FLA86954

CEDAR HEMLOCK PARTITION LICENCE

KAMLOOPS TSA
FOREST STEWARDSHIP PLAN

Submission Date: TBD

Prepared by:
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List of Acronyms

- **AOA** – Archeological Overview Assessment
- **BA** – Basal Area
- **BEC** – Biogeoclimatic Ecosystem Classification
- **BG** - Bunchgrass Biogeoclimatic Zone
- **CHR** – Cultural Heritage Resource
- **CP** – Cutting Permit
- **DBH** – Diameter at Breast Height
- **DFP** – Deviation From Potential
- **ESSF** Engelmann Spruce Subalpine Fir Biogeoclimatic Zone
- **FDU** – Forest Development Unit
- **FG** – Free Growing
- **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
- **ICH** – Interior Cedar Hemlock Biogeoclimatic Zone
- **IDF** – Interior Douglas-fir Biogeoclimatic Zone
- **IFL** – Integrated Fibre Ltd.
- **LRMP** – Land and Resource Management Plan
- **LRUP** – Local Resource Use Plan
- **MS** – Montane Spruce Biogeoclimatic Zone
- **MSS** – Minimum Stocking Standard
- **NAR** – Net Area to Reforest
- **NDT4** – Natural Disturbance Type 4
- **OGMA** – Old Growth Management Area
- **PP** – Ponderosa Pine Biogeoclimatic Zone
- **QRP** – Qualified Registered Professional
- **RMZ** – Riparian Management Zone
- **RPF** – Registered Professional Forester
- **RRZ** – Riparian Reserve Zone
- **SBPS** - Sub-Boreal Pine/Spruce Biogeoclimatic Zone
- **SBS** - Sub-Boreal Spruce Biogeoclimatic Zone
- **SR** – Sufficiently Restocked
- **SU** – Standards Unit
- **TSA** – Timber Supply Area
- **VQO** – Visual Quality Objective

Signatures of Preparing Foresters and Person Required to Prepare Plan

	Signature of Preparing Forester and Person Required to Prepare the Plan
	Date:

1. Definitions and Interpretation

1.1. Definitions

In this **FSP**:

The Holder of this FSP means the holder of a Cutting Permit or Road Permit to which this **FSP** applies;

FDU means the 15 Forest Development Units identified under this **FSP**;

FPPR means the Forest Planning and Practices Regulation as amended from time to time*;*

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

FSP means this Forest Stewardship Plan;

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

Qualified Registered Professional (QRP) means 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 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 **TBD.**

The Term of this **FSP** is 5 years beginning on the Commencement Date. The Commencement Date for the Term of this **FSP** is April 24, 2020 which represents the date after which the previous **FSP** ended.

3. Applicability of this FSP

Subject to exceptions under **FRPA**, this **FSP** applies to each of the following located within an identified **FDU**:

(a) timber sale licenses advertised or entered into by the **holder of this FSP** on or after the commencement date, and/ or

(b) road permits granted by the **holder of this FSP** on or after the commencement date, or

(c) cutting permits and/or road permits approved under Licence A86954 on or after the commencement date.

4. Forest Development Units

4.1. Landscape Units as Forest Development Units

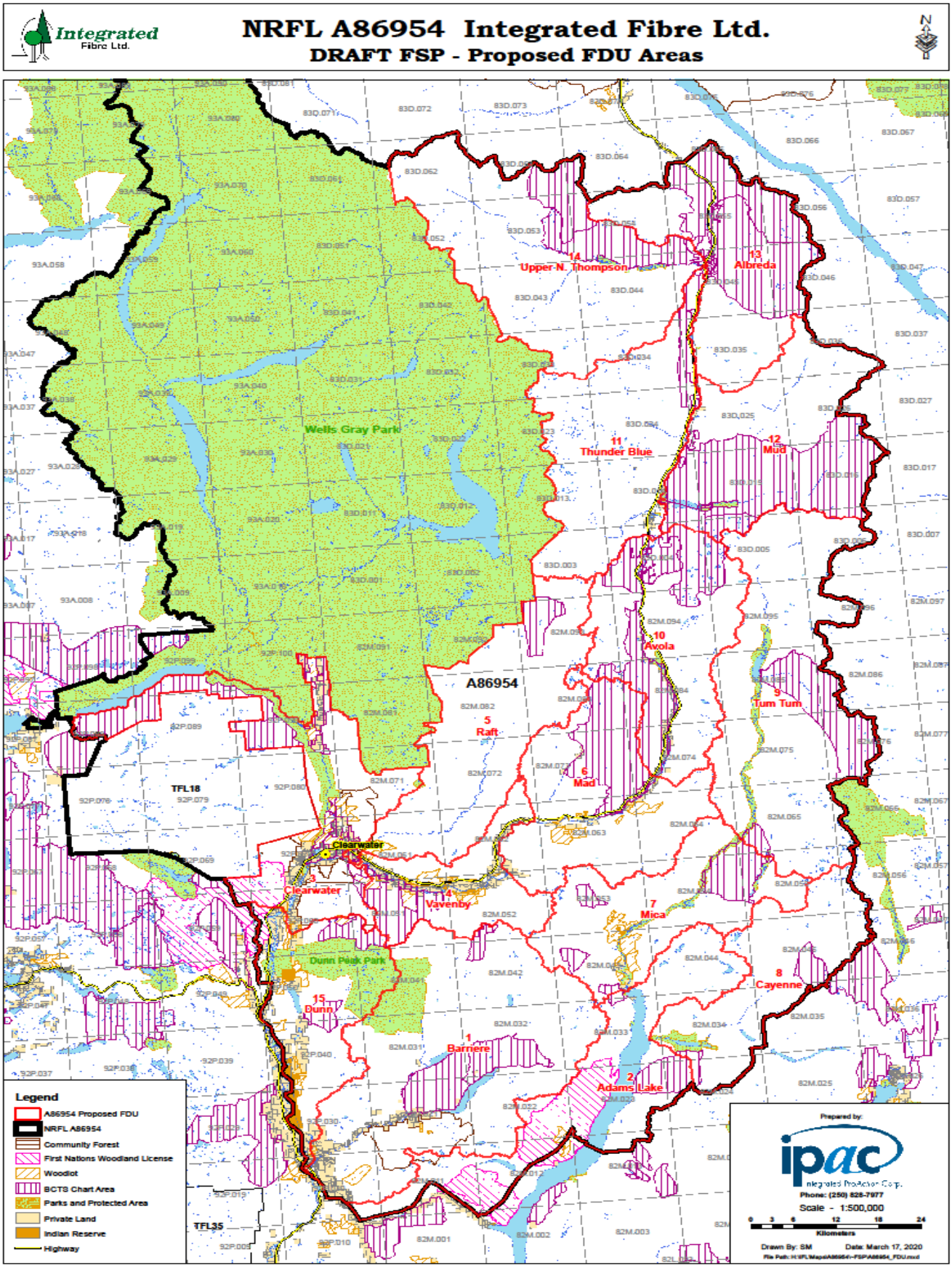
A total of 15 FDUs have been identified in this FSP which incorporate the majority of the Kamloops Timber Supply Area (TSA) and are based on the preliminary landscape units boundaries with assigned biodiversity emphasis options as proposed by the Kamloops LRMP, with boundaries updated to the year 2000[1].

Table 1. Forest Development Units for NRFL A86954 Kamloops TSA Forest Stewardship Plan.

FDU #	FDU Name
1	BARRIERE
2	ADAMS LAKE
3	CLEARWATER
4	VAVENBY
5	RAFT
6	MAD
7	MICA
8	CAYENNE
9	TUM TUM
10	AVOLA
11	THUNDER BLUE
12	MUD
13	ALBREDA
14	UPPER N. THOMPSON
15	DUNN

[1] Updated based on new height of land data available in the year 2000.

Figure 1. Forest Development Units for IFL Forest Stewardship Plan



4.2. 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**:

1. Ungulate winter range areas,
2. Wildlife habitat areas,
3. Scenic areas,
4. L1 lakes,
5. Community watersheds,
6. Old growth management areas, and
7. Areas where commercial timber harvesting is prohibited by an enactment.
8. Fisheries Sensitive Watersheds
9. Lakeshore Management Zones[2]

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*[3] and associated regulations; the **Kamloops LRMP** Higher Level Plan Order[4] and the Kamloops TSA Old Growth Order[5.]

5.1. Soil Management and Conservation Objective

Objective[6]***:*** 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: All **FDU**s.

Strategy: When the **Holder of this FSP** carries out or authorizes primary forest activities, the activities will conform to Sections 35 and 36 of the **FPPR**.

5.2. Water Objectives

5.2.1. Community Watersheds

[2] Lakeshore Management Zones have not been established under the Government Actions Regulations within the Thompson Rivers District. Although Lakeshore Management Zones are not in effect at the date of submission of this FSP, they have been included in this FSP.

[3] Forest and Range Practices Act. http://www.bclaws.ca/Recon/document/ID/freeside/00_02069_01

[4] 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.p df

5Land 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

[6] FRPA Section 149, **FPPR** Section 5.

Objective[7]***:*** The objective set by government for water being diverted for human consumption through a licensed waterworks in a community watershed is to, without unduly reducing the supply of timber from British Columbia's forests; prevent 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 license pertaining to the waterworks

Applicable Area: Within Designated Community Watershed areas including Cornwall, Currie, Tranquille, Leonie, Nelson, Paul Community, Paul Lake Community, Peterson, Rosen, Skowootum, Toops, Jimmies, Avola, Hascheak, McDougall and Russell.

Definitions:

Community Watershed Assessment is an analysis of the cumulative hydrological effects of existing and proposed primary forest activities within a community watershed, conducted at the watershed level, which will consider the potential for the activities to cause:

a) a material adverse impact on the quantity of water or the timing of the flow of the water from the waterworks;

b) and the water from the waterworks having a material adverse impact on human health that cannot be addressed by water treatment required under an enactment, or the license pertaining to the waterworks.

The assessment is to be completed by a **QRP** and will include recommendations to mitigate the identified impacts to water quantity, timing of flow, and water quality.

An existing assessment is considered relevant if the circumstances of the assessment or conditions within the watershed are unchanged from the time of the assessment.

Strategy: Prior to the carrying out or authorizing primary forest activities within Designated Community Watersheds, the **Holder of this FSP** will:

1. Conform to Sections 59, 60, 61, 63 and 84 of the **FPPR**;
2. Ensure that a relevant **Community Watershed Assessment** has been completed by a **QRP**; and
3. Ensure that primary forest activities are planned and conducted in a manner that are consistent with the recommendations found within the relevant **Community Watershed Assessment**.

[7] FRPA Section 149, **FPPR** Section 8.2

5.2.2. Water Licensees

Objective[8]***:*** Ensure implementation of a referral process to notify all potentially impacted water licensees when development is proposed.

Applicable Area: All **FDU**s.

