<sup>3</sup> Kamloops LRMP Higher Level Plan Order Amendment.

[https://www.for.gov.bc.ca/tasb/slrp/lrmp/kamloops/kamloops/legal\\_documents/files/legal\\_orders/order\\_kamloops\\_hlp\\_jan06.pdf](https://www.for.gov.bc.ca/tasb/slrp/lrmp/kamloops/kamloops/legal_documents/files/legal_orders/order_kamloops_hlp_jan06.pdf)

<sup>4</sup> Land Act Ministerial Order. Old Growth Management Objectives for the Kamloops LRMP Area dated March 5, 2013.

[https://www.for.gov.bc.ca/ftp/dhw/external/publish/Old\\_Growth\\_Management\\_Order\\_KLRMP\\_Thompson\\_Rivers\\_District/KLRMP%20Old%20Growth%20Management%20Objectives%20Legal%20Order%20March%205%202013.pdf](https://www.for.gov.bc.ca/ftp/dhw/external/publish/Old_Growth_Management_Order_KLRMP_Thompson_Rivers_District/KLRMP%20Old%20Growth%20Management%20Objectives%20Legal%20Order%20March%205%202013.pdf)

<sup>5</sup> FRPA Section 149, FPPR Section 5.

<sup>6</sup> Kamloops LRMP Section 2.1.2 and HLP Order of January 23, 2006



## 5.3 Riparian Management

### 5.3.1 Lakeshore Management

**Objective<sup>7</sup>:** Manage riparian areas, including streams, wetlands and lakes, in accordance with the Forest Planning and Practices Regulation and the Kamloops and Clearwater District Lakeshore Management Guidelines or other applicable management tools or agency agreements.

**Objective<sup>8</sup>:** Maintain a mosaic of angling opportunities within the recreational spectrum (i.e., walk-in lakes, drive-to lakes, trophy lakes).

**Applicable Area:** The LLCF FDU.

**Definitions:**

**Lakes LRUP:** The Kamloops Forest District *Lakes Local Resource Use Plan – Lakeshore Management Guidelines* dated December 20, 2001<sup>9</sup>.

**Classified Lakes:** Lakes classified as outlined in the **Lakes LRUP** and as included in Table 2.

**Table 2: List of Kamloops LRUP Classified Lakes in the LLCF FDU**

Lake Name	Lake ID	Class
Dam Lake	78	C
Connolly Lake	66	C
Eureka Lake	106	C
Wyse Lakes	646	C
Wyse Lakes	1745	C
Wyse Lakes	1746	C
Unnamed	1060	D
Unnamed	1068	C
Unnamed	1095	D
Andrew Lake*	496	C
Face Lake*	531	B
Paska Lake*	592	B
Timber Lake*	350	C
Unnamed*	1160	D

**Result or Strategy:** If carrying out primary forest activities within the lakeshore management zone around **classified lakes**, the FSP Holder will ensure that timber harvesting and road construction are consistent with the intended outcomes of the harvesting guidelines found within the **Lakes LRUP**.

<sup>7</sup> Kamloops LRMP Section 2.1.2.1 and HLP Order of January 23, 2006

<sup>8</sup> Kamloops LRMP Section 2.1.5 and HLP Order of January 23, 2006.

<sup>9</sup> Kamloops LRUP - [https://www.for.gov.bc.ca/ftp/DKA/external/!publish/DKA\\_Lakes\\_Local\\_Resource\\_Use\\_Plan/](https://www.for.gov.bc.ca/ftp/DKA/external/!publish/DKA_Lakes_Local_Resource_Use_Plan/)

\* Lakes are not within the LLCF FDU but are adjacent to or border the LLCF FDU boundary, therefore part of their LMZs will be within the LLCF FDU.

### 5.3.2 General Riparian Management

**Objective<sup>10</sup>:** 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.

**Applicable Area:** The LLCF FDU.

**Definitions:**

**Large S6 Stream:** An S6 stream that is greater than or equal to 1.5 meters in width.

**Small S6 Stream:** An S6 stream that is smaller than 1.5 meters in width.

**Percent Retention:** The percentage of the number of trees (equal to or greater than 12.5 cm dbh) within the Riparian Management Zone that are retained.

**Machine Free Zone:** An area where the tracks or wheels of ground-based machinery are not permitted.

**Stream Crossings:** As outlined in FPPR s. 51 also includes established skid crossings.

**Result or Strategy:** If the FSP Holder carries out primary forest activities:

- 1) The activities will undertake to comply with Sections 47 to 51, 52(2) and 53 of the FPPR as those provisions were on the Commencement Date of this FSP; and in addition
- 2) Retention strategies within harvested portions of the Riparian Management Zones (RMZ) for streams, wetlands and lakes will be implemented as outlined in Table 3, Table 4 and Table 5:
- 3) Where high windthrow hazard exists, as per the windthrow hazard assessment completed by a QRP (see APPENDIX C – Windthrow Hazard Assessment Field Card), and a Riparian Reserve Zone (RRZ) is applied, the percent retention minimums will be increased to 50%.

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<sup>10</sup> FRPA Section 149, FPPR Section 8

**Table 3: Riparian Retention – Streams**

Riparian Class*	Riparian Management Area Width (m)	Riparian Reserve Zone Width (m)	Riparian Management Zone Width (m)	Minimum Percent Retention in the Riparian Management Zone – Streams**
S1 – A	100	0	100	50
S1 – B	70	50	20	25
S2	50	30	20	25
S3	40	20	20	25
S4	25	5	20	25
S5	25	5	20	25
Large S6	25	5	20	25
Small S6	20	0	20	0

\* Refer to definitions of Stream riparian classes found in FPPR Section 47.  
\*\*These are General Objectives for Percent Retention. Site specific factors may require additional retention to meet the objective of ensuring the viability of the RRZ. Site specific factors include water quality and fish habitat protection, level of shading required, sediment filtering, stream bank integrity, etc.

**Table 4: Riparian Retention – Wetlands**

Riparian Class*	Riparian Management Area Width (m)	Riparian Reserve Zone Width (m)	Riparian Management Zone Width (m)	Minimum Percent Retention in the Riparian Management Zone – Wetlands**
W1	50	10	40	25
W2	30	10	20	25
W3	30	10	20	25
W4	30	0	30	25
W5	50	10	40	25

\* Refer to definitions of Stream riparian classes found in FPPR Section 48.  
\*\*These are General Objectives for Percent Retention. Site specific factors may require additional retention to meet the objective of ensuring the viability of the RRZ. Site specific factors include water quality and fish habitat protection, level of shading required, sediment filtering, stream bank integrity, etc.

**Table 5: Riparian Retention – Lakes**

Lake Class*	Riparian Management Area Width (m)	Riparian Reserve Zone Width (m)	Riparian Management Zone Width (m)	Minimum Percent Retention in the Riparian Management Zone – Lakes**
L1-A	0	0	0	-
L1-B	10	10	0	-
L2	30	10	20	25
L3	30	10	20	25
L4	30	10	20	25

\* Refer to definitions of Stream riparian classes found in FPPR Section 49.  
\*\*These are General Objectives for Percent Retention. Site specific factors may require additional retention to meet the objective of ensuring the viability of the RRZ. Site specific factors include water quality and fish habitat protection, level of shading required, sediment filtering, stream bank integrity, etc.

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- 4) A 5 meter **Machine Free Zone** will be established adjacent to all S4, **small S6 streams** and W4 wetlands, and RRZs for the purpose of retaining brush species, disease free advanced regeneration and non-merchantable/ commercial stems, except where the FSP Holder is:
    - a) Establishing **stream crossings**;
    - b) Carrying out hand falling;
    - c) Carrying out cable or aerial yarding across or adjacent to the stream;
    - d) Removing trees to address a safety concern; or
    - e) Carrying out vegetation management treatments to meet free growing requirements.
  - 5) Within the Riparian Management Zone, retain on each side of each 100 meter length of **small S6 streams** proportionate to the length of the stream, an average of not less than 15 live overstorey<sup>11</sup> trees unless:
    - a) The trees to be retained are infested or diseased by a forest health agent that would spread if the trees were not removed,
    - b) Working within 5 meters of either side of a skid crossing, or within the right-of-way of a **stream crossing**,
    - c) The stream reach is located in a harvest unit that is being harvested by a cable or an aerial yarding system,
    - d) There are an insufficient number of live overstorey trees found within 10 meters of the stream in which case the existing pre-harvest live overstorey trees within 10 meters of the stream will be retained, or
    - e) The trees are removed because they are danger trees, or
    - f) The area is subject to a high windthrow hazard as identified in an evaluation carried out by a QRP.

## 5.4 Biodiversity

### 5.4.1 General Biodiversity

**Objective<sup>12</sup>:** To conserve the diversity and abundance of native species and their habitats throughout the Kamloops LRMP.

**Applicable Area:** The LLCF FDU.

**Result or Strategy:** The strategies in the following sections of this FSP are the strategies for this objective:

- Section 5.4.2 – Landscape Level Biodiversity
- Section 5.4.3 – Old Growth Management Areas

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<sup>11</sup> Overstorey trees as defined by the Ministry of Forests and Range "Glossary of Forestry Terms in British Columbia", March 2008: "The uppermost continuous layer of a vegetation cover; for example, the tree canopy in a forest ecosystem."