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

1. Ensure a **QRP** identifies known water licenses that may be potentially impacted by the proposed primary forest activities;
2. Where a potential impact to a known water license has been identified, the water Licensee will be contacted to solicit input prior to the finalization of site plans or road permits;
3. Where the water licensee(s) identifies specific concerns, work with the potentially impacted water licensee(s) to develop and agree upon a management strategy to address their concerns;
4. Where an agreement cannot be reached in (3), ensure that a **QRP** develops a management strategy to address the concerns of the potential impacted water licensee(s) and communicate these strategies back to the water licensee(s);
5. Ensure primary forest activities are conducted in a manner consistent with the management strategy;
6. Where the Water License(s) is for consumptive use, conform to Sections 59, 60, and 61of the **FPPR**

5.3. Lakeshore Management Objective

5.3.1. Lakeshore Management Zones

Objective[9]***:*** Manage riparian areas, including streams, wetlands and lakes in accordance with the **FPPR** and the Kamloops and Clearwater District Lakeshore Management Guidelines, or other applicable management tools or agency agreements.

Applicable Area: All **FDU**s.

Definitions:

Lakes LRUP: the *Clearwater Forest District Lakes Local Resource Use Plan – Lakeshore Management Guidelines* dated August 1, 2001[10]and the Kamloops Forest District *Lakes Local Resource Use Plan – Lakeshore Management* dated December 20, 2001.[11]

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[8] Kamloops LRMP Section 2.1.2 and HLP Order of January 23, 2006

[9] Kamloops LRMP Section 2.1.2.1 and HLP Order of January 23, 2006

[10] Clearwater LRUP - https://www.for.gov.bc.ca/ftp/DHW/external/!publish/DHW_Lakes_Local_Resource_Use_Plan/

[11] Kamloops LRUP - https://www.for.gov.bc.ca/ftp/DKA/external/!publish/DKA_Lakes_Local_Resource_Use_Plan/

Classified Lakes: Thompson Rivers District lakes that have been classified within a **Lakes LRUP**.

Lakeshore Management Zone: The zone surrounding a **Classified Lake** that is established upland from the riparian reserve zone, a slope distance of 200 meters. Where no riparian reserve zone exists, the lakeshore management zone is measured upland from the high water mark of the lake or from the outer edge of contiguous wetland vegetation.

Result: If carrying out or authorizing primary forest activities within the **Lakeshore Management Zone** around **Classified Lakes**, the Holder of this **FSP** will ensure that timber harvesting and road construction are consistent with the intended outcomes of the guidelines found within the applicable **Lakes LRUP**.

5.3.2. Walk-in Lakes

Objective:[12] Maintain a mosaic of angling opportunities within the recreational spectrum (i.e. walk-in lakes, drive to lakes, trophy lakes).

Applicable Area: all FDUs

Definitions:

Lakes LRUPs: the *Clearwater Forest District Lakes Local Resource Use Plan – Lakeshore Management Guidelines* dated August 1, 2001[13]and the Kamloops Forest District *Lakes Local Resource Use Plan – Lakeshore Management* dated December 20, 2001.[14]

Walk-in Lakes[15]: are lakes that have been identified in a **Lakes LRUPs** as requiring access restrictions in order to manage fish stock and quality and/or provide semi-primitive recreation experiences.

Section 58[16] **Walk-in Lakes:** Thompson Rivers District lakes and their associated 'Walk-In Zones' that have been ordered through a **FRPA** Section 58 Recreation Order as having motorized vehicle restrictions[17.]

Strategy:

1. Where motorized access currently does not exist[18] within 200m of a **Walk-in Lake,** prior to carrying out or authorizing primary forest activities, the **Holder of this FSP** will ensure that road location and construction is consistent with the intent of the access management guidelines found within the applicable **Lakes LRUP;** and
2. Prior to carrying out or authorizing primary forest activities within or adjacent to a **Section 58 Walk-in Lake** polygon, the **Holder of this FSP** will conform to the applicable ***FRPA*** Section 58 order.

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[12] Order amending January 1996 Declaration of Kamloops LRMP as a Higher-Level Plan. eff. January 31,2006 - https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/thompsonokanagan-region/kamloops-lrmp/kamloops_lrmp_luor.pdf

[13] Clearwater LRUP - https://www.for.gov.bc.ca/ftp/DHW/external/!publish/DHW_Lakes_Local_Resource_Use_Plan/

[14] Kamloops LRUP - https://www.for.gov.bc.ca/ftp/DKA/external/!publish/DKA_Lakes_Local_Resource_Use_Plan/

[15] Kamloops LRUP - https://www.for.gov.bc.ca/ftp/DKA/external/!publish/DKA_Lakes_Local_Resource_Use_Plan/

[16] FRPA Section 58 http://www.bclaws.ca/Recon/document/ID/freeside/00_02069_01#section58

[17] Digital spatial data can be found in the BC Data Catalog at https://catalogue.data.gov.bc.ca/dataset/section-58-recreation-orders-polygons

[18] Where IFL uses an existing access within 200 meters of a Walk-in lake, IFL will be consistent with the LRUP guidelines

5.4. Riparian Areas Objective

Objective[19]*:* 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*:** All **FDU**s

Definitions:

Large S6 Stream – an S6 stream that is ≥ 1.5m and ≤ 3m in width

Small S6 Stream – an S6 stream that is < 1.5m in width

Percent Retention – the percentage of trees (≥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.

Lakeshore Management Zone: The zone surrounding a **Classified Lake** that is established upland from the riparian reserve zone, a slope distance of 200 meters. Where no riparian reserve zone exists, the lakeshore management zone is measured upland from the high water mark of the lake or from the outer edge of contiguous wetland vegetation.

Classified Lakes: the Thompson Rivers District lakes that have been classified within a **Lakes LRUP**.

Lakes LRUP: the *Clearwater Forest District Lakes Local Resource Use Plan – Lakeshore Management Guidelines* dated August 1, 2001 and the Kamloops Forest District *Lakes Local Resource Use Plan – Lakeshore Management* dated December 20, 2001.

5.4.1. Stream Riparian Classes

Strategy: When the **Holder of this FSP** carries out or authorizes primary forest activities:

1. The activities will conform to the following sections of **FPPR**:
   47 (1), (2), (3)(a), (5), and (6);
2. Subject to **FPPR** sections 47 (5) and (6), for each riparian class of stream the minimum riparian management area (RMA) width, riparian reserve zone (RRZ) and the riparian management zone (RMZ) on each side of the stream, are outlined in Table 3;

[19] FRPA Section 149, **FPPR** Section 8

Table 2: Stream Riparian Management Table

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	40	10	30	25
S5	30	10	20	25
Large S6	25	10	15	25
Small S6	20	0	20	>0

* With the exception of Large S6 + Small S6, refer to the definitions of stream riparian classes found in **FPPR** Section 47.
** Site specific factors may require additional retention to meet the objective of ensuring the viability of the RRZ or where there is no RRZ protect the integrity of the stream edge. Site specific factors include water quality and fish habitat protection, level of shading required, sediment filtering, stream bank integrity, etc.

3. The RRZ for a stream begins at the edge of the stream channel bank and extends to the width described in Table 3 or **FPPR** section 47 (6).
4. The RMZ for a stream begins at:
   a) The outer edge of the RRZ, or
   b) If there is no RRZ, the edge of the stream channel bank,

   and extends to the width described in Table 3 or **FPPR** section 47 (5)

5.4.2. Wetland Riparian Classes

Strategy: When the **Holder of this FSP** carries out or authorizes primary forest activities:

1. The activities will conform to **FPPR** Section 48 (1), (2), (4), and (5);
2. Subject to **FPPR** Section 48 (4) and (5), for each riparian class of wetland, the minimum RMA width, RRZ width and RMZ width for the wetland are as outlined in Table 4.

Table 3 Wetland Riparian Management Table

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 the definitions of wetland classifications found in **FPPR** Section 48.
**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, bank integrity, etc.

3. The RRZ for a wetland begins at the edge of the wetland and extends to the width described in Table 4 or **FPPR** section 48 (5);
4. The RMZ for a wetland begins at:
   a) The outer edge of the RRZ, or
   b) If there is no RRZ, the edge of the wetland,

   And extends to the width described in Table 4 or **FPPR** section 48 (5)

5.4.3. Lake Riparian Classes

Strategy: When the **Holder of this FSP** carries out or authorizes primary forest activities:

1. The activities will conform to **FPPR** Section 49 (1), and (3).
2. Subject to **FPPR** section 49 (3), for each riparian class of lake, the minimum RMA width, RRZ width and RMZ width are as outlined in Table 5.

Table 4: Lakes Riparian Management Table

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	n/a
L1-B	10	10	0	n/a
L2	30	10	20	25
L3	30	10	20	25
L4	30	10	20	25

*Refer to definition of lakes classifications found in the **FPPR** Sec 49.
**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, bank integrity, etc.

3. The RRZ for a lake begins at the edge of the lake and extends to the width described in Table 5

or **FPPR** section 49 (3).

4. The RMZ for a lake begins at
   a) The outer edge of the RRZ, or
   b) If there is no RRZ, the edge of the lake,

   And extends to the width described in Table 5 or **FPPR** section 49 (3).
5. Within the Lakeshore Management Zone for Classified Lakes, the timber harvesting and road construction will conform to the intended outcomes of the guidelines found within the applicable Lakes LRUPs.

5.4.4. Restrictions in a Riparian Management Area

Strategy: When the **Holder of this FSP** carries out or authorizes primary forest activities, the activities will conform to **FPPR** Section 50.

5.4.5. Restrictions in a Riparian Reserve Zone

Strategy: When the **Holder of this FSP** carries out or authorizes primary forest activities, the activities will conform to **FPPR** Section 51.

5.4.6. Restrictions in a Riparian Management Zone

Strategy: The **Holder of this FSP**:

1. Will ensure that harvesting a cutblock; to which this **FSP** applies, that includes a RMZ will not cause the **Percent Retention**, at the completion of that harvesting, to be less than outlined in Table 3, 4 or 5;
2. Will conform to **FPPR** sec 52 (1) (b);
3. Who cuts, modifies or removes trees in a RMZ for a Small S6 stream that has trees that contribute significantly to the maintenance of stream bank or channel stability must retain enough trees adjacent to the stream to maintain the stream bank or channel stability, if the stream is a direct tributary to an S1, S2 or S3 streams
4. This strategy does not apply to the extent it is not practicable to do so where the harvesting is for a purpose described in section 5.4.5

5.4.7. Restricted Operation of Machinery

Strategy: When the **Holder of this FSP** carries out or authorizes primary forest activities within a cutblock; to which this **FSP** applies, that includes a RMA, will retain a **Machine Free Zone (MFZ)** for the purpose of retaining brush species, advanced regeneration and non-merchantable/commercial stems. The **MFZ** begins at the outer edge of the RRZ, the edge of the stream channel bank of a small S6 Stream or at the edge of a L1-A lake and extends to a width of 5 meters.

5.4.8. Operational Exceptions to Restricted Operation of Machinery

Paragraph 5.4.7 does not apply:

1. at stream crossings;
2. for the purpose of removing trees to address a safety concern;
3. where operating the machinery more than 5 meters from the stream bank will create a higher risk or

sediment delivery; or

4. where the harvesting or treatment is conducted in a manner that protects stream banks and minimizes damage to natural vegetation.