<sup>12</sup> Kamloops LRMP Section 2.1.3.1 and HLP Order of January 23, 2006

- Section 5.4.4 – Stand Level Biodiversity
- Section 5.3 – Riparian Management
- Section 5.5 – Wildlife and Species at Risk

## 5.4.2 Landscape Level Biodiversity

**Objective<sup>13</sup>:** 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.

**Applicable Area:** The LLCF FDU.

**Result or Strategy:** When the FSP Holder carries out primary forest activities, the FSP Holder will ensure that the activities are designed and carried out in a manner that is consistent with the requirements of Sections 64 and 65 of the FPPR.

## 5.4.3 Old Growth Management Areas

**Objective<sup>14</sup>:**

- 1) Conserve biodiversity by retaining old forest values and attributes, or rare features within OGMA<sup>15</sup> across the landscape units over time.
- 2) Maintain all timber within OGMA<sup>15</sup> except as required to accommodate the following purposes:
  - a) To prevent the spread of insect infestation or disease that pose a significant threat to forested areas external to the OGMA;
  - b) To address safety hazards associated with primary forest activities;
  - c) To provide for guyline clearance and tailhold anchors;
  - d) To address fuel management concerns and related safety hazards;
  - e) To provide road access where no alternative practicable option for road location exists;  
or
  - f) To facilitate timber harvesting that will result in operationally practicable cutblock boundaries.
- 3) Primary forest activities conducted for the purposes under Objective #2 must:
  - a) Be conducted to the minimum extent necessary to accommodate the purpose; and

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<sup>13</sup> FRPA Section 149, FPPR Section 9

<sup>14</sup> Land Act Ministerial order. Old Growth Management Objectives for the Kamloops LRMP Area dated March 5, 2013.

<sup>15</sup> As identified in the 2013 Land Act Ministerial Order and as modified from time to time by OGMA incursions/replacements in accordance with the Order.

- b) Not exceed the lesser of two hectares or 10% of an individual OGMA polygon per 20 year timeframe.

**Applicable Area:** The LLCF FDU.

**Result or Strategy:** The FSP Holder will carry out primary forest activities in a manner that is consistent with the March 5, 2013 *Land Act* Ministerial Order establishing old growth management objectives for the Kamloops LRMP Area.

#### 5.4.4 Stand Level Biodiversity

**Objective<sup>16</sup>:** The objective set by government for wildlife and biodiversity at the stand level is, without unduly reducing the supply of timber from British Columbia's forests, to retain wildlife trees.

**Applicable Area:** The LLCF FDU.

**Definition:**

**Vicinity of:** An area that is sufficiently close so that the wildlife trees could directly impact on, or be directly impacted by, the replacement wildlife tree retention.

**Reserve Areas:** Areas located within or outside the FDU that are set aside as reserved areas, including old growth management areas, riparian reserve zones, existing wildlife tree patches, leave trees, or parks and protected areas, to the extent these areas provide suitable wildlife habitat and assist in the conservation of stand level biodiversity.

**Result or Strategy:**

- 1) Subject to strategy 2 and 3, when the FSP Holder carries out primary forest activities, the FSP Holder will ensure that at the conclusion of harvesting the total area covered by Wildlife Tree Retention Areas (WTRA) that relate to a notice of commencement will be not less than 7% of the total block area of the cutblocks within that notice, and the WTRA that relates to a single cutblock within that Notice of Commencement will not be less than 3.5%. Exact location and amount of WTRA will be guided by a QRP considering the principles found in FPPR Schedule 1(3)(2).
- 2) WTRA may not be established where the cutblock is less than 5 ha and there are existing **reserve areas** in the **vicinity of** the cutblock.
- 3) WTRA will be proportional to the basal area of the stand being removed.
- 4) The FSP Holder will not carry out timber harvesting within a WTRA, except where:
  - a) The trees on the Net Area to be Reforested (NAR) of the cutblock to which the WTRA relates have developed attributes that are consistent with a mature seral condition; or

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<sup>16</sup> FRPA Section 149, FPPR Section 9.1

- b) A QRP has determined that no other practicable option for a road location exists.
- 5) Where the FSP Holder carries out timber harvesting within an existing WTRA, the harvested WTRA will be replaced with an equal area of WTRA with similar stand characteristics, that is:
  - a) In an area that is contiguous to the existing WTRA, or
  - b) In an area in the **vicinity of** the existing WTRA.

## 5.5 Wildlife and Species at Risk

### 5.5.1 Critical Mule Deer Winter Range

#### **Objectives:**<sup>17</sup>

1. Maintain or enhance forage production and habitat requirements in critical deer winter range.
2. Disperse the timber harvest throughout the winter range and spread it out evenly over the rotation.
3. Maintain at least 25% of forested area in the thermal cover. Link thermal cover units together with suitable travel corridors, especially mature Douglas-fir vets on ridges.

**Applicable Area:** Critical Deer Winter Range, as identified in the Kamloops HLP Ministerial Order dated January 8, 2009.

#### **Definitions:**

**Critical Deer Winter Range:** An area that is Crown land and identified as Critical Deer Winter Range in Kamloops HLP Ministerial Order dated January 8, 2009.

#### **Suitable Snow Interception Cover (SIC)**<sup>18</sup>:

1. A forest area that is greater than 0.25 hectares in size, conifer leading (with preference given to Douglas-fir (*Pseudotsuga menziesii*) leading stands) and has a crown closure class of:
  - a) 2 or greater in the PP BEC zones; or
  - b) 4 or greater in all other BEC zones.

**Planning Cell:** An area of crown forested land within a Critical Deer Winter Range that is up to 800 hectares in size.

**Suitable Travel Corridors:** Areas identified through an assessment carried out by a QRP that are generally suitable for mule deer travel during winter. Specific attention will be given to Douglas-fir (*Pseudotsuga menziesii*) vets (e.g. 65 cm or greater) on ridges.

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<sup>17</sup> Kamloops LRMP HLP Order dated January 8, 2009. Kamloops LRMP sections 2.1.12.1 and 2.5.2.

<sup>18</sup> Snow interception cover is equated with and assumed to provide security cover and thermal cover.

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**Result or Strategy:** When carrying out primary forest activities in an area within **Critical Deer Winter Range**, the FSP Holder will:

- 1) Not cause less than 25% of the forested area in each **planning cell** to be retained as **suitable Snow Interception Cover (SIC)** with retention of Douglas-fir leading **SIC** stands taking priority.
- 2) Subject to #1, and to the extent practicable, areas of **suitable SIC** will be linked together with **suitable travel corridors**.

## 5.5.2 Critical Moose Winter Range

### **Objectives:**<sup>19</sup>

1. Maintain thermal and visual cover for moose, and enhance browse production.
2. Maintain suitable forest cover attributes with respect to thermal cover and forage production.

**Applicable Area:** Critical Moose Winter Range as identified in the Kamloops HLP Ministerial Order January 8, 2009.

### **Definitions:**

**Extended Use Roads:** Newly constructed roads that are planned for more than 2 years of use for forestry activities.

**Moose Forage:** Palatable species of plants that are a food source for Moose. These plants include Salix spp., red-osier dogwood and Betula spp.

**Moose Habitat:** Wetlands in **Moose Winter Range** that are either 200 meters in length or greater than one hectare in size, and contain habitat features required by Moose as defined by a QRP.

**Moose Winter Range:** Areas identified in Map 1 of the Kamloops LRMP (2009) as critical Moose Winter Range (see Appendix A).

**Moose Management Units:** 200 meter buffer around **Moose Habitat**.

**Visual Screening:** Vegetation and/or topography providing visual obstruction that makes it difficult to see into adjacent areas from the roadbed.

**Result or Strategy:** Where carrying out primary forest activities in an area within **Moose Winter Range**, the FSP Holder will:

- 1) Pursue mixed forest management with similar species distribution to natural stands (including deciduous)<sup>20</sup> contingent on alignment with approved stocking standards;
- 2) Within each **Moose Management Unit**, retain at least 67% of the forested area equal to or greater than 20 years of age;

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<sup>19</sup> Kamloops LRMP HLP Order dated January 8, 2009. Kamloops LRMP sections 2.1.12.2, 2.5.1 and 2.5.2.

<sup>20</sup> Section LRMP 2.1.12.2 of the Kamloops LRMP



- 3) Where present, retain **visual screening** along those **extended use roads** that are located within 100 meters of a **Moose Management Unit**; and
- 4) Retain **moose forage** during silviculture activities (including brushing, weeding and stand tending) unless retaining **moose forage** impedes the ability of a stand to reach free growing status.

### 5.5.3 Flammulated Owl

**Objective:**<sup>21</sup> Ensure habitat needs of all naturally occurring wildlife species are provided for. Special attention will be paid to those red- and blue- listed species, as defined by Ministry of Environment, and species designated as regionally important (e.g. Mule Deer).

**Applicable Area:** The LLCF FDU.

**Definitions:**

**Occurrence Site:** A site where Flammulated Owl has been

- (i) Identified by the BC Conservation Data Centre<sup>22</sup>; or
- (ii) Where identified by a QRP.

**Core Area:** An area not less than 4 hectares incorporating an **occurrence site**.

**Management Area:** An area located 100 meters (slope distance) beyond the edge of a **core area**.

**Result or Strategy:** When carrying out primary forest activities within a **core area** or **management area**, the FSP Holder will:

- 1) Practice partial cutting systems that maintain greater than 50% of the dominant and co-dominant trees (stems), with retention of ponderosa pine and aspen where they exist;
- 2) Retain all ponderosa pine, aspen, Douglas-fir and larch greater than 64 cm dbh<sup>23</sup>;
- 3) Avoid harvesting xeric sites;
- 4) Not conduct harvesting during the breeding season (June 1 to August 31); and
- 5) Not employ the use of pesticides.

### 5.5.4 Lewis's Woodpecker

**Objective:**<sup>24</sup> Ensure habitat needs of all naturally occurring wildlife species are provided for. Special attention will be paid to those red- and blue- listed species, as defined by Ministry of Environment, and species designated as regionally important (e.g. Mule Deer).

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<sup>21</sup> Kamloops LRMP Section 2.1.12 and HLP Order of January 23, 2006

<sup>22</sup> <http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/data-reporting/conservation-data-centre>

<sup>23</sup> Accounts and Measures for Managing Identified Wildlife; Southern Interior Forest Region Version 2004 found at [http://www.env.gov.bc.ca/wld/frpa/iwms/documents/Accounts\\_and\\_Measures\\_South.pdf](http://www.env.gov.bc.ca/wld/frpa/iwms/documents/Accounts_and_Measures_South.pdf)

<sup>24</sup> Kamloops LRMP Section 2.1.12 and HLP Order of January 23, 2006

**Applicable Area:** The LLCF FDU.

**Definitions:**

**Occurrence Site:** A site where Lewis's Woodpecker has been:

- (i) Identified by the BC Conservation Data Centre<sup>25</sup>; or
- (ii) Where identified by a QRP.

**Core Area:** A 100 m radius around an **occurrence site**.

**Management Area:** An area 100 meters<sup>26</sup> (slope distance) beyond the edge of a **core area**.

**Result or Strategy:**

- 1) The FSP Holder will not carry out primary forest activities within a **core area**.
- 2) When carrying out primary forest activities within a **management area**, the FSP Holder will, where practicable:
  - a) Retain all black cottonwood, ponderosa pine and Douglas-fir greater than 55 cm dbh,
  - b) Retain at least 6 dead standing trees greater than 45 cm dbh where they exist, focusing on non-hazardous trees, and
  - c) Not employ the use of pesticides.

## 5.6 Visual

### 5.6.1 Visually Sensitive Areas

**Objective 1 (FPPR):** Known scenic areas<sup>27</sup> with established visual quality objectives (VQOs).

**Objective 2<sup>28</sup> (Kamloops LRMP):** The primary objective of management in Visually Sensitive Areas is to ensure that the levels of visual quality expected by society are achieved on Crown land in keeping with the concepts and principles of integrated resource management.

**Objective 3<sup>29</sup> (Kamloops LRMP):** Maintain viewsapes in recreation and tourism areas to a standard that does not detract from the recreational enjoyment of users.

**Applicable Area:** Within Visually Sensitive Areas<sup>30</sup> and Scenic Areas<sup>31</sup> within the LLCF FDU.

**Result or Strategy:** The FSP Holder will:

- 1) Prior to carrying out primary forest activities, ensure a QRP designs cutblock harvesting and road construction such that the visual alteration, that will result from the design, is consistent

<sup>25</sup> <http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/data-reporting/conservation-data-centre>

<sup>26</sup> Accounts and Measures for Managing Identified Wildlife; Southern Interior Forest Region Version 2004 found at [http://www.env.gov.bc.ca/wd/frpa/iwms/documents/Accounts\\_and\\_Measures\\_South.pdf](http://www.env.gov.bc.ca/wd/frpa/iwms/documents/Accounts_and_Measures_South.pdf)

<sup>27</sup> FRPA Section 180 & 181. Grandparented VQOs.

<sup>28</sup> Kamloops LRMP Section 2.1.14.2 and HLP Order of January 23, 2006

<sup>29</sup> Kamloops LRMP Section 2.6.1 and HLP Order of January 23, 2006

<sup>30</sup> Fig 5 of the KLRMP (July 28, 1995)

<sup>31</sup> Scenic Areas with VQOs as defined by District Manager direction.

- with the applicable category described in *FPPR Sec 1.1 Categories of Visually Altered Forest Landscapes*; and
- 2) Conduct harvesting and road construction consistent with the VQO.

## 5.6.2 Areas outside Visually Sensitive Areas

**Objective:** Areas outside the identified Visually Sensitive Areas in the Kamloops LRMP are managed for landscape objectives as follows: alterations may dominate the characteristic landscape but must borrow from natural line and form to such an extent and on such a scale that they are comparable to natural occurrences.<sup>32</sup>

**Applicable Area:** Areas outside the identified Visually Sensitive Areas in the LLCF FDU.

**Result or Strategy:**

- 1) Prior to carrying out primary activities, the FSP Holder will ensure that activities will mimic natural landscape occurrences and follow natural line and form, and
- 2) Conduct primary activities consistent with the objectives, as defined by District Manager, for grandparented Scenic Areas where they are present.

## 5.7 Cultural Heritage Resources / Archaeological Assessments

**Objective<sup>33</sup>:** The objective set by government for cultural heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and not regulated under the *Heritage Conservation Act*.

**Objective<sup>34</sup>:** Undertake archaeological assessments in all High and Medium Potential areas identified in the Archaeological Overview Assessment.

**Applicable Area:** The LLCF FDU.

**Definitions:**

**Potentially Affected Archaeological Resources:** The physical remains of past human activity as defined by the *Heritage Conservation Act* that are susceptible to damage caused by primary forest activities<sup>35</sup>, as identified by a variety of assessments, including an Archaeological Evaluation as determined by the current 'Guidelines for the Archaeological Overview Assessment (AOA) Process for Forest Development Planning in the Kamloops TSA'<sup>36</sup>, or an

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<sup>32</sup> Kamloops LRMP Section 2.1.14.1 and HLP Order of January 23, 2006

<sup>33</sup> FPPR Section 10

<sup>34</sup> Source: Kamloops LRMP Section 2.1.16 and HLP Order of January 23, 2006

<sup>35</sup> This definition was taken from the following report:

[https://www.for.gov.bc.ca/Archaeology/docs/resource\\_management\\_handbook/index.htm](https://www.for.gov.bc.ca/Archaeology/docs/resource_management_handbook/index.htm)

<sup>36</sup> [https://www.for.gov.bc.ca/dka/DistrictPoliciesProcedures/Archaeology/Docs/Implementation%20Guidelines%20Sept%202013\\_V2\\_0.pdf](https://www.for.gov.bc.ca/dka/DistrictPoliciesProcedures/Archaeology/Docs/Implementation%20Guidelines%20Sept%202013_V2_0.pdf)

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archaeological assessment that complies with the *Heritage Conservation Act*, as carried out by First Nations.

**Potentially Affected Cultural Heritage Resource (CHR):** A cultural heritage resource (CHR), geographically associated with the planned forest harvesting, road building or site prep activities, to which the objective set by government in Section 10 of the FPPR pertains.

**Potentially Affected First Nations:** Those First Nations with interest within an area as defined by the Consultative Areas Database<sup>37</sup> or its replacement, or is likely related to the Affected Archaeological Resources.

**Result or Strategy:** Prior to carrying out primary forestry activities, the FSP Holder will:

- 1) Follow any development specific or general protocols that are developed and agreed to with **potentially affected First Nations**.
- 2) In the absence of general or specific protocols:
  - a) Refer the areas identified for proposed forest harvesting, road construction or site preparation to **potentially affected First Nations** to request specific information regarding CHRs and Archaeological Resources.
  - b) If the **potentially affected First Nation** makes the FSP Holder aware of the presence of an **potentially affected CHR** or a **potentially affected Archaeological Resource** in or adjacent to a proposed cutblock or road, work with the **potentially affected First Nation** to develop and implement strategies to mitigate the direct impact<sup>38</sup> of the proposed forest harvesting, site preparation or road construction on:
    - i. the **potentially affected Archaeological Resource**, or
    - ii. the **potentially affected CHR** based on:
      1. The relative value or importance of the **potentially affected CHR** to a traditional use by a First Nation;
      2. The relative abundance or scarcity of the **potentially affected CHR**;
      3. The historical extent of the traditional use of the **potentially affected CHR**;
      4. Options for mitigating the impact of the proposed primary forest activities on the **potentially affected CHR**; and

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<sup>37</sup> <http://maps.gov.bc.ca/ess/sv/cadb/>

<sup>38</sup> Direct impact refers to impacts that would be related in time and space to the primary forest activities being conducted, and not inter-related processes that LLCF does not have control over nor could realistically be predicted.