5.5. Biodiversity Objectives

5.5.1. General Biodiversity

Objective[20]***:*** To conserve the diversity and abundance of native species and their habitats throughout the **Kamloops LRMP**.

Applicable Area: All **FDU**s.

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

1. Section 5.3 - Lakeshore Management Objective
2. Section 5.4 – Riparian Areas Objective
3. Section 5.5.2 – Landscape Level Biodiversity
4. Section 5.5.3 – Old Growth Management Areas
5. Section 5.5.4 – Stand Level Biodiversity
6. Section 5.7 – Wildlife Objectives
7. Section 5.8 – Visual Objective
8. Section 5.9 – Cultural Heritage Resources
9. Section 5.10 – Archaeological Assessments
10. Section 5.12 – Range
11. Section 6 – Measures-Natural Range Barriers and Invasive Plants
12. Section 7 – Stocking Standards

5.5.2. Landscape Level Biodiversity

Objective[21]***:*** 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: All **FDU**s.

Strategy: When the **Holder of this FSP** carries out or authorizes primary forest activities, the **Holder of this FSP** will ensure that the activities conform to **FPPR** sections 64[22] and 65

[20] Kamloops LRMP Section 2.1.3.1 and HLP Order of January 23, 2006

[21] FRPA Section 149, **FPPR** Section 9

22 Where **FPPR** section 64 (2) applies; if the openings are going to be larger than the prescribed size, the planning of these large openings will be guided by (but not limited to) the following Chief Forester Guidance documents: Guidance on Landscape- and Stand-level Structural Retention in

5.5.3. Old Growth Management Areas

Objectives*[23]*:

1. Conserve biodiversity by retaining old forest values and attributes, or rare features within OGMAs[24] across the landscape units over time.
2. Maintain all timber within OGMAs 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
    b) not exceed the lesser of two hectares or 10% of an individual OGMA polygon per 20 year timeframe.

Applicable Area: All **FDU**s*.*

Result: The **Holder of this FSP** will carry out or authorize 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 Land and Resource Management Plan Area.

5.5.4. Stand Level Biodiversity

Objective*[25]*: 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: All **FDU**s.

Strategy:

1. When the **Holder of this FSP** carries out or authorizes timber harvesting in one or more cutblocks; to which this **FSP** applies, during any 12 month period beginning on April 1 of any year, the **Holder of this FSP** will ensure that:

Large-Scale Mountain Pine Beetle Salvage Operations, December 2005; Post-Natural Disturbance Forest Retention Guidance – 2017 Wildfires

[23] Land Act Ministerial order. Old Growth Management Objectives for the Kamloops LRMP Area dated March 5, 2013

[24] 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.

[25] FRPA Section 149, **FPPR** Section 9.1

a) at the end of the 12 month period beginning on April 1 of any calendar year, the total area covered by Wildlife Tree Retention Areas (WTRAs) that relate to the cutblocks on which harvesting was completed during the period, is a minimum of 7% of the total area of the cutblocks.

b) At the completion of harvesting, the total amount of WTRAs that relates to any cutblock greater than 5 ha in size is a minimum of 3.5% of the cutblock.

2. For the purposes of paragraph 1, a WTRA may relate to more than one cutblock if all of the cutblocks that relate to the WTRA collectively meet the requirements of paragraph 1.
3. The **Holder of this FSP** will not carry out or authorize 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

b) a **QRP** has determined that

(i) the WTRA causes a concern for public safety;

(ii) the WTRA is or will imminently be rendered ineffective by a forest health related factor;

(iii) harvesting is required to provide for guyline clearance and tailhold anchors;

(iv) harvesting is required to provide road access where no alternative practicable option for road location exists; or

(v) harvesting is required to ensure operationally practicable cutblock boundaries

4. Where the **Holder of this FSP** carries out or authorizes timber harvesting within an existing WTRA, then the harvested WTRA will be replaced with an equivalent or other suitable WTRA
5. The strategies in the following sections of this **FSP** are also strategies for this objective:

a) Section 5.3 – Lakeshore Management Objectives

b) Section 5.4 – Riparian Areas Objectives

c) Section 5.5.2 – Landscape Level Biodiversity

d) Section 5.5.3 – Old Growth Management Areas

e) Section 5.7 – Wildlife Objectives

f) Section 5.8 – Visual Objectives

g) Section 5.9 – Cultural Heritage Resources

h) Section 5.10 – Archaeological assessments

i) Section 5.12 - Range

j) Section 6.1 – Natural Range Barriers

5.6. Recreation Objectives

5.6.1. Recreation Sites and Trails

Objective:[26] Manage known recreation sites and trails in accordance with established objectives.

Applicable Area: All **FDU**s.[27]

Result: Prior to carrying out or authorizing primary forest activities, the **Holder of this FSP** will ensure that primary forest activities are carried out in a manner that is consistent with the established objectives of designated recreation sites and trails.

5.6.2. Recreation and Tourism Zones

Objective:[28] Road and trail construction, maintenance and deactivation and other surface disturbances and construction will be undertaken in a manner that meets the management objectives of each Recreation and Tourism Zone, in accordance with direction from an approved plan, local process or enhanced referral.

Objective[29] ***:*** Extractive uses are permitted providing they are consistent with the objectives of the Resource Management Zone.

Applicable Area: *Special Resource Management – All Recreation and Tourism Zones* within the **FDU** including Alan Creek, Bischoff, Blustery, Bone, Clemina, Lac Le Jeune, North Thompson Glacier, Smoke, Taweel, Thompson Rivers, Tod Mountain and Tod Mountain (controlled area).

Strategy: When carrying out or authorizing timber harvesting or road construction in a Recreation and Tourism Zone, the **Holder of this FSP** will ensure that:

1. the activity is designed and carried out in a manner that meets the management objectives of the applicable Recreation and Tourism Zone and is in accordance with direction from an approved plan, local process or enhanced referral and,
2. the activity will be consistent with the objectives of the Resource Management Zone.

5.7. Wildlife Objectives

5.7.1. General Wildlife Objectives

Objectives[30]*: The overall objective of special resource management zones for habitat and wildlife management areas is to: maintain or enhance identified wildlife habitat areas.*

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[26] Grandparented designations, FRPA Section 180.

[27] Although Recreation Sites and Trails have been legally established in the former Kamloops Forest District, no formal objectives were established (as required by FRPA Sec 181) and therefore no Result or Strategy is required in this FSP. Established objectives are in place for a series of recreations sites and trails in the former Headwaters Forest District portion of the Thompson Rivers District. A list of these sites can be found in Appendix II of the FSP Background Document. IFL recognizes and acknowledges that a FRR section 16 authorization is required when primary forest activities are being proposed within and/or on recreation sites and trails.

[28] Kamloops LRMP Section 2.6.1 and HLP Order of January 23, 2006.

[29] Kamloops LRMP Section 2.6.1.4 and HLP Order of January 23, 2006.

[30] Kamloops LRMP HLP Order dated January 8, 2009. Kamloops LRMP section 2.5.1

Applicable Area: Special Resource Management Habitat/Wildlife Management Areas as identified in the Kamloops HLP Ministerial Order

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

a) 5.7.2 Mule Deer Winter Range

b) 5.7.3 Moose

5.7.2. Mule Deer Winter Range

Objectives:[31]

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.
4. Maintain or enhance forage production and habitat requirements in critical deer winter range (Skull Wildlife Habitat).

Applicable Area: **Critical Deer Winter Range**, as identified in the Kamloops HLP Ministerial Order January 8, 2009 and the Skull Wildlife Habitat Management Area.

Definitions:

Critical Deer Winter Range: an area of Crown land and either identified as Critical Deer Winter Range in Kamloops HLP Ministerial order dated January 8, 2009 or is within the Skull Wildlife Habitat Management Area.

Suitable Snow Interception Cover[32]**:**

1. A forested 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 biogeoclimatic zones;
   b) 5 or greater in the ICH biogeoclimatic zones;
   c) 4 or greater in all other biogeoclimatic zones; or
2. A forest area harvested under a single-tree or group selection system that has achieved the crown class requirements of paragraph 1.

Planning Cell: A contiguous area of crown forested land within **Critical Deer Winter Range** that is up to 800 ha in size. Planning cells are not less than 1 km wide unless the **Critical Deer Winter Range** or the portion of the **Critical Deer Winter Range** within the **Holder of this FSP**'s operating area is already less than 1 km wide.

Suitable Travel Corridors: Areas identified through an assessment carried out by a **QRP** that are

[31] Kamloops LRMP HLP Order dated January 8, 2009. Kamloops LRMP sections 2.1.12.1, 2.5.1 and 2.5.2.

[32] Snow interception cover is equated with and assumed to provide security cover and thermal cover

suitable for mule deer travel during winter. Specific attention is given to Douglas-fir (*Pseudotsuga menziesii*) veterans (e.g. 65cm or greater) on ridges.

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

1. Ensure **Planning Cells** are located such that timber harvesting will be dispersed throughout the winter range and spread it out evenly over the rotation;
2. Maintain or enhance forage production and habitat requirements in critical deer winter range;
3. Not cause less than 25% of the forested area in each **Planning Cell** to be retained as **Suitable Snow Interception Cover**.
4. To the extent practicable, areas of **Suitable Snow Interception Cover** will be linked together with suitable travel corridors, focusing on mature Douglas fir vets on ridges.

5.7.3. Moose

Objectives:[33]

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.
3. Maintain or enhance forage production and habitat requirements in critical moose winter range (Skwilatin Wildlife Habitat).

Applicable Area: **Critical Moose Winter Range** as identified in the Kamloops HLP Ministerial Order January 8, 2009 and the Skwilatin Habitat Resource Management Zone.

Definitions:

Extended Use Roads: roads that are planned for more than 2 years of use for primary forest 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.;

Habitat elements: Lakes, classified wetlands and deciduous leading stands >3ha in size found within the **Critical Moose Winter Range**

Critical Moose Winter Range: an area of Crown land identified as either **Critical Moose Winter Range** in Kamloops HLP Ministerial order dated January 8, 2009 or is within the Skwilatin Habitat Resource Management Zone.

Moose Management Unit: an area that includes a **habitat element** and a 200 meter zone that begins at the outer edge of the **Habitat element**

Security Cover: areas of vegetation, > 5 meters in height and at least 100m wide.

Snow Interception Cover: forested stands >15 meters in height with canopy closure >40%

[33] Kamloops LRMP HLP Order dated January 8, 2009. Kamloops LRMP sections 2.1.12.2, 2.5.1 and 2.5.2.

Thermal Cover: conifer leading stands that are ≥15 meters in height and ≥5 ha in size

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

Strategy: When carrying out or authorizing primary forest activities in an area within **Critical Moose Winter Range**, **the Holder of this FSP** will:

1. Implement the following strategies from this **FSP** to contribute to thermal cover and habitat requirements for Moose
    a) Section 5.3 – Lakeshore Management Objectives
    b) Section 5.4 – Riparian Areas Objectives
    c) Section 5.5.3 – Old Growth Management Areas
    d) Section 5.5.4 – Stand Level Biodiversity
2. Where practicable, design and implement primary forest activities such that:
    a) they will provide connectivity between moose **habitat elements** and **security cover;**
    b) new cutblocks; to which this **FSP** applies, are not harvested until adjacent cutblocks have reached a green up height of 5m; and
    c) within cutblocks; to which this **FSP** applies, ensure that no point will be more than 400m from **thermal cover** or **security cover**.
3. Within each **Moose Management Unit,** retain at least 67% of **Snow Interception Cover**
4. Where **Extended Use Roads** are within 100m of a **Moose Management Unit** retain **Visual Cover;** where present and to the extent practicable
5. Implement approved stocking standards with similar species distribution as the pre- harvested stands (including deciduous)[34]
6. 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.