5. The impact that conserving or protecting the **potentially affected CHR** has on the FSP Holder's ability to implement the proposed primary forest activities.
  - c) In the event that an agreement cannot be reached regarding the **potentially affected CHR** or **potentially affected Archaeological Resource**, the holder of this FSP will develop and implement management strategies<sup>39</sup> to mitigate the direct impact of the primary forest activities on the **potentially affected CHR** or **potentially affected Archaeological Resource**, communicate the nature of the management strategies back to the **potentially affected First Nation** and District Staff.
  - d) If a specific previously unidentified **potentially affected CHR** or **potentially affected Archaeological Resource** is identified during forest harvesting, road construction or site preparation activities, modify or stop work to the extent necessary to protect the **potentially affected CHR** or **potentially affected Archaeological Resource**, then complete 2(a) to (c), and inform District Staff of the unidentified resource.

## 5.8 Range

**Objective<sup>40</sup>:** Minimize tree, grass and cattle conflicts through integrated management practices.

**Applicable Area:** The LLCF FDU.

**Definitions:**

**Range Tenure Holder:** A holder of a range license or a grazing lease, or in the case of a vacant range unit the Thompson Rivers Natural Resource District.

**Integrated Management Practices:** Management practices that endeavor to result in the least negative impacts on all resource values involved (e.g. trees, grass, and cattle) and focus on preventing conflicts between the timing of forestry operations and range activities<sup>41</sup>.

**Result or Strategy:** Before carrying out primary forest activities, the FSP Holder will:

- 1) Inform the **Range Tenure Holder(s)** of primary forest activities within or adjacent<sup>42</sup> to their range tenure;
- 2) Where a **Range Tenure Holder(s)** indicates that conflict between timber and range management may arise, work with the potentially impacted **Range Tenure Holder(s)** to

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<sup>39</sup> Management strategies based on 2(b)(i) to 2(b)(v) for Affected CHRs, and in compliance with the *Heritage Conservation Act* for Affected Archeological Resources.

<sup>40</sup> Kamloops LRMP Section 2.1.10 and HLP Order of January 23, 2006

<sup>41</sup> As adapted from the Kamloops LRMP.

<sup>42</sup> Within 500 meters of.

develop strategies to minimize or mitigate the potential impact of the proposed activities on the range tenure(s) through **integrated management practices**.

- 3) In the event that agreement cannot be reached in (2), communicate back to the **Range Tenure Holder(s)** and District Range Staff what management strategies, developed by a QRP, will be undertaken in response to the potential conflict.

## 6 Measures – Natural Range Barriers and Invasive Plants

### 6.1 Natural Range Barriers

A person who prepares a forest stewardship plan must specify measures to mitigate the effect of removing or rendering ineffective natural range barriers.<sup>43</sup> The following measures will be undertaken by the FSP Holder in the LLCF FDU areas that contain, or are adjacent to range tenures.

**Applicable Area:** The LLCF FDU.

**Definitions:**

**Range Tenure Holder:** A holder of a range license or a grazing lease, or in the case of a vacant range unit the Thompson Rivers Natural Resource District.

**Natural Range Barrier:** A river, rock face, dense timber or other naturally occurring feature that stops or significantly impedes livestock movement to and from an adjacent area.<sup>44</sup>

**Measures:** Before carrying out primary forest activities, the FSP Holder will:

- 1) Inform the **Range Tenure Holder(s)** of primary forest activities within or adjacent to (within 500 meters) their range tenure(s) and request that the **Range Tenure Holder(s)** identify the location of **Natural Range Barriers** that may be rendered ineffective by the proposed primary forest activities.
- 2) Where a **Range Tenure Holder(s)** indicates that primary forest activities may remove or render ineffective a **Natural Range Barrier**, work with the potentially impacted **Range Tenure Holder(s)** to develop strategies to minimize or mitigate the potential impact of the proposed activities on the **Natural Range Barrier**.
- 3) Where a breach of a **Natural Range Barrier** is brought to the attention of the FSP Holder following the implementation of primary forestry activities, the FSP Holder will develop and implement strategies to rectify the breach to the extent that it was caused by the primary forestry activities.

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<sup>43</sup> FRPA Section 48, FPPR Section 18

<sup>44</sup> Ministry of Forests and Range Definitions of Forestry Terms as referenced in FRPA General Bulletin #21. February 2009.

- 4) In the event that agreement cannot be reached in (2), communicate back to the **Range Tenure Holder(s)** and District Range Staff what management strategies, developed by a QRP, will be undertaken in response to the potential impact.

## 6.2 Invasive Plants

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 is likely to be a result of the person's forest practices.<sup>45</sup>

**Applicable Area:** The LLCF FDU.

**Definitions:**

**Invasive Plant Species:** Those plants defined in the Invasive Plants Regulation (January 31, 2004) as amended from time to time.

**Personnel:** Means the persons working on behalf of the Holder of this FSP conducting activities such as road and cutblock development, site plan data collection, road and logging supervision, and silviculture surveys.

**Measures:** The FSP holder will:

- 1) The Holder of this FSP will provide annual training to personnel on reporting and identification of **invasive plant species**.
- 2) Prior to carrying out primary forestry activities, consult the Invasive Alien Plant Program (IAPP) Application<sup>46</sup> database to determine known **invasive plant species** sites.
- 3) The Holder of this FSP will ensure that a previously unidentified **invasive plant species** infestation within the FDU, as identified by **personnel**, is reported through the Report-A-Weed app ([www.gov.bc.ca/invasive-species](http://www.gov.bc.ca/invasive-species)) within 90 days of the Holder of this FSP becoming aware of the new infestation.
- 4) Where machinery will be working in known **invasive plant species** sites, advise the operator of the machinery to remove any observed plant material, or significant accumulations of soil which may contain plant material, from the machinery prior to that machinery being relocated outside of the cutblock or road.
- 5) During cutblock and road design, avoid infested sites when determining staging, parking and log sorting areas.
- 6) Prior to carrying out primary forest activities that will result in creating contiguous areas of disturbed soil equal to or greater than 0.01 hectares, ensure that, within one year of the completion of the activities, the portions of the area occupied by ditch-lines, cut or fill slopes,

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<sup>45</sup> FRPA Section 47, FPPR Section 17

<sup>46</sup> <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/invasive-species/iapp>

- and deactivated roads (which are not reforested and not including active road running surfaces) will be seeded using:
- a) Seed or forage mixture that meets or exceeds Canada Common Number 1 Forage Mixture as defined by the *Canada Seeds Act* and Regulation;
  - b) Native forbs or shrubs, and/or
  - c) A non-palatable seed mixture approved by District range staff in areas where cattle presence is to be avoided.
- 7) Where areas have been seeded in (6), inspect the areas within 12 months of seeding to ensure successful establishment (> 80% cover) and repeat one additional seeding as necessary.



## 7 Stocking Standards

All stocking requirements are applicable across the entire FSP area (LLCF FDU).

*Legal Reference:* Section 29 (1) of the *Forest Act* and Section 16 and 44(1) of the FPPR

*Scale of Measurement:* Cutblock

*Map Reference:* N/A

Where required under FRPA to establish a free growing stand with respect to timber harvesting governed by this FSP, the FSP Holder will do so in accordance with the coniferous (even-aged), coniferous (uneven-aged), and deciduous stocking standards in Appendix B.

## 8 Signatures of Preparing Forester and Person Required to Prepare Plan

	<p>Preparing Forester</p> <p><i>"I certify that I have determined that this work was performed to an acceptable standard"</i></p>
<p><b>Randy Spyksma, M.Sc., R.P.F #3259</b> Forsite Consultants Ltd.</p>	

	<p>Signature of Person Required to Prepare the Plan</p>
<p><b>Claire Newman</b> <b>Chair, Board of Directors</b> <b>Logan Lake Community Forest Corporation</b></p>	

## APPENDIX A – Forest Stewardship Plan Map

Table 6: List of Map Layers for the Logan Lake Community Forest – Forest Stewardship Plan

FSP Map Details	Map Layer Name(s)
Ungulate Winter Ranges	Critical Deer Winter Range Critical Moose Winter Range
Wildlife Habitat Areas	Wildlife Habitat Areas
L1 Lakes	Classified Lakes
Lakeshore Management Zones	Classified Lakes
Scenic Areas	Visual Quality Objectives
Old Growth Management Areas	Old Growth Management Areas
Harvesting Prohibited by Enactment	FDU Exclusion Areas (includes: Private Land, Indian Reserve, Crown Misc. Reserve, Woodlot Licence, Timber Licenses, Proposed First Nation Woodlot Licences (FNWL), and Provincial Parks)

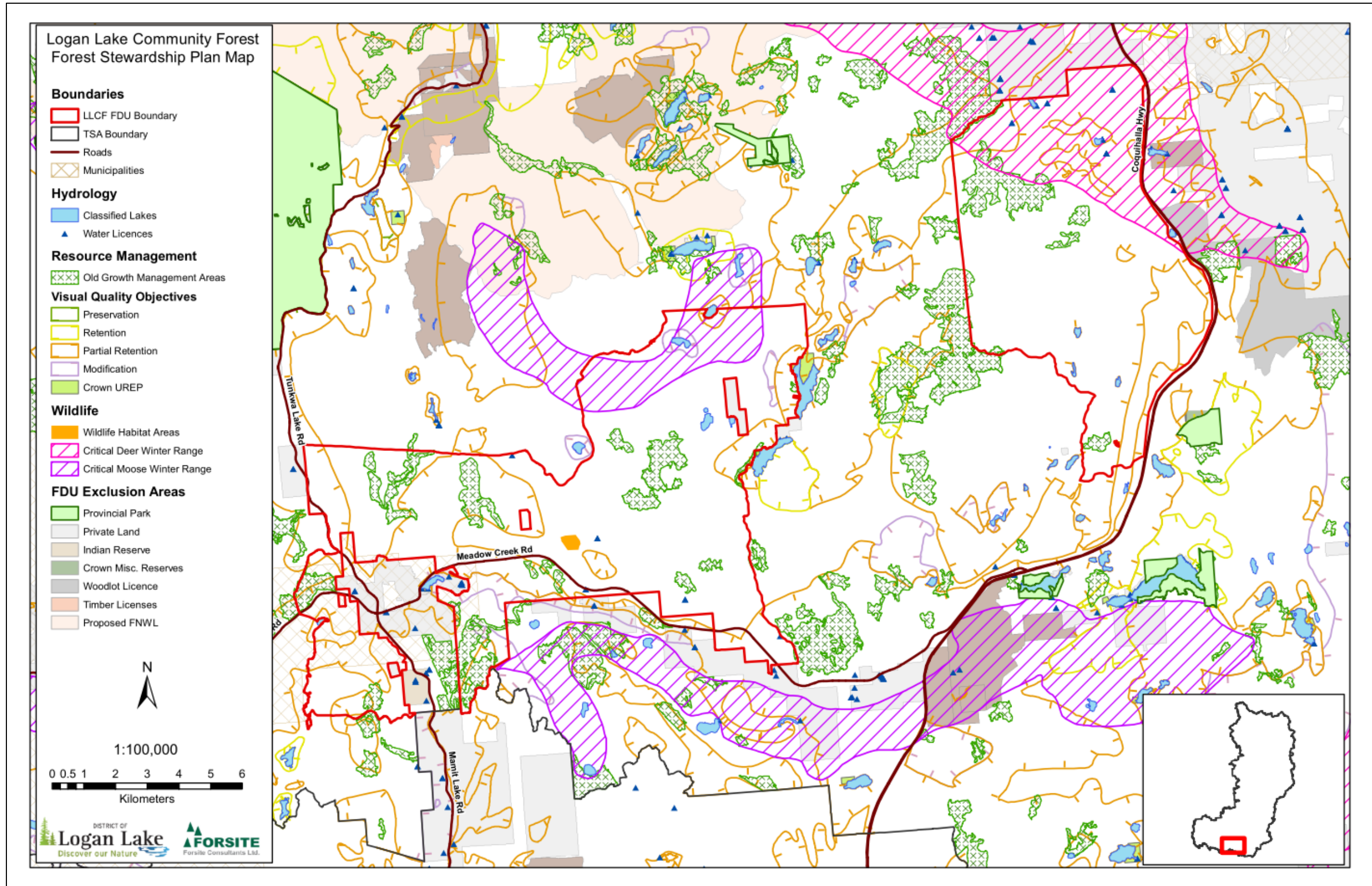


Figure 2: Logan Lake Community Forest – Forest Stewardship Plan Map

## APPENDIX B – Stocking Standards

All stocking requirements are applicable across the entire FDU. The standards and criteria support stocking areas with ecologically suitable species that address immediate and long-term forest health issues on the area to a density that (in either case) is consistent with:

- (a) Maintaining or enhancing an economically viable supply of commercial timber from British Columbia's forests; and
- (b) The timber supply analysis and forest management assumptions that apply to the area covered by the plan on the Submission Date.

### B.1 General Discussion

#### B.1.1 Clearcut and Clearcut with Reserves – Even-aged Stocking Standards

Where no significant residual tree retention has been identified, then even-aged stocking standards, for the appropriate BEC subzone and site series, will be applied as permitted under this FSP. Even-aged stocking standards are identified in Table 7.

#### B.1.2 Partial Cutting – Even-aged Stocking Standards

Where retention is greater than 5 m<sup>2</sup>/ha and less than required to be considered uneven-aged management, then even-aged stocking standards will be applied as identified in Table 7, and layered survey methodology will apply as per the *Silviculture Survey Procedures Manual*. Where the results of a survey indicate that the combined stocking in all four layers is less than MSSp or MSSpa, then a Deviation from Potential (DFP) survey methodology may be used to rationalize a regeneration delay or free growing milestone as per the stocking decisions flow chart in Table 11.

Details of the DFP methodology and process are contained in Section B.4.1.

#### B.1.3 Single Tree Selection and Small Patch Group Selection – Uneven-aged Stocking Standards

Where significant residual tree retention has been identified and the tree retentions is not a result of commercial thinning, or a similar type of intermediate cutting, then uneven-aged stocking standards for the appropriate BEC subzone and site series will be applied as permitted under this FSP. Uneven-aged stocking standards are appropriate for single tree selection or small group selection silviculture systems. For stands managed for uneven-aged management, the target stocking standard and minimum stocking standard for the relevant BEC subzone and site series are determined by cross-referencing the target stocking for an even-aged stand as found in Table 7 and using Table 8 to provide the uneven-aged stocking standard. Where these standards apply, then multi-story survey methodology will apply.

### **B.1.4 Mixedwood Stocking Standards**

Mixedwood stocking standards for the appropriate BEC subzone and site series may be applied as permitted under this FSP where neither the broadleaf nor the conifer tree species comprise more than 80% of the cruise gross basal area or volume of the stand. It is estimated this standard will influence less than 5% of the free growing obligation area. For stands managed for mixedwood, the target stocking standard and minimum stocking standard for the relevant BEC zone, subzone, and site series are determined by cross-referencing the target stocking for an even-aged stand as found in Table 7 and using Table 9 to provide the mixedwood stocking standards. Free growing height for deciduous species will be equal to the tallest conifer height for the site series and stocking standard ID.

### **B.1.5 Broadleaf Stocking Standards**

Broadleaf stocking standards for the appropriate BEC subzone and site series may be applied as permitted under this FSP where the broadleaf tree species comprise more than 80% of the cruise gross basal area or volume of the stand. It is estimated this standard will influence less than 5% of the free growing obligation area. For stands managed for broadleaf crop trees, the target stocking standard and minimum stocking standard for the relevant BEC zone, subzone and site series are determined by cross-referencing the target stocking for an even-aged stand as found in Table 7 and using Table 9 to provide the broadleaf stocking standards. Free growing height for deciduous species will be equal to the tallest conifer height for the site series and stocking standard ID.

### **B.1.6 Intermediate Cuttings**

Intermediate cuttings are those treatments where greater than 50% of the pre-harvest basal area (total live and dead<sup>47</sup>) has been retained in live stems, for management purposes as identified in the *Silvicultural Systems Guidebook*. These treatments are where an intermediate harvest entry is designed to modify the stand so that continued stand development will enhance the quality or growth of established trees. Assuming post-harvest stand structure goals are identified and met in these stands, then “no regeneration obligation” is incurred<sup>48</sup>.

### **B.1.7 Minimum Stocking Standards (MSSpa and MSSp)**

If the Site Plan doesn't specify any acceptable species, then MSSp equals MSSpa.

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<sup>47</sup> Dead basal area is interpreted to include both standing and down trees.

<sup>48</sup> “No regeneration obligation” refers to the reality that planting may not be needed, but there is an understanding that free growing obligation is still in effect.

### **B.1.8 Minimum Inter-Tree Distance**

A 2.0 meter minimum inter-tree distance is considered suitable for most sites, however, a reduced minimum inter-tree distance may be appropriate where suitable growing spots are limited by site characteristics, site conditions, management objectives constraining site utilization, or there is a significant risk of damage to planted or natural trees. The decision to reduce the minimum inter-tree distance will be made based on a field assessment and/or identified in a Site Plan. The minimum inter-tree distance will not be reduced to less than 1.0 meters.

Examples of situations and circumstances where a reduced minimum inter-tree distance may be appropriate include, but are not limited to:

- Hygric or wetter sites;
- Rocky sites;
- Mechanical site preparation areas (including mounding, disc trenching, or mechanical screefing);
- Group planting area (e.g. wildlife habitat areas or for wildlife management purposes);
- Areas with a high potential for cattle congregation or areas where seedling damage is expected due to cattle or wildlife trampling;
- Sites with a significant number of wildlife trees;
- Riparian management zones with a high residual component;
- Sites that will be stumped to manage root disease;
- Partial cut areas with an abundance of residual regeneration;
- Very harsh sites where protected microsites are critical (e.g. shade, snow creep); or
- Areas with an abundance of unavoidable slash loading.