5.7.4. Mountain Goat

Objective[35]

1. The objective set by government for wildlife is, without unduly reducing the supply of timber from British Columbia's forests, to conserve sufficient wildlife habitat in terms of amount of area, distribution of areas and attributes of those areas, for
    - the survival of species at risk,
    - the survival of regionally important wildlife, and
    - the winter survival of specified ungulate species.
2. 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

[34] Strategy taken from Section LRMP 2.1.12.2 of the Kamloops LRMP accessed Aug 9, 2018
[35] **FPPR** Section 7

notice to the person of the applicable:

- species referred to in subsection (1), and
- indicators of the amount, distribution and attributes of wildlife habitat described in subsection (1).

Applicable Area: Mountain Goat Winter Range: areas identified in the Kamloops Timber Supply Area by Ministry of Environment and provided as spatial data to support the Ungulate Winter Range Notice

Definitions:

Early Seral: forested stands less than 40 years of age;

Escape Terrain: rock outcrops or cliffs with slopes >30° and <60°;

Mountain Goat Winter Range: areas identified in the Kamloops Timber Supply Area by Ministry of Environment and provided as spatial data to support the **Ungulate Winter Range Notice**;

Snow Interception Cover: mature coniferous forest with preference given to Douglas- fir (*Pseudotsuga menziesii*) leading stands equal to or greater than 12m in height with a crown closure class equal to or greater than 7. Snow interception cover is assumed to also provide adequate security cover and thermal cover;

Ungulate Winter Range Notice: the notice for the Kamloops Timber Supply Area dated December 30, 2004.

Strategy:

1. When carrying out or authorizing primary forest activities within an area that is ≤ 200m from Escape Terrain within Mountain Goat Winter Range, the **Holder of this FSP** will:
   a) Ensure no more than 33 percent of the forested area is in **Early Seral** condition and
   b) Retain equal to or greater than 50 percent basal area of **Snow Interception Cover.**
2. In areas currently occupied by Mountain Goats for winter use within **Mountain Goat Winter Range**, the **Holder of this FSP** will comply with the **Ungulate Winter Range Notice** and refer to other pertinent information for guidance during the development of strategies to conserve sufficient habitat for this species.

5.7.5. Flammulated Owl

Objective:[36] 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 BC Environment, and species designated as regionally important (e.g. Mule Deer).

Applicable Area: All **FDU**s

Strategy: The strategy for Old Growth Management Areas (Section 5.5.3) is the strategy for ensuring habitat

[36] Kamloops LRMP Section 2.1.12 and HLP Order of January 23, 2006

needs for Flammulated Owl.

5.7.6. Lewis's Woodpecker

Objective:[37] 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 BC Environment, and species designated as regionally important (e.g. Mule Deer).

Applicable Area: All **FDU**s.

Definitions

Occurrence Site: an area where Lewis's Woodpecker has been identified in:

(i) in the Applicable SAR Notice[38]
(ii) by the BC Conservation Data Centre[39]

Management Area: area that incorporates the **Occurrence Site** and extends 100 meters (slope distance) beyond the Occurrence Site.

Strategy

1. When carrying out or authorizing primary forest activities within a cutblock; to which this FSP applies, where an **Occurrence Site** has been identified, the **Holder of this FSP** will; where practicable:
    a) Retain live ponderosa pine and black cottonwood within the **Management Area**,
    b) Retain single tree or group wildlife tree reserves on site, focusing reserves on non-hazardous dead standing trees, retaining 6 dead standing >45cm DBH trees where they exist and it is practicable within the **Management Area**, and
    c) Not employ the use of pesticides within the **Management Area**.

5.7.7. Spotted Bat

Objective[40]***:*** 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 BC Environment, and species designated as regionally important (e.g. Mule Deer).

Applicable Area: All **FDU**s.

Definitions

Occurrence Site: an area where Spotted Bat has been identified in the Applicable SAR Notice[41]; or by the

[37] Kamloops LRMP Section 2.1.12 and HLP Order of January 23, 2006
[38] Material supporting the Notice for Species at Risk – Kamloops Forest District as found at http://cmnmaps.ca/Metadata/Documents/NTSWA/Wildlife/Supporting_info_KamloopsFD_SAR.pdf
[39] CDC website http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/data-reporting/conservation-data-centre
[40] Kamloops LRMP Section 2.1.12 and HLP Order of January 23, 2006
[41] Material supporting the Notice for Species at Risk – Kamloops Forest District as found at http://cmnmaps.ca/Metadata/Documents/NTSWA/Wildlife/Supporting_info_KamloopsFD_SAR.pdf

BC Conservation Data Centre[42];

Core Area: an area not less than 5 hectares, incorporating an **Occurrence Site** and any cliff feature or talus slope within 150 meters (slope distance) of the **Occurrence Site**.

Management Area: an area located 100 meters (slope distance) beyond the edge of a **Core Area**

Strategy:

1. The Holder of this FSP will not carry out or authorize primary forest activities within a Core Area and,
2. When carrying out or authorizing primary forest activities within a Management Area, the Holder of this FSP will:
   a) Employ a partial cut harvest method, retaining at least 50% of the pre-harvest basal area at the completion of harvest,
   b) Not construct a road, unless there are no practicable alternative road locations,
   c) Retain single tree or group reserves on site (vets are preferred)
   d) Not remove rock or talus,
   e) Not employ the use of pesticides.
   f) Not carry out or authorize primary forest activities between March and October.

5.8. Visual Objectives[43]

Definitions:

Headwaters Visual Zone: means the old Headwaters Forest District boundary lines within the Thompson Rivers District, and including area based tenures therein.

Kamloops Visual Zone: means the old Kamloops Forest District boundary lines within the Thompson Rivers District, and including area based tenures therein.

Visually Sensitive Areas[44]: means areas that have been classified during a Visual Landscape Inventory and "are viewsheds or viewscapes visible from communities, public use areas and travel corridors (including roadways and waterways), or viewpoints identified through a variety of referral or planning processes, where the maintenance of the visual quality is important". They are spatially defined in Figure 5 of the *Kamloops Land and Resource Management Plan*, July 1995.

5.8.1. Visual Management in the "Headwaters Visual Zone"

Objective[45]:

1. In this section:

"scenic area" means an area of land established as a scenic area under the Forest Practices Code of

[42] http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre

43 **In this section "scenic area", "visual sensitivity class" and "altered forest landscape" have the meanings as defined in section 9.2 of the FPPR**

[44] Definition of 'Visually Sensitive Areas' taken from the Kamloops LRMP; July 28, 1995.section 2.1.14 https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/thompsonokanagan-region/kamloops-lrmp/kamloops_lrmp.pdf accessed Aug 10, 2018

[45] **FPPR** Section 9.2

British Columbia Act on or before October 24, 2002 and continued as a scenic area under section 180 (c) of the Act; [46]

"visual sensitivity class" means a visual sensitivity class established on or before October 24, 2002, particulars of which are publicly available in the Land and Resource Data Warehouse maintained by the minister responsible for the Land Act.

2. 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.

Objective*[47]*: 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*[48]:** Maintain viewscapes in recreation and tourism areas to a standard that does not detract from the recreational enjoyment of users.

Objective*[49]*: 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.

Applicable Area: the **Headwaters Visual Zone**.

Strategy:

1. Within Visual Polygon 1143[50] the holder of this FSP will:

[46] Under the *Operational and Site Planning Regulation*, '**scenic areas**' were defined as "any **visually sensitive area** or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district manager" (http://www.bclaws.ca/civix/document/id/loo60/loo60/107_98). In 1999, the District Manager of the old Clearwater Forest District; through a visual landscape inventory, identified **'scenic areas'** but *did not* establish Visual Quality Objectives (VQO). These **scenic areas** were then given different **visual sensitivity classes.** Therefore, in the old Clearwater Forest District, **FPPR** 9.2 applies *in addition to* the Kamloops LRMP Objectives. See Table 6 for explanation on how to apply the four different objectives.

[47] Kamloops LRMP Section 2.1.14 and HLP Order of January 23, 2006 as defined by Figure 5

[48] Kamloops LRMP Section 2.6.1 and HLP Order of January 23, 2006

[49] Kamloops LRMP Section 2.1.14 and HLP Order of January 23, 2006 as defined by Figure 5

[50] As identified in the Visual landscape Inventory dated Nov 30, 2015.

a) Ensure the visual management of this polygon will be designed and implemented to achieve the currently established VQO of Retention (R) or Partial Retention (PR) within twenty years of harvest completion. Rehabilitation will be based on more natural-appearing shapes created through additional harvesting combined with new stand regeneration.

b) Monitor progress towards achievement of the objective, and report on this progress to the District Manager of the Thompson Rivers Forest District every 5 years from harvest through to full achievement. Such reporting will include area harvested, area regenerated, rates of growth of regeneration and efforts to ensure that the VQO will be achieved within the twenty year time frame.

c) Ensure that primary forest activities supporting visual rehabilitation will follow as closely as practicable the July 28, 2015 version of the Dora Creek Visual Impact Assessment (VIA), but may vary as necessary to fully achieve the established VQO within the twenty year time frame. This strategy will continue until the established VQO is achieved.

2. For **Visually Sensitive Areas** and **Scenic Areas** within the **Applicable Area** and outside of Visual Polygon 1143, where the **Holder of this FSP** authorizes the harvesting of a cutblock to which this **FSP** applies, constructs a road, or authorizes the construction of a road, the resulting visual alteration will be consistent with Table 6

3. For areas outside of **Visually Sensitive Areas** and **Scenic Areas** that are within the **Applicable Area**, where the **Holder of this FSP** authorizes the harvesting of a cutblock to which this **FSP** applies, constructs a road, or authorizes the construction of a road, the **Holder of this FSP** will ensure that these areas are managed for landscape objectives as follows: at a maximum, alterations when assessed from a significant public viewpoint: are very easy to see, and large in scale and natural in appearance, or small to medium in scale but with some angular characteristics.

Table 5: Objectives to meet both the Kamloops LRMP and FPPR 9.2 Scenic Areas

	For Scenic Areas within the Headwaters Visual Zone (ie scenic areas with no established VQOs)					
	VSC1	***VSC2***	***VSC3***	***VSC4***	***VSC5***	***NVS or UA***
Within Kamloops LRMP VSA	***P or R***	***R or PR***	***PR or M***	***PR or M***	***M or MM***	***M***
Outside of a Kamloops LRMP VSA	***P or R***	***R or PR***	***PR or M***	***PR or M***	***M***	***M***

VSC = *Visually Sensitive*
NVS = *Non-Visually Sensitive*
UA = *Unclassified Area*
P = *Preservation Altered Forest Landscape Category/Management Categories*
R = *Retention Altered Forest Landscape Category/Management Categories*
PR = *Partial Retention Altered Forest Landscape Category/Management Categories*
M = *Modification Altered Forest Landscape Category/Management Categories*
MM = *Maximum Modification Altered Forest Landscape Category/Management Categories*

5.8.2. Visual Management in "Kamloops Visual Zone"

Objective [51]***:*** 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 [52]***:*** Maintain viewscapes in recreation and tourism areas to a standard that does not detract from the recreational enjoyment of users.

Objective[53]***:*** 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.

Applicable Area: within the **Kamloops Visual Zone**.

Strategy:

1. For **Visually Sensitive Areas** and **Scenic Areas**[54] within the **Applicable Area,** where the **Holder of this FSP** authorizes the harvesting of a cutblock to which this **FSP** applies, constructs a road or authorizes the construction of a road, the resulting visual alteration will be consistent with Table 7.
2. For areas outside of **Visually Sensitive Areas** and **Scenic Areas** that are within the **Applicable Area**, where the holder of this **FSP** authorizes the harvesting of a cutblock to which this **FSP** applies, constructs a road, or authorizes the construction of a road, the holder of this **FSP** will ensure that these areas are managed for landscape objectives as follows: at a maximum, alterations when assessed from a significant public viewpoint: are very easy to see, and large in scale and natural in appearance, or small to medium in scale but with some angular characteristics.

Table 6: Objectives to meet both the Kamloops LRMP and Established VQOs

	For Scenic Areas within the Kamloops Visual Zone (ie Scenic Areas with VQOs established by the District Manager)					
	P	**R**	**PR**	**M**	**MM**	**NVS or UA**
Within Kamloops LRMP VSA	**P**	**R**	**PR**	**M**	**MM**	**M**
Outside of a Kamloops LRMP VSA	**P**	**R**	**PR**	**M**	**M**	**M**

[51] Kamloops LRMP Section 2.1.14.2 and HLP Order of January 23, 2006

[52] Kamloops LRMP Section 2.6.1 and HLP Order of January 23, 2006

[53] Kamloops LRMP Section 2.1.14 and HLP Order of January 23, 2006 as defined by Figure 5

[54] Scenic Areas within the Kamloops Visual Zone had VQOs established in 2003 by the District Manager of the old Kamloops Forest District. Therefore **FPPR** 9.2 does not apply.See Table 7 for explanation on how to apply the three different objectives.

5.9. Cultural Heritage Resources

Objective[55]***:*** 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*

Applicable Area: All FDUs

Definitions:

Potentially Affected First Nations: those First Nations who have identified areas of interest (as defined by the Consultative Areas Database[56]) within the Thompson Rivers District.

Affected Cultural Heritage Resource: 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;

CHR Evaluation: an office and/or field based process conducted by a person authorized by the **Potentially Affected First Nation** to assess the existence and significance of an **Affected CHR**;

Strategy: The **Holder of this FSP** will:

1. Follow any specific or general protocols that are developed and agreed to with First Nations.
2. In the absence of specific or general protocols, and prior to carrying out or authorizing primary forest activities,
   a) Annually refer areas identified for proposed forest harvesting, road construction or site preparation to **Potentially Affected First Nations**, when these proposed activities fall within their identified area of interest, requesting specific information regarding CHR values;
   b) Complete a **CHR Evaluation** where requested by the **Potentially Affected First Nation.**
   c) If a **CHR Evaluation** identifies an **Affected CHR** in or adjacent to a proposed cutblock or road, work with **Potentially Affected First Nations** to develop strategies to mitigate the direct impact of the proposed forest harvesting, site preparation or road construction on the **affected CHR**, based on:
      (i) The relative value or importance of the **affected CHR** to a traditional use by a First Nation;
      (ii) The relative abundance or scarcity of the **affected CHR**;
      (iii) The historical extent of the traditional use of the **affected CHR** and
      (iv) Options for mitigating the impact of the proposed primary forest activities on the **affected CHR**;
      (v) The impact that conserving or protecting the **affected CHR** has on the **Holder of**

[55] **FPPR** Section 10
[56] http://maps.gov.bc.ca/ess/sv/cadb/

this FSP's ability to implement the proposed primary forest activities[57].

d) In the event that an agreement cannot be reached regarding the **Affected CHR**, the holder of this **FSP** will:

(i)Seek the advice from MFLNRORD District Staff on how best to proceed;

(ii) Consider **FPPR** Schedule 1 Section 4 Factors and the advice from MFLNRORD District Staff, to develop and implement mitigation strategies that will ensure that the **Affected CHR** is conserved or if necessary, protected; and

(iii) Share the management strategies with the **Potentially Affected First Nation.**

e) If a specific previously unidentified **Affected CHR** is identified during forest harvesting, road construction or site preparation activities, modify or stop work to the extent necessary to protect the **Affected CHR**, notify MFLNRORD District Staff and then complete 2, c or d.

5.10. Archaeological Assessments

Objective[58]***:*** Undertake archaeological assessments in all High and Medium Potential areas identified in the **Archaeological Overview Assessment**.

Applicable Area: All **FDU**s.

Definitions:

Archaeological Overview Assessment: the process as defined in the 'Guidelines for Archaeological Overview Assessment (AOA) Process for Forest Development Planning in the Kamloops TSA[59], as updated from time to time.

AOA Model: a risk assessment tool designed to assess the probability of finding archaeological evidence and is used to suggest sites that may require more detailed field assessments.

Archaeological Evaluation: Assessments as determined by the current 'Guidelines for the Archaeological Overview Assessment (AOA) Process for Forest Development Planning in the Kamloops TSA[60]

Affected Archaeological Resources[61]**:** the physical remains of past human activity as defined by the *Heritage Conservation Act* that are susceptible to damage caused by primary forest activities;

Participating First Nations: All First Nations communities as listed in the current 'Guidelines for the Archaeological Overview Assessment (AOA) Process for Forest Development Planning in the Kamloops TSA', as updated from time to time.

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[57] **FPPR** Schedule 1 Factor 4 accessed Aug 9, 2018

[58] Kamloops LRMP Section 2.1.16 and HLP Order of January 23, 2006

[59] ***Guidelines for the Archaeological Overview Assessment (AOA) Process for Forest Development Planning in Kamloops TSA***; https://www.for.gov.bc.ca/dka/DistrictPoliciesProcedures/Archaeology/Docs/Implementation%20Guidelines%20Sept%202013_V2.0.pdf accessed Aug 8, 2018

[60] ***Guidelines for the Archaeological Overview Assessment (AOA) Process for Forest Development Planning in Kamloops TSA***; https://www.for.gov.bc.ca/dka/DistrictPoliciesProcedures/Archaeology/Docs/Implementation%20Guidelines%20Sept%202013_V2.0.pdf accessed Aug 8, 2018

[61] Source: British Columbia Archaeological Resource Management Handbook; accessed June 1, 2017 https://www.for.gov.bc.ca/Archaeology/docs/resource_management_handbook/index.htm#arch

Potentially Affected First Nations: those First Nations who have identified areas of interest (as defined by the Consultative Areas Database[62]).

Strategy: Before carrying out or authorizing primary forest activities, the **Holder of this FSP** will:

1. Annually refer areas of proposed forest harvesting, road construction or site preparation to **Potentially Affected First Nations** to request specific information regarding archaeological values.
2. Where the **Potentially Affected First Nations** is a **Participating First Nations**, the **Holder of this FSP** will ensure that an **Archaeological Evaluation** is carried out for areas that overlap medium and high potential areas shown in the **AOA Model.**
3. If the **Potentially Affected First Nations** is not a **Participating First Nations**, before carrying out or authorizing primary forest activities, the **Holder of this FSP** will work with the First Nations community to carry out an archaeological assessment that complies with the *Heritage Conservation Act*.
4. For all **Potentially Affected First Nations** if the presence of an **Affected Archaeological Resource** is found through an **Archaeological Evaluation** or archaeological assessment that complies with the *Heritage Conservation Act*, the **Holder of this FSP** will:
   a) Work with the **Potentially Affected First Nations** to develop and implement strategies to mitigate the direct impact of the primary forest activities on the **Affected Archaeological Resource**.
   b) In the event that agreement cannot be reached regarding the **Affected Archaeological Resource**, the **Holder of this FSP** will:
      (i) Seek the advice from MFLNRORD District Staff on how best to proceed;
      (ii) Consider the advice from MFLNRORD District Staff, to develop and implement mitigation strategies that will ensure that the **Affected Archaeological Resource** is conserved or if necessary, protected in compliance with the *Heritage Conservation Act*; and
      (iii) Share the management strategies with the **Potentially Affected First Nation**.
   c) If a previously unidentified **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 **Affected Archaeological Resources**, then complete 4 a or b.

5.11. Settlement Area Objectives

Objective[63]***:*** Manage land within community growth boundaries to meet the objectives set out in approved community land use plans.

Applicable Area: Settlement Resource Management Zones (See Appendix A).

[62] http://maps.gov.bc.ca/ess/sv/cadb/
[63] Kamloops LRMP Section 2.2 and HLP Order of January 23, 2006

Strategy: Before carrying out or authorizing primary forest activities in the Settlement Resource Management Zones, the **Holder of this FSP** will ensure compliance with any approved community land use plans.

5.12. Range

Objective[64]***:*** Minimize tree/grass/cattle conflicts through integrated management practices.

Applicable Area: All **FDU**s.

Definitions:

Range Agreement Holder: the holder of a grazing tenure that is issued under the *Range Act* or *Land Act*

Strategy: Before carrying out or authorizing primary forest activities, the **Holder of this FSP** will:

1. Prior to the finalization of site plans and/or road permits, notify potentially impacted range agreement holder(s), as determined by a **QRP**, of primary forest activities within or adjacent to their range agreement to solicit their input.
2. Where a range agreement holder indicates that conflict between timber and range management may arise, work with the potentially affected range agreement holder(s) to develop strategies to minimize or mitigate the potential impact of the proposed activities on the range agreement through integrated management practices.
3. In the event that an agreement cannot be reached in (2), the **Holder of this FSP** will:
   a) Seek advice from MFLNRORD District staff;
   b) Consider the advice from MFLNRORD District staff to develop strategies to minimize or mitigate the potential impact of the proposed activities on the range agreement through integrated management practices.
   c) Communicate back to the range agreement holder and MFLNRORD District staff what management strategies, will be undertaken to minimize or mitigate the potential impact of the proposed activities on the range tenure through integrated management practices.
4. Where there is a vacant or an unallocated range agreement, the **Holder of this FSP** will;
   a) Seek advice from MFLNRORD District staff;
   b) Consider the advice from MFLNRORD District staff to develop strategies to minimize or mitigate the potential impact of the proposed activities on the range tenure through integrated management practices; and
   c) Communicate back to MFLNRORD District staff what management strategies, will be undertaken to minimize or mitigate the potential impact of the proposed activities on the range tenure through integrated management practices.