### **B.1.9 Free Growing Evaluation for Brush and Upland Deciduous**

The free growing guideline method will be used to evaluate individual crop trees to determine if they have met the requirements for free growing relative to brush and upland deciduous competition.

For assessing vegetation communities that include broadleaf tree competition, the conifer to brush ratio will be 125% for all BEC zones in the LLCF FDU. Refer to Appendix 9 of the *Establishment to Free Growing Guidebook - Kamloops Forest Region* for the evaluation process.

### **B.1.10 Characteristics of Retained Trees**

In the situation or circumstances where trees are retained to form either an even-aged or an uneven-aged stand following timber harvesting, the minimum characteristics of trees to be considered as acceptable future stocking will be consistent with the tree characteristics as specified in the *Silviculture Survey Reference Cards (FS 660 2014/05/08)*.

### **B.1.11 Regeneration Delay**

Regeneration delay will be 4 years unless the Site Plan identifies natural regeneration for the block or standards unit, in which case the regeneration delay will be increased to a maximum of 7 years.

### **B.1.12 Maximum Density**

Lodgepole pine leading stands are stands where the pine component is equal to or greater than 80% of the inventory label. Maximum density for lodgepole pine leading stands is 25,000 countable stems per hectare.

For all other species and mixed pine stands where the pine component is less than 80% by inventory, maximum density will be 10,000 countable stems per hectare.

## **B.2 Variations to Standards**

### **B.2.1 Utilization of Western Larch**

Western larch will be considered an acceptable species of up to 10% of the well-spaced and/or free growing trees where it is planted, and where it is consistent with the transfer guidelines found within the *Chief Forester's Standards for Seed Use*. Any further amendments or updates to the interim measures for the range of use of western larch will be followed. The new *Climate-Based Seed Transfer System* will apply to western larch when released. The minimum free growing height for western larch will be the same as the corresponding pine species for the given BEC subzone and site series.

### **B.2.2 Utilization of Western Larch for Root Rot Management**

Western larch will be a preferred species when it is planted to mitigate future root rot losses and the site is not stumped. Western larch will be an acceptable species where it is planted to mitigate future root rot losses and the site is stumped. Western larch will only be deemed preferred or acceptable when it is planted consistent with seedling transfer guidelines found within the *Chief Forester's Standards for Seed Use* and is deemed ecologically suitable. Any further amendments or updates to the interim measures for the range of use of western larch will be followed. The minimum free growing height for western larch will be the same as the corresponding pine species for the given BEC subzone and site series.



### **B.2.3 Fire Management Stocking Standards**

Where LLCF is developing timber in areas with wildfire management objectives, the *Fire Management Stocking Standards Guidance Document 2016*<sup>49</sup> stocking standards could be applied. Applications of these stocking standards will be pre-approved by the Designated Decision Maker (DDM).

### **B.2.4 Application of Stocking Standards**

Cutblocks approved under a previous FSP or FDP will be subject to the previous FSP or FDP, unless the Holder of this FSP takes specific measures as needed to alter the alignment of the cutblocks to the new FSP and stocking standards.

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<sup>49</sup> [http://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/land-based-investment/forests-for-tomorrow/fire\\_management\\_stocking\\_standards\\_guidance\\_document\\_march\\_2016.pdf](http://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/land-based-investment/forests-for-tomorrow/fire_management_stocking_standards_guidance_document_march_2016.pdf)

### B.3 Stocking Standards

Table 7: Stocking Standards for Even-Aged Stands

BGC			Regeneration Guide					Free Growing Guide				
Classification			Species			Stocking(l)		Regen Delay (Max yrs)	Assessment		Min. Height(ii)	
Zone/SZ	Series	Standards ID	Conifer			Target	MIN pa		MIN p	Earliest (yrs)	Latest (yrs)	Species
			Preferred (p)	Acceptable (a)	Broadleaf	(well-spaced/ha)						
ESSFxc2	01	82056	PI Se <sup>32</sup>	Bl <sup>10,13</sup>		1200	700	600	7	1	20	PI 1.6 Others 0.8
	02	82057	PI	Bl <sup>13</sup> Se		600	400	400	7	1	20	PI 1.2 Others 0.6
	03	-	non-forested			-	-	-	-	-	-	-
	04	-	non-forested			-	-	-	-	-	-	-
	05	82058	PI	Bl <sup>13</sup> Se		1000	500	400	7	1	20	PI 1.2 Others 0.6
	06	82059	PI Se	Bl <sup>13</sup>		1200	700	600	7	1	20	PI 1.6 Others 0.8
	07	82060	PI Se <sup>32</sup>	Bl <sup>32</sup>		1200	700	600	7	1	20	PI 1.6 Others 0.8
	08	82061	PI <sup>1</sup> Se <sup>1,32</sup>	Bl <sup>1,32</sup>		1000	500	400	7	1	20	PI 1.2 Others 0.6
	09	-	non-forested			-	-	-	-	-	-	-
	10	-	non-forested			-	-	-	-	-	-	-
IDFdk1	01	82106	Fd <sup>32</sup> Py <sup>9,14</sup>	PI <sup>13</sup>	At <sup>a</sup>	1000	500	400	7	1	20	PI 1.0 Fd 0.8 Py 0.6
Climate Change 2013	02	82107	Fd <sup>27</sup> Py <sup>9,14</sup>		At <sup>b</sup>	600	400	400	7	1	20	PI 1.0 Fd 0.8 Py 0.6
	03	82108	Fd PI	Py <sup>9,14,23</sup>	At <sup>b</sup>	600	400	400	7	1	20	PI 1.0 Fd 0.8 Py 0.6
	04	82109	Fd PI	Py <sup>9,14</sup> Sx <sup>10,13</sup>	At <sup>b</sup>	1000	500	400	7	1	20	PI 1.0 Fd 0.8 Others 0.6
	05	82110	Fd <sup>9,14,32</sup> Sx	Bl <sup>10,13</sup> PI	Act <sup>a</sup> At <sup>a</sup> Ep <sup>b</sup>	1000	500	400	7	1	20	PI, Lw 1.0 Fd 0.8 Others 0.6
	06	82111	PI <sup>1</sup> Sx <sup>1</sup> Fd <sup>1,32</sup>	Bl <sup>1</sup>	Act <sup>a</sup> At <sup>b</sup> Ep <sup>b</sup>	1000	500	400	7	1	20	PI 1.0 Fd 0.8 Others 0.6
	07	-	non-forested			-	-	-	-	-	-	-

BGC			Regeneration Guide					Free Growing Guide					
Classification			Species			Stocking(i)		Regen Delay (Max yrs)	Assessment		Min. Height(ii)		
Zone/SZ	Series	Standards ID	Conifer			Target	MIN pa		MIN p	Earliest	Latest	Species	Ht
			Preferred (p)	Acceptable (a)	Broadleaf	(well-spaced/ha)			(yrs)	(yrs)		(m)	
IDFhx2	01	82165	Fd <sup>27</sup> Py		At <sup>b</sup>	1000	500	400	7	1	20	All	0.6
	02	82166	Py <sup>27</sup> Fd <sup>27</sup>			400	200	200	7	1	20	All	0.6
	03	82167	Py <sup>27</sup> Fd <sup>27</sup>			400	200	200	7	1	20	All	0.6
	04	82168	Py Fd <sup>27</sup>			600	400	400	7	1	20	All	0.6
	05	82169	Fd <sup>27</sup> Py			1000	500	400	7	1	20	All	0.6
	06	82170	Fd Py			1200	700	600	7	1	20	All	0.6
	07	82171	Fd <sup>32</sup> Sx	Py <sup>32</sup> Cw <sup>32</sup>	Act <sup>a</sup> At <sup>a</sup> Ep <sup>a</sup>	1200	700	600	7	1	20	All	0.6
	08	82172	Sx <sup>1</sup> Fd <sup>1,32</sup>	PI <sup>1,23</sup>	Act <sup>a</sup> At <sup>a</sup> Ep <sup>a</sup>	1000	500	400	7	1	20	PI	0.8
											Others	0.6	
IDFhx2a	91	-	non-forested			-	-	-	-	-	-	-	-
	92	-	non-forested			-	-	-	-	-	-	-	-
	93	-	non-forested			-	-	-	-	-	-	-	-
	94	-	non-forested			-	-	-	-	-	-	-	-
	95	82173	Fd <sup>32</sup> Py <sup>32</sup>		At <sup>a</sup>	1200	700	600	7	1	20	All	0.8
MSxk2	01	82198	PI Fd <sup>9,14,32</sup>	Bl <sup>10,13</sup> Sx <sup>10,13</sup> Lw <sup>14,23,32</sup>	At <sup>a</sup>	1200	700	600	7	1	20	PI	1.4
Climate Change 2013												Others	0.8
	02	82199	PI Fd <sup>9,14</sup>	Bl <sup>10,13</sup>		1000	500	400	7	1	20	PI	1.0
	03	-	non-forested			-	-	-	-	-	-	-	-
	04	-	non-forested			-	-	-	-	-	-	-	-
	05	82200	PI Fd <sup>9,14</sup>	Bl <sup>10,13</sup> Sx <sup>10,13</sup>		1000	500	400	7	1	20	PI	1.0
	06	82201	PI Fd <sup>9,14,32</sup> Sx <sup>10,13</sup>	Bl <sup>10,13</sup>	At <sup>a</sup>	1200	700	600	7	1	20	PI, Lw	1.4
	07	82202	PI Fd <sup>1,9,14,32</sup> Sx	Bl <sup>10,13</sup>		1200	700	600	7	1	20	Others	0.8
	08	82203	PI Sx Fd <sup>9,14,32</sup>	Bl	Act <sup>a</sup> At <sup>a</sup>	1200	700	600	7	1	20	PI	1.4
	09	82204	PI <sup>1</sup> Sx <sup>1</sup>	Bl <sup>1</sup>	Act <sup>a</sup> At <sup>b</sup>	1000	500	400	7	1	20	Others	0.8
												PI	1.0
												Others	0.6

**Table 8: Uneven-Aged Stocking Standards**

Target from Table A standards (stems/ha)	Layer**	Stocking***		
		TSSpa	MSSpa	MSS p
		(well-spaced/ha)		
<b>1200</b>	1	600	300	250
	2	800	400	300
	3	1000	500	400
	4	1200	700	600
<b>1000</b>	1	400	200	200
	2	600	300	250
	3	800	400	300
	4	1000	500	400
<b>600</b>	1	300	150	150
	2	400	200	200
	3	500	300	300
	4	600	400	400
<b>400</b>	1	200	100	100
	2	300	125	125
	3	300	150	150
	4	400	200	200

\* Maximum regeneration delay is seven years. Regeneration delay can be met immediately following harvest if the residual stand has no significant damage or pest problems and meets minimum stocking standards. If regeneration is achieved immediately following harvest, earliest free growing date is 12 months after completion of harvest and the latest date is 24 months after completion of harvest.

**\*\* Stand Layer Definition**

Layer 1	Mature	trees >= 12.5 cm dbh
Layer 2	Pole	trees 7.5 cm to 12.4 cm dbh
Layer 3	Sapling	trees >= 1.3 m height to 7.4 cm dbh
Layer 4	Regeneration	trees < 1.3 m height

\*\*\* pa - preferred and acceptable species      p - preferred species

Preferred and acceptable species and "Target from Table A standards" are as specified in Table A by biogeoclimatic ecosystem classification (BEC) site series.

**Table 9: Mixed Wood and Broadleaf Stocking Standards**

Mixed Wood Stocking Standards*				
TSS from Table A Standards (even aged)	Stocking**			
	TSSpa	MSSpa	MSSp	MSSc
(stems/ha)	(well-spaced/ha)			
1200	1600	1000	800	600
1000	1200	700	600	400
600	800	500	400	400
400	400	200	200	200

\*\* pa - preferred and acceptable species; p - preferred species; c - conifers  
 Preferred and acceptable species and "Target from Table A standards" are as specified in Table A by biogeoclimatic ecosystem classification (BEC) site series.

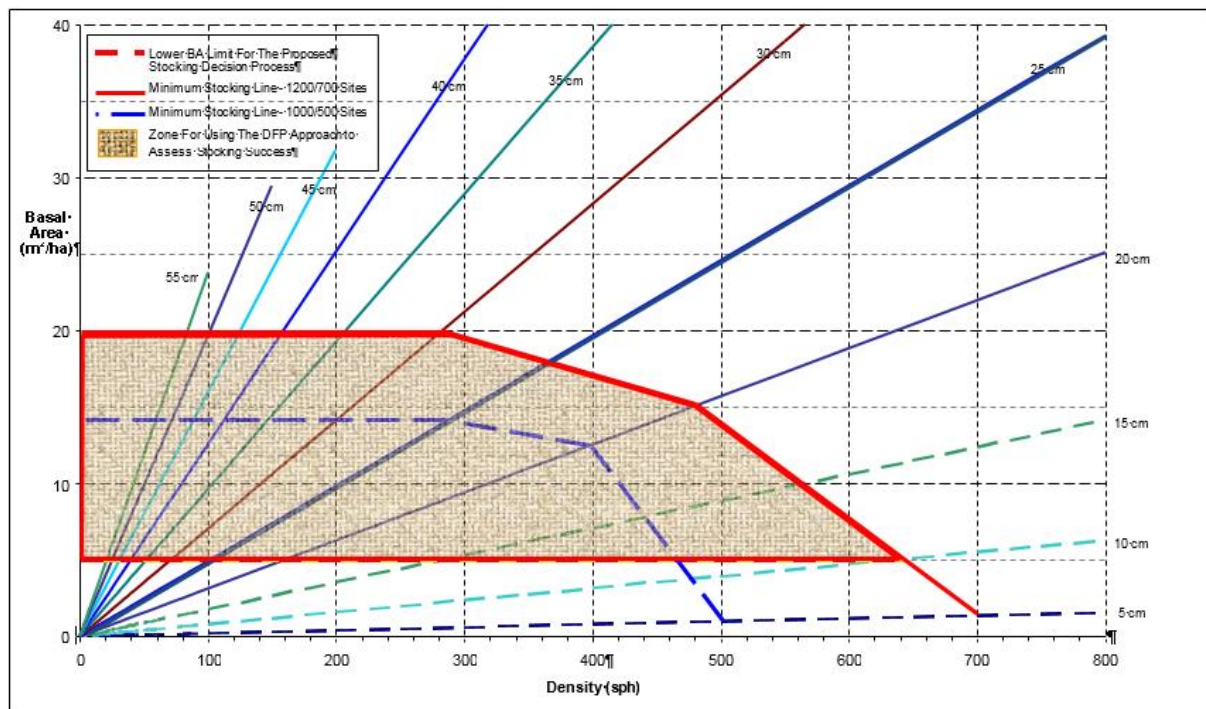
Broadleaf Stocking Standards							
TSS from Table A Standards (even aged)	Stocking**			Regen Date Max (yrs)	Late Max (yrs)	FG MITD (m)	% Tree over Brush
	Target pa	MIN pa	MIN p				
(stems/ha)	(well-spaced stems/ha)						
1200	2000	1200	1000	4	12	2.0	150
1000	1200	1000	800	4	12	2.0	150
600	1000	500	400	4	12	2.0	150
400	600	400	400	4	12	2.0	150

**Table 10: Footnotes for Stocking Standard Tables**

Footnote #	Footnote
1	Elevated microsites are preferred
9	Restricted to southerly aspects
10	Restricted to northerly aspects
13	Restricted to upper elevations of biogeoclimatic unit
14	Restricted to lower elevations of biogeoclimatic unit
23	Restricted to trial use
27	Partial canopy cover required for successful establishment
32	Limited by growing-season frosts

### B.4 Deviation from Potential (DFP)

Where partial cutting was used to achieve specific management objectives and there is an expectation that the area will be harvested within the next thirty (30) years, then the Deviation from Potential (DFP) survey methodology may be used to assess stand stocking levels. The use of the DFP survey methodology is intended only for site specific situations where mature tree retention is prescribed to address timber and non-timber values and objectives. Prior to being implemented, its use will be rationalized by a qualified forest professional on a site by site basis.



**Figure 3: Stocking Zone, Lower Basal Area Limit, Minimum Stocking Line, and Isolines of Average Stand Diameter for Assessing Partial Cut Stands in the Logan Lake Community Forest**

### B.4.1 Assessment Procedures

DFP survey procedures are as follows:

1. Understory tree acceptability criteria – for a stratum specify the understory tree acceptability which may include limitations on tree species, health, brush encroachment, and height.
2. Number of sample points:
  - a. In stratum less than 10 hectares, establish a minimum of 10 sample points.
  - b. In a stratum larger than 10 hectares, establish a minimum of 1 sample point per hectare.
3. Sample point locations – sample points are to be established on a grid that uniformly covers the stratum.
4. BAF selection – select the prism with the lowest basal area factor (BAF) that will:
  - a. Rarely select trees more than 10 meters from the sample point, and
  - b. Generally select less than 10 “in” trees per sample location.

BAF’s in the range of 3 to 5 are commonly used for this type of survey. The same BAF is to be used throughout the survey unit. Select a smaller BAF prism for areas with smaller diameter and/or lower densities of retained trees.

5. Plot measurements – at each sample point:
  - a. Tally the number of well-spaced trees in a 3.99 meter radius plot with less than 12.5 cm dbh (diameter outside bark at 1.3 meters) that meet the tree acceptability criteria. Any Minimum Inter-Tree Distance (MITD) in the range of 0.8 to 2.0 meters can be used.
  - b. With the prism, complete a sweep around the sample point and count the number of “in” trees with greater than or equal to 12.5 cm dbh. Exclude dead trees from the overstory tally.
  - c. Record overstory basal area ( $m^2/ha$ ) and understory tree count (acceptable, total well-spaced trees per plot) at the sample point.
6. Data compilation – for each plot, input into Table 11:
  - a. The total well-spaced acceptable tree tally, and
  - b. The basal area ( $m^2/ha$ ) at the sample point.
  - c. To obtain the DFP for the stratum, average the DFPs of all plots in the stratum to obtain the mean DFP.