[64] Kamloops LRMP Section 2.1.10 and HLP Order of January 23, 2006

5. Ensure that primary forest activities are conducted in a manner consistent with the management strategy.

6. Measures – Natural Range Barriers and Invasive Plants

6.1. Natural Range Barriers

Requirement: A person who prepares a forest stewardship plan must specify measures to mitigate the effect of removing or rendering ineffective natural range barriers[65]. The following measures will be undertaken by the **Holder of this FSP** in all **FDU** areas that contain or are adjacent to range tenures.

Applicable Area: All **FDU**s.

Definitions

Natural Range Barrier: a river, a rock face, dense timber or other naturally occurring feature that stops or significantly impedes livestock movement to and from an adjacent area[66].

Range Agreement Holder: the holder of a grazing tenure that is issued under the Range Act or Land Act

Measures: In relation to the objectives set by government to mitigate the effect of removing or rendering ineffective **Natural Range Barriers**, the holder of this **FSP** will, prior to carrying out or authorizing primary forest activities:

1. Prior to the finalization of site plans and/or road permits, notify potentially impacted range agreement holder(s), as determined by a **QRP**, of primary forest activities within or adjacent to their range agreement to solicit their input.;
2. Where a range agreement holder indicates that primary forest activities may remove or render ineffective a **Natural Range Barrier**, work with the potentially affected range agreement holder(s) to develop strategies to minimize or mitigate the potential impact of the proposed activities on the **Natural Range Barrier**.
3. In the event that an agreement cannot be reached in (2),
   a) Seek advice from MFLNRORD District staff;
   b) Consider the advice from MFLNRORD District staff to develop management strategies that mitigate the effect of removing or rendering the ineffective natural range barrier
   c) Communicate back to the range tenure holder and MFLNRORD District staff what management strategies, will be undertaken
4. Where there is a vacant or an unallocated range agreement, the **Holder of this FSP** will;
   a) Seek advice from MFLNRORD District staff;

[65] FRPA Section 48, **FPPR** Section 18

[66] Ministry of Forests and Range Definitions of Forestry Terms as referenced in FRPA General Bulletin #21. February 2009.

b) Consider the advice from MFLNRORD District staff to develop strategies to minimize or mitigate the potential impact of the proposed activities on the range tenure through integrated management practices; and

c) Communicate back to MFLNRORD District staff what management strategies, will be undertaken to minimize or mitigate the potential impact of the proposed activities on the range tenure through integrated management practices.

d) Ensure that primary forest activities are conducted in a manner consistent with the management strategy.

6.2. Invasive Plants

Requirement: 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[67].

Applicable Area: All **FDU**s.

Definitions

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

Infested Sites: means a site occupied by an **Invasive Plant Species**

Personnel: means 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 **Holder of this FSP** will:

1. Provide annual training to **Personnel** on reporting and identification of **Invasive Plant Species;**
2. Prior to carrying out or authorizing primary forest activities within an **FDU**:
   a) consult the Invasive Alien Plant Program (IAPP) Application[68] database to locate known **Infested Sites**, and integrate these sites into site-level plans for development;
   b) Report any previously unidentified **Invasive Plant Species**, as identified by **Personnel**, to the 'Report-A-Weed' app (https://www.for.gov.bc.ca/hra/Plants/raw.htm) within 30 days of the **Holder of this FSP** becoming aware of the new infestation;
   c) Where practicable, design cutblock and road locations to avoid **Infested sites** when determining staging, parking and log sorting areas;
   d) Where practicable and where there is an **Infested Site** located within a cutblock; to which this **FSP** applies, notify contractors and licensees to carry out primary forest activities in non-**Infested Sites** before moving to **Infested sites**;

[67] FRPA Section 47, **FPPR** Section 17
[68] Invasive Alien Plant Program (IAPP) website https://www.for.gov.bc.ca/hra/Plants/application.htm

3. Prior to **Personnel** carrying out primary forest activities or the **Holder of this FSP** authorizing primary forest activities that will result in creating contiguous areas of disturbed soil ≥ 0.01ha, the **Holder of this FSP** will ensure that:
   a) within one year of the completion of the activities, the portions of the area occupied by ditch-lines, cut-or-fill slopes, and deactivated roads (which are not reforested and not including active road running surfaces) will be seeded using:
      (i) A seed or forage mixture that meets or exceeds Canada Common Number 1 Forage Mixture as defined by the *Canada Seeds Act* and Regulation, or
      (ii) native forbs or shrubs.
   b) Where areas have been seeded, inspect the areas within 12 months of seeding to ensure successful establishment (i.e. >90% cover), and repeat one additional seeding if there is <90% cover.

7. Stocking Standards

All stocking requirements are applicable across the entire **FSP** area (all **FDU**s).

Legal Reference: Section 29 (2) of the 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 **Holder of this FSP** will do so in accordance with the coniferous (even- aged), coniferous (uneven-aged), and deciduous stocking standards in Appendix B. These stocking standards, as previously approved, will remain in effect until changes are required to implement the updated Biogeoclimatic Ecosystem Classification (BEC) and associated Land Management Handbooks.

When required, an amendment will be made to incorporate the stocking standards and variations, as developed by the Thompson Okanagan Stocking Standards Working Group.
For areas where the Holder of this FSP authorizes commercial thinning or other similar type of intermediate cutting, stocking standards for the residual stand will be applied as per Table 9 and/or Section B.4.

APPENDIX A – Forest Stewardship Plan Maps

Table 7: Landscape Unit Based FDU Maps for the NRFL A86954 Kamloops TSA FSP

Forest Development Units	Map
ALL	1

APPENDIX B – Stocking Standards

B.1. General Discussion

B.1.1. Minimum Inter-Tree Distance

The minimum inter-tree distance may be reduced to 1.5 meters from the 2 meters stated in the stocking standards if the Site Plan has identified any of the following criteria:

- hygric or wetter sites
- mechanical site preparation (including mounding, patch scarification and disc trenching)
- group planting (eg. Grizzly habitat, Caribou Management Guidelines)
- very rocky soils
- areas with a high potential for cattle congregation
- sites with a significant number of wildlife trees
- riparian management zones with a high residual component
- sites that will be stumped to manage root rot
- partial cut areas with an abundance of residual regeneration.
- very harsh sites where protected microsites are critical (e.g. Shade, snow creep)

B.1.2. Crop Tree/Brush Ratio

Table 8: Percent height above brush by BEC Zone

Percent Height above Brush	Biogeoclimatic Zone
125	ESSF, IDF, MS, PP, BG
150	ICH, SBPS,SBS

B.1.3. 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 retained will be consistent with the tree characteristics as specified in the Silviculture Survey Reference cards (FS 660-1 HFP 01/05).

B.1.4. Mixed Wood Stocking Standards

Broadleaf species will be used as preferred or acceptable well-spaced trees in conjunction with suitable conifers where a predominantly broadleaf stand is being harvested for commercial use and there is a reasonable expectation of returning that site to a commercially valuable broadleaf stand. Consistent with the **Kamloops LRMP**, the option is available to use mixed wood stocking standards in areas with predominantly deciduous to create a stand similar to the pre-harvest stand.

B.1.5. Broadleaf Stocking Standards

- Broadleaf Stocking Standards will be used on sites of pure deciduous or at least greater than 80% deciduous

component by net cruise volume.

- Free growing height will be equal to the tallest conifer height for the site series/stocking standard ID.

B.1.6. Regeneration Delay

- Regeneration delay will be 4 years unless the site plan identifies natural regeneration for the block or SU then regeneration delay will be set up to a maximum of 7 years.

B.1.7. Maximum Density

- Maximum density for Lodgepole pine leading stands is 25,000 countable stems per hectare.
- Lodgepole pine leading stands are stands where pine component is ≥80 percent of the inventory label.
- For all other species and mixed pine stands where pine component is less than 80 percent by inventory, maximum density will be 10,000 countable stems per hectare.

B.1.8. White Pine

- Where white pine is an acceptable species in the attached stocking standards, planted rust resistant stock will be considered preferred, to a maximum of 50% of total preferred and acceptable well-spaced stems.
- Natural regenerated or non-rust resistant planted white pine to be pruned to 1.3 meter height to reduce white pine blister rust. White pine to be pruned only if accounting for more than 5% of the required stems per hectare to meet minimum free growing numbers. If less than 5% then accept unpruned white pine as free growing.

B.1.9. Deviation From Potential Stocking Standards and Survey methodology

Partial Cutting stocking standards may be used to define and assess stocking success in partial cut standards units (SUs) applied to even-aged Silviculture systems that have retained a minimum of $5m^2$/ha of residual basal area. Details of the methodology and process are contained in the background materials. Intent is to use these standards primarily where an Intermediate Cut No Regeneration Objectives Silviculture System is being used to meet necessary site objectives including but not limited to: Visuals, Wildlife, Adjacency, Range Management, Beetle Managemenet in areas of lower Beetle attach and susceptible host trees. (See Partial Cutting Stocking Standards – Appendix B)

B.2. Even Aged Stocking Standards

Table 9: Even Aged Stocking Standard

BGC Classification		Species (conifer)		Stocking (well spaced/ha)			Free Growing		
Zone / SZ	Site Series	Preferred (p)	Acceptable (a)	Target	Min pa	Min p	Latest Assessment (yrs.)	Species	Min ht (m)
ESSFdc2	01	Pl Sx	Bl, Pa	1200	700	600	20	Pl Others	1.6 0.8
	02	-	-	-	-	-	-	-	-
	03	Pl Sx	Bl Pa	1000	500	400	20	Pl Others	1.2 0.6
	04	Pl Sx	Bl Pa	1000	500	400	20	Pl Others	1.2 0.6
	05	Pl Se	Bl Pa	1000	500	400	20	Pl Others	1.2 0.6
	06	Pl Se	Bl Pa	1200	700	600	20	Pl Others	1.6 0.8
	07	Pl Se	Bl	1200	700	600	20	Pl Others	1.6 0.8
	08	Pl Se Bl		1000	500	400	20	Pl Others	1.2 0.6
	09	non-forested	-	-	-	-	-	-	-
ESSFwc2	01	Bl Se	Pl	1200	700	600	20	Pl Others	1.6 0.8
	02	Pl Se	Bl	1000	500	400	20	Pl Others	1.2 0.6
	03	Se Pl	Bl	1000	500	400	20	Pl Others	1.2 0.6
	04	Bl Se	Pl	1200	700	600	20	Pl Others	1.6 0.8
	05	Bl Se	Pl	1200	700	600	20	Pl Others	1.6 0.8
	06	Bl Se	Pl	1200	700	600	20	Pl Others	1.6 0.8
	07	Bl Se	Pl	1200	700	600	20	Pl Others	1.6 0.8
	08	Bl Se	Pl	1000	500	400	20	Pl Others	1.2 0.6
	09	Pl Se	Bl	400	200	200	20	Pl Others	1.2 0.6
	10	non-forested	-	-	-	-	-	-	-