### B.4.2 Decision Rules

After surveying, using the DFP methodology, summarize the findings and then refer to Table 11.

Where all of the following criteria are met, the stand may be considered sufficiently restocked or free growing and the relevant milestone can be declared:

- average DFP is less than 0.2;

- more than 60% of the plots in the survey are considered “stocked” as per Table 11; and
- less than 20% of the plots in the survey are considered “open” as per Table 11.

Milestone declarations – where this survey methodology is used to support a regeneration delay or free growing declaration, then a comment will be included with the declaration describing the findings of the DFP survey and referencing the relevant section of this FSP.



**Table 11: Deviation from Potential Volume by Understory Tree Density and Overstory Basal Area**

OS Basal Area (m2/ha)	Well-spaced trees in plot								
	0	1	2	3	4	5	6	7	8
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Color Stocking Class Growth Potential Opportunity**

**Open**  
High potential for additional volume growth  
 41% Additional stocking is required where timber production is the primary management objective

**Partially Stocked**  
Moderate potential for additional volume production through additional stocking  
21 – 40% Assess options, additional stocking may be required

**Stocked**  
Low potential for additional growth through additional stocking  
 20% No further treatments required

## APPENDIX C – Windthrow Hazard Assessment Field Card



**BRITISH COLUMBIA**




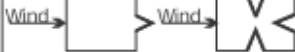




Ministry of Forests  
Forest Practices Branch



Windthrow Field Card  
Assessment Page A

Administrative			
Location	Opening	Block #	Examiner/Date
Segment/Portion			
Topographic Exposure Description			
	High Hazard	Moderate Hazard	Low Hazard
Large-scale Topography	<input type="checkbox"/> Coastal plain <input type="checkbox"/> Plateau <input type="checkbox"/> Rolling plateau <input type="checkbox"/> Major coastal inlet <input type="checkbox"/> Near large water body	<input type="checkbox"/> Large valley <input type="checkbox"/> Hilly	<input type="checkbox"/> Mountainous <input type="checkbox"/> Small coastal inlet <input type="checkbox"/> Far from large water body
Mid-scale Topography	<input type="checkbox"/> Ridge <input type="checkbox"/> Saddle <input type="checkbox"/> Knoll <input type="checkbox"/> Shoulder	<input type="checkbox"/> Flat <input type="checkbox"/> Side slope	<input type="checkbox"/> Side valley
Topographic Position	<input type="checkbox"/> Crest <input type="checkbox"/> Upper slope	<input type="checkbox"/> Mid slope <input type="checkbox"/> Flat	<input type="checkbox"/> Lower slope
Elevation (_____m)	<input type="checkbox"/> High	<input type="checkbox"/> Middle	<input type="checkbox"/> Low
<i>Diagnostic question:</i> Are wind speeds normal for the area, or do they vary due to the presence of a terrain obstacle or constriction?			
Topographic hazard rating	<input type="checkbox"/> High (higher)	<input type="checkbox"/> Moderate (normal)	<input type="checkbox"/> Low (lower)
Soil Description			
	High Hazard	Moderate Hazard	Low Hazard
Parent material	<input type="checkbox"/> Organic <input type="checkbox"/> Rock <input type="checkbox"/> Fine alluvial	<input type="checkbox"/> Till <input type="checkbox"/> Moderate alluvial	<input type="checkbox"/> Coarse alluvial <input type="checkbox"/> Colluvial
Texture	<input type="checkbox"/> Fine	<input type="checkbox"/> Medium/ <input type="checkbox"/> V.Coarse	<input type="checkbox"/> Coarse
Coarse fragment %	<input type="checkbox"/> >70	<input type="checkbox"/> 30–70	<input type="checkbox"/> <30
Rooting depth (cm) and pattern	<input type="checkbox"/> < 40 <input type="checkbox"/> Plate roots	<input type="checkbox"/> 40–80 <input type="checkbox"/> Flattened base	<input type="checkbox"/> >80 <input type="checkbox"/> Rounded base
Impeding layer	<input type="checkbox"/> Water table	<input type="checkbox"/> Surface fractured rock	<input type="checkbox"/> Deep fractured rock
Soil drainage	<input type="checkbox"/> Poor	<input type="checkbox"/> Moderate	<input type="checkbox"/> Good
<i>Diagnostic question:</i> Is root anchorage restricted by an impeding layer, low strength soil, or poor drainage?			
Soil hazard rating	<input type="checkbox"/> High (severely restricted)	<input type="checkbox"/> Moderate (somewhat restricted)	<input type="checkbox"/> Low (unrestricted)
Stand Description			
	High Hazard	Moderate Hazard	Low Hazard
Structure	<input type="checkbox"/> Uniform	<input type="checkbox"/> Two-layer <input type="checkbox"/> Uniform with vets	<input type="checkbox"/> Multi-layer
Height (m)	<input type="checkbox"/> >30	<input type="checkbox"/> 15–30	<input type="checkbox"/> <15
Live crown Ratio	<input type="checkbox"/> <30	<input type="checkbox"/> 30–70	<input type="checkbox"/> >70
Height diameter ratio	<input type="checkbox"/> >90	<input type="checkbox"/> 70–90	<input type="checkbox"/> <70
Stand density	<input type="checkbox"/> Dense	<input type="checkbox"/> Moderate	<input type="checkbox"/> Open
Root/stem rots	<input type="checkbox"/> Significant	<input type="checkbox"/> Some	<input type="checkbox"/> Minor
Species			
<i>Diagnostic question:</i> Are the individual trees within the stand adapted to wind loads?			
<i>Note:</i> If damaged stems would lean back into canopy and be supported by their neighbours instead of working down through the canopy to the ground, then stand hazard is low for clearcut edges.			
Stand hazard rating	<input type="checkbox"/> High (poorly adapted)	<input type="checkbox"/> Moderate (somewhat adapted)	<input type="checkbox"/> Low (well adapted)

### Windthrow Field Card Assessment Page B

Existing Windthrow Pattern								
	Recent	Older	Direction	Comments				
Existing edge								
Within timber								
Treatment Description								
Openings: Group selection, patch cut, clearcut, etc.								
Treatment risk	High Risk	Moderate Risk	Lower Risk					
Orientation relative to damaging winds	<input type="checkbox"/> Downwind at right angle 	<input type="checkbox"/> Parallel 	<input type="checkbox"/> Upwind at right angle 					
Width of Opening: Upwind Direction	<input type="checkbox"/> >5 Tree lengths	<input type="checkbox"/> 2-5 Tree Lengths	<input type="checkbox"/> <2 Tree Lengths					
Influence of opening shape on windspeed	<input type="checkbox"/> Funnels or projects into wind 		<input type="checkbox"/> Straight 					
For Uniform Retention: Commercial thin, single tree selection, etc.								
Treatment risk	High Risk	Moderate Risk	Lower Risk					
Removal level (% basal area)	<input type="checkbox"/> >50	<input type="checkbox"/> 30-50	<input type="checkbox"/> <30					
Removal criteria	<input type="checkbox"/> Remove veterans, healthy dominants <input type="checkbox"/> Thin from above	<input type="checkbox"/> Remove across all crown classes	<input type="checkbox"/> Retain veterans, healthy dominants <input type="checkbox"/> Thin from below					
Species	<input type="checkbox"/> Least windfirm		<input type="checkbox"/> Most windfirm					
<i>Diagnostic question:</i> Will the proposed harvesting strategy increase wind loading on trees along the stand edge (opening) or retained trees (partial cut)?								
Treatment risk rating summary	<input type="checkbox"/> High (large increase)	<input type="checkbox"/> Medium (moderate increase)	<input type="checkbox"/> Low (minimal increase)					
Windthrow Risk Evaluation								
<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"> <b>Site Hazard</b>                      Exposure                      L M H                      L L M H                      M M H                      H H H                 </td> <td style="text-align: center;"> <b>Biophysical Hazard</b>                      Site hazard                      L M H                      L L M H                      M M H                      H H VH                 </td> <td style="text-align: center;"> <b>Windthrow Triangle</b>   </td> <td style="text-align: center;"> <b>Windthrow Risk</b>                      Treatment risk                      N L M H                      L N L M H                      M L M H                      H M H                      VH H VH                 </td> </tr> </table>					<b>Site Hazard</b> Exposure L M H L L M H M M H H H H	<b>Biophysical Hazard</b> Site hazard L M H L L M H M M H H H VH	<b>Windthrow Triangle</b> 	<b>Windthrow Risk</b> Treatment risk N L M H L N L M H M L M H H M H VH H VH
<b>Site Hazard</b> Exposure L M H L L M H M M H H H H	<b>Biophysical Hazard</b> Site hazard L M H L L M H M M H H H VH	<b>Windthrow Triangle</b> 	<b>Windthrow Risk</b> Treatment risk N L M H L N L M H M L M H H M H VH H VH					
Estimated Windthrow Potential:								
	Very High	High	Moderate	Low	None			
Topographic Hazard	•	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•			
Soil Hazard	•	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•			
Stand Hazard	•	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•			
Biophysical Hazard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•			
Treatment Risk	•	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Windthrow Risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			