BGC Classification		Species (conifer)		Stocking (well spaced/ha)			Free Growing		
Zone / SZ	Site Series	Preferred (p)	Acceptable (a)	Target	Min pa	Min p	Latest Assessment (yrs.)	Species	Min ht (m)
ICHmk2	01	Fd Pl Sx	Bl Cw Lw	1200	700	600	20	Pl Lw Fd Sx Others	2.0 1.4 0.8 1.0
	02	Fd Pl	Sx Lw	600	400	400	20	Pl Lw Fd Others	1.4 1.0 0.8
	03	Fd Pl Sx	Cw Lw	1000	500	400	20	Pl, Lw Fd Others	1.4 1.0 0.8
	04	Fd Pl Sx	Bl Cw Lw	1200	700	600	20	Pl Lw Fd Sx Others	2.0 1.4 0.8 1.0
	05	Fd Pl Sx	Bl Cw Lw	1200	700	600	20	Pl Lw Fd Others	2.0 1.4 1.0
	06	Pl Sx Fd	Bl Cw Lw	1000	500	400	20	Pl Lw Fd Others	1.4 1.0 0.8
ICHmw3	01	Fd Sx Pw Cw	Pl Bl Hw Lw	1200	700	600	20	Pl Pw Lw Fd Others	2.0 2.0 1.4 1.0
	01-YC	Fd Cw Pw Sx	Bl Hw Pl Lw	1200	700	600	20	Pl Pw Lw Fd Others	2.0 2.0 1.4 1.0
	02	Fd Pl Pw	Cw Lw	1000	500	400	20	Pl Pw Lw Fd Others	1.4 1.0 0.8
	03	Fd Pl Pw	Cw Sx Bl Lw	1000	500	400	20	Pl Pw Lw Fd Others	1.4 1.4 1.0 0.8
	04	Fd Pl Pw	Cw Sx Lw	1200	700	600	20	Pl Pw Lw Fd Others	2.0 2.0 1.4 1.0
	05	Fd Cw Sx Pw	Bl Pl Lw	1200	700	600	20	Pl Pw Lw Fd Others	2.0 2.0 1.4 1.0
	06	Cw Fd Hw Sx Pw	Bl Pl Lw	1200	700	600	20	Pl Pw	2.0

BGC Classification		Species (conifer)		Stocking (well spaced/ha)			Free Growing		
Zone / SZ	**Site Series**	**Preferred (p)**	**Acceptable (a)**	**Target**	**Min pa**	**Min p**	**Latest Assessment (yrs.)**	**Species**	**Min ht (m)**
ICHmw3 (cont.)								Lw Fd Others	2.0 1.4 1.0
	07	Cw Sx Fd Pw	Bl Hw Pl Lw	1200	700	600	20	Pl Pw Lw Fd Others	2.0 2.0 1.4 1.0
	08	Cw Hw Pl Sx Pw	Bl	1000	500	400	20	Pl Others	1.4 0.8
	09	non-forested	-	-	-	-	-	-	-
ICHvk1	01	Cw Sx Hw	Bl Fd Pw	1200	700	600	20	Pw Fd Others	2.0 1.4 1.0
	02	Fd Cw Sx	Bl Hw Pw	1200	700	600	20	Pw Fd Others	2.0 1.4 1.0
	03	Cw Fd Hw Sx	Bl Pw	1200	700	600	20	Pw Fd Others	2.0 1.4 1.0
	04	Cw Fd Hw Sx	Bl Pw	1200	700	600	20	Pw Fd Others	2.0 1.4 1.0
	05	Cw Sx	Bl Hw Pw	1000	500	400	20	Pw Others	1.4 0.8
	06	Cw Hw Sx	Bl Pw	1000	500	400	20	Others	0.8
ICHwk1	01	Cw Fd Hw Sx	Bl Pw Lw	1200	700	600	20	Pw Lw Fd Others	2.0 2.0 1.4 1.0
	02	Fd Pl Cw	Pw Sx	1000	500	400	20	Pl Pw Fd Others	1.4 1.0 0.8
	03	Fd Cw	Hw Pw Sx Lw	1200	700	600	20	Lw Fd Others	2.0 1.4 1.0
	04	Fd Cw Sx	Hw Pw Lw	1200	700	600	20	Pw Lw Fd Others	2.0 2.0 1.4 1.0
	05	Cw Sx	Bl Fd Hw Pw Lw	1200	700	600	20	Pw Lw	2.0 2.0

BGC Classification		Species (conifer)		Stocking (well spaced/ha)			Free Growing		
Zone / SZ	Site Series	Preferred (p)	Acceptable (a)	Target	Min pa	Min p	Latest Assessment (yrs.)	Species	Min ht (m)
ICHwk1 (cont.)								Fd Others	1.4 1.0
	06	Cw Sx	Bl Hw Pw	1000	500	400	20	Pw Others	1.4 0.8
	07	Cw Hw Sx	Bl1	1000	500	400	20	All	0.8
	08	non-forested	-	-	-	-	-	-	-
IDFdk1	01	Fd Pl	Py Sx Lw	1000	500	400	20	Pl Lw Fd Sx Py	1.0 1.0 0.8 0.6 0.6
	02	Fd Py		600	400	400	20	Fd Py	0.8 0.6
	03	Fd Pl Py		600	400	400	20	Pl Fd Py	1.0 0.8 0.6
	04	Fd Pl Py	Sx Lw	1000	500	400	20	Pl Lw Fd Others	1.0 0.8 0.6
	05	Fd Sx Pl	Bl Lw	1000	500	400	20	Pl Lw Fd Others	1.0 0.8 0.6
	06	Pl Sx Fd	Bl	1000	500	400	20	Pl Fd Others	1.0 0.8 0.6
	07	non-forested	-	-	-	-	-	-	-
IDFdk2	01	Fd Pl	Py Sx Lw	1000	500	400	20	Pl Lw Fd Sx Py	1.0 0.8 0.6 0.6
	02	Fd Py		600	400	400	20	Fd Py	0.8 0.6
	03	Fd Pl Py		1000	500	400	20	Pl Fd Py	1.0 0.8 0.6
	04	Fd Pl Sx	Py Lw	1200	700	600	20	Pl Lw Fd Py Sx	1.4 1.0 0.8
	05	Fd Sx Pl	Cw Lw	1200	700	600	20	Pl Lw	1.4

BGC Classification		Species (conifer)		Stocking (well spaced/ha)			Free Growing		
Zone / SZ	**Site Series**	**Preferred (p)**	**Acceptable (a)**	**Target**	**Min pa**	**Min p**	**Latest Assessment (yrs.)**	**Species**	**Min ht (m)**
IDFdk2 (cont.)								Fd Others	1.0 0.8
	06	Pl Sx Fd	Bl	1000	500	400	20	Pl Fd Others	1.0 0.8 0.6
	07	Pl Sx	Cw Bl	1000	500	400	20	Pl Others	1.0 0.6
	08	non-forested	-	-	-	-	-	-	-
IDFmw2	01	Fd Pl	Cw Sx Bl Lw	1200	700	600	20	Pl Lw Fd Others	1.6 1.0 0.8
	01-YC	Fd Pl	Bl Sx Cw Lw	1200	700	600	20	Pl Lw Fd Others	1.6 1.0 0.8
	01-YS	Fd Pl	Sx Bl Cw Lw	1200	700	600	20	Pl Lw Fd Others	1.6 1.0 0.8
	02	Fd Pl	Py Lw	600	400	400	20	Pl Lw Fd Py	1.2 0.8 0.6
	03	Fd Pl	Py Cw Sx Lw	1000	500	400	20	Pl Lw Fd Others	1.6 1.0 0.8
	04	Fd Sx Pl	Cw Lw	1200	700	600	20	Pl Lw Fd Others	1.6 1.0 0.8
	05	Sx Pl	Cw	400	200	200	20	Pl Others	1.2 0.6
IDFxh2	01	Fd Py		1000	500	400	20	All	0.6
	02	Py Fd		400	200	200	20	All	0.6
	03	Py Fd		400	200	200	20	All	0.6
	04	Py Fd		600	400	400	20	All	0.6
	05	Fd Py		1000	500	400	20	All	0.6
	06	Fd Py		1200	700	600	20	All	0.6
	07	Fd Sx	Py Cw	1200	700	600	20	All	0.6
	08	Sx Fd	Pl	1000	500	400	20	Pl	0.8

BGC Classification		Species (conifer)		Stocking (well spaced/ha)			Free Growing		
Zone / SZ	Site Series	Preferred (p)	Acceptable (a)	Target	Min pa	Min p	Latest Assessment (yrs.)	Species	Min ht (m)
IDF xh2 (cont.)								Others	0.6
MSdm2	01	Pl Sx Fd	Bl Lw	1200	700	600	20	Pl Lw Others	1.4 0.8
	02	non-forested	-	-	-	-		-	-
	03	Fd Pl	Bl Sx	1000	500	400	20	Pl Others	1.0 0.6
	04	Pl Fd Sx	Bl Lw	1200	700	600	20	Pl Lw Others	1.4 0.8
	05	Pl Sx Fd	Bl Cw Lw	1200	700	600	20	Pl Lw Others	1.4 0.8
	06	Pl Sx Fd	Bl Lw	1200	700	600	20	Pl Lw Others	1.4 0.8
	07	Pl Sx	Bl	1000	500	400	20	Pl Others	1.0 0.6
MSxk	01	Pl Fd Sx	Bl	1200	700	600	20	Pl Others	1.4 0.8
	02	Pl Fd	Bl	1000	500	400	20	Pl Others	1.0 0.6
	03	non-forested	-	-	-	-	-	-	-
	04	non-forested	-	-	-	-	-	-	-
	05	Pl Fd	Bl Sx	1000	500	400	20	Pl Others	1.0 0.6
	06	Pl Fd Sx	Bl Lw	1200	700	600	20	Pl Lw Others	1.4 0.8
	07	Pl Fd Sx	Bl	1200	700	600	20	Pl Others	1.4 0.8
	08	Pl Sx Fd	Bl	1200	700	600	20	Pl Others	1.4 0.8
	09	Pl Sx	Fd Bl	1000	500	400	20	Pl Others	1.0 0.6
SBSmm	01	Pl Sx Fd	Bl	1200	700	600	20	Pl Fd Others	2.0 1.4 1.0
	02	Pl Fd	Sx	1000	500	400	20	Pl Fd Others	1.4 1.0 0.8
	03	Fd Pl	Sx	1000	500	400	20	Pl Fd Others	1.4 1.0 0.8
	04	Pl Fd	Sx	1000	500	400	20	Pl Fd Others	1.4 1.0 0.8
	05	Pl Fd Sx	Bl	1200	700	600	20	Pl	2.0

BGC Classification		Species (conifer)		Stocking (well spaced/ha)			Free Growing		
Zone / SZ	**Site Series**	**Preferred (p)**	**Acceptable (a)**	**Target**	**Min pa**	**Min p**	**Latest Assessment (yrs.)**	**Species**	**Min ht (m)**
								Fd Others	1.4 1.0
SBSmm (cont.)	06	Pl Sx Fd	Bl	1200	700	600	20	Pl Lw Fd Others	2.0 1.4 1.0
	07	Pl Sx Fd	Bl Cw	1200	700	600	20	Pl Fd Others	2.0 1.4 1.0
	08	Pl Sx	Bl	1000	500	400	20	Pl Others	1.4 0.8
	09	non-forested	-	-	-	-	-	-	-
SBPSmk	01	Fd Pl Sx		1200	700	600	20	Pl Fd Sx	1.6 1.0 0.8
	02	Fd Pl	Sx	1000	500	400	20	Pl Fd Sx	1.2 0.8 0.6
	03	Fd Pl		1200	700	600	20	Pl Fd	1.6 1.0
	04	Fd Pl Sx		1200	700	600	20	Pl Fd Others	1.6 1.0 0.8
	05	Fd Pl Sx		1200	700	600	20	Pl Fd Sx	1.6 1.0 0.8
	06	Pl Sx		1200	700	600	20	Pl Sx	1.6 0.8
	07	Sx	Pl Bl	1000	500	400	20	Pl Others	1.2 0.6
	08	Sx Pl	Sb	400	200	200	20	Pl Others	1.2 0.6

B.3. Uneven Aged Stocking Standards

Table 10: Uneven Aged Stocking Standards

Target Stocking from Even-Aged Stand (well-spaced/ha)	Layer	Stocking (well-spaced/ha)		
		Target	Minimum Preferred and Acceptable	Minimum Preferred
1200	1	600	300	250
	2	800	400	300
	3	1000	500	400
	4	1200	700	600
1000	1	400	200	200
	2	600	300	250
	3	800	400	300
	4	1000	500	400
900	1	400	200	200
	2	500	300	250
	3	700	400	300
	4	900	500	400
800	1	300	150	150
	2	400	200	200
	3	600	300	300
	4	800	400	400
600	1	300	150	150
	2	400	200	200
	3	500	300	300
	4	600	400	400
400	1	200	100	100
	2	300	125	125
	3	300	150	150
	4	400	200	200

B.4. Mixed Wood and Broadleaf Stocking Standards

Table 11: 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 FG Max (yrs)	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

B.5. Footnotes for Stocking Standards

Table 12: Footnotes for Stocking Standard Tables

Footnote #	Footnote
1	elevated microsites are preferred
2	suitable on thick forest floors
3	restricted to coarse-textured soils
4	restricted to medium-textured soils
5	footnote retired
6	restricted to nutrient-very-poor sites
7	restricted to nutrient-medium sites
8	restricted to steep slopes
9	restricted to southerly aspects
10	restricted to northerly aspects
11	restricted to crest slope positions
12	suitable on cold air drainage sites
13	restricted to upper elevations of biogeoclimatic unit
14	restricted to lower elevations of biogeoclimatic unit
15	restricted to northern portion of biogeoclimatic unit in region
16	restricted to southern portion of biogeoclimatic unit in region
17	restricted to western portion of biogeoclimatic unit in region
18	restricted to eastern portion of biogeoclimatic unit in region
23	restricted to trial use
24	suitable (as a major species) in wetter portion of biogeoclimatic unit
27	partial canopy cover required for successful establishment
28	limited by moisture deficit
29	risk of heavy browsing by moose
30	risk of porcupine damage
31	risk of white pine blister rust
32	limited by growing-season frosts
33	footnote retired and replaced with footnote 'a'
34	risk of snow damage
35	risk of weevil damage
37	risk of heart rots
38	footnote retired
39	avoid exposed and windy sites
40	risk of redheart
41	limited by poorly drained soils
42	restricted to fresh soil moisture regimes
47	risk of balsam wooly adelgid
48	risk of heavy browsing by deer
49	applies only to rust resistant, planted stock.
50	restricted to sites where the species occurs as a major species in a pre-harvest, natural stand
51	restricted to areas with proven Pl performance
52	restricted to sheltered microsites with deep soil
53	minor component
54	risk of unsuccessful release of advance regeneration
55	acceptable in sx-sm portion of site series
#	**Localized Footnotes**
57	Pw rust-resistant stock may be preferred to a max 50% of preferred and acceptable well-spaced stems.
59	Kamloops Forest District - species is acceptable in Kamloops Forest District only.
60	Kamloops Forest District - species is preferred in Kamloops Forest District only.
61	Headwaters Forest District - species is acceptable in Headwaters Forest District only.
62	Headwaters Forest District - species is preferred in Headwaters Forest District only.
63	Species is restricted to upper elevations when used in the southern portion of the biogeoclimatic unit.
64	Lw Restricted to East of North Thompson River and South of 51° 30' Latitude and to a maximum of 25% of TSSpa
65	Lw Restricted to a maximum of 25% of TSSpa

B.6. Partial Cutting Stocking Standards

The following proposed approach to defining and assessing stocking success in partial cut standards units apply to even-aged silvicultural systems that have retained a minimum of five (5) m^2/ha of residual basal area. Recommended stocking decisions are based on management objectives that are focused toward the production of sawlog timber. Bancroft *et. al.* (2003) and Martin (2004) have completed the initial work associated with the "Deviation From Potential" approach to assessing stocking in complex partially cut stand structures; their work has been incorporated into this proposed approach for Kamloops IFL – Thompson Rivers District.

It is important to note that some of the residual structures that would be accepted using this approach for stocking assessment are below stocking levels that would promote optimal growth where sawlog timber production is the dominant management objective. In many cases, they are intermediate cuts in a silvicultural system. These structures will result in growth losses, relative to TSR expectations, if they are retained for extended periods (Przeczek 2002). Non-timber values that require a partial cutting treatment to achieve short term management objectives (0 – 20 years) will result in stand structures that are appropriate for the use of these standards. The expectation in these standards units is that additional harvesting with follow-up regeneration treatments will be required in the 20 – 30 year period if base case TSR volume assumptions are to be attained. If additional harvesting that will promote close to optimal sawlog growth rates does not occur, TSR base case assumptions will

need modification. Where non-timber management objectives require the long-term retention of residual structures that are below the minimum stocking line(s) in Figure 2, unique standards will be submitted to the District Manager for approval through a **FSP** amendment.

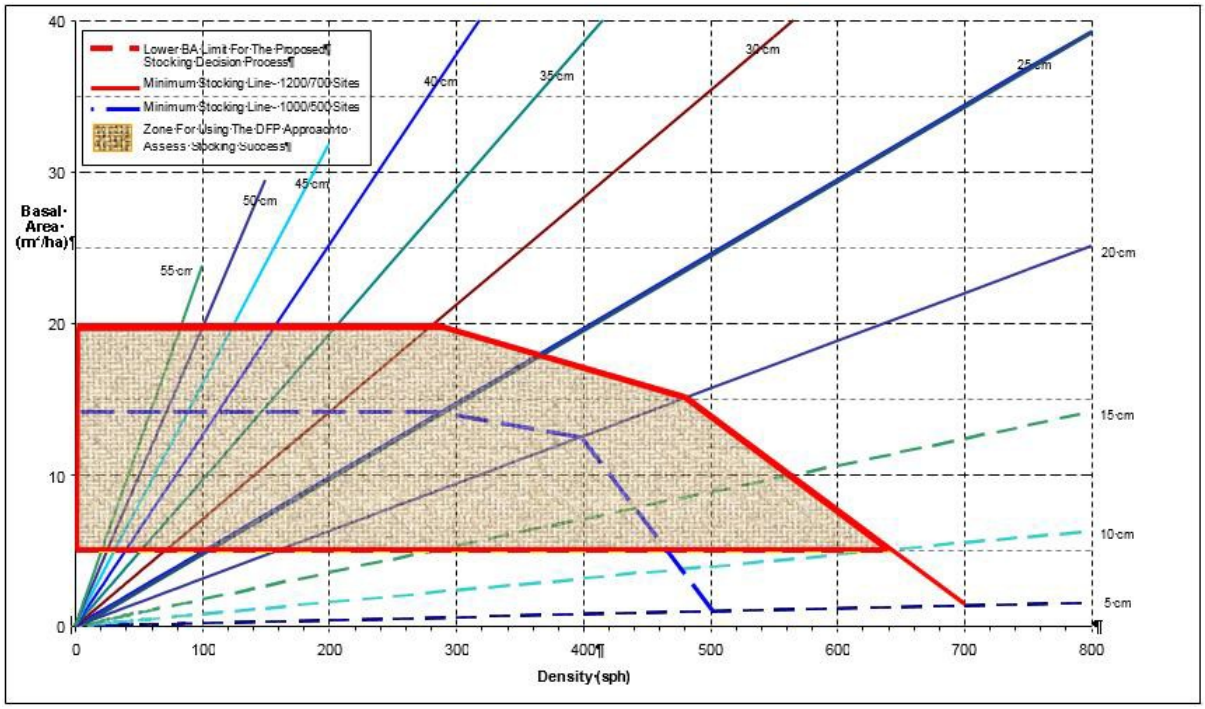

Figure 2: Stocking zone, lower basal area limit, minimum stocking line, and isolines of average stand diameter for assessing partial cut stands in Kamloops IFL – Thompson Rivers District.

B.6.1. Assessment Procedures

Plot assessments will be conducted as per standard even-aged regeneration and free-growing assessments with the following change:

Layer 1 stems (≥12.5 cm dbh): Tally stems by species and diameter class (5 or 10 cm classes are appropriate) using an appropriate prism. Initial indications suggest that a 3 - 5 BAF prism will provide reasonable data for most sites. Tally dead and moribund trees as separate classes (species) but do not include them in basal area summaries for the stand. It will also be necessary to tally acceptable and unacceptable layer 1 stems separately because the minimum stocking line decision is based on acceptable layer 1 stems and the DFP stocking decision requires ≥ 80% of the layer 1 stems to be of acceptable quality; the deviation from potential (DFP) calculation for each plot is based on all layer 1 stems (except for dead and moribund). The more intensive tally of BA will assist with the determination of DFP until surveyors and practitioners become familiar with the system. It will also help with the preparation of more detailed treatment prescriptions where additional overstory manipulation will be required (e.g., harvesting).

Data Compilation: In addition to standard regeneration survey summary information, the following are required:

1. For the minimum stocking line, compute basal area, density, and mean diameter of live acceptable L1 trees.

2. Basal area (m^2) and well-spaced sph for each plot will be compared to Table 9 and the DFP will be recorded. The mean DFP will be calculated for each stratum along with the proportion (%) of stocked, partially stocked and open plots[69][58]; and,
3. A stand table (m^2/ha) could be prepared for each stratum to assist with decision making but it is not a survey requirement at this time.

B.6.2. Decision Rules

Stocking decisions will be based on the flow chart provided in Figure 3. Figure 2 should be consulted when assessing stocking in these partially cut stands. It uses density (sph), basal area (m^2/ha), and isolines of average stand diameter (after Gingrich 1967) as the basis for displaying:

4. **Minimum Stocking Line:** This line represents the lowest residual stocking level of acceptable layer 1 stems (≥12.5 cm dbh) that will be considered stocked. If average stocking in a standards unit meets or exceeds the minimum stocking line the SU will be considered SR or FG (if all other species selection, health, size, and damage criteria are met). Two minimum stocking lines are presented; one for sites with 700/1200 even-aged stocking standards and one for sites with 500/1000 even-aged stocking standards.
   The deviation from potential stocking (DFP) should also be assessed to ensure that the majority of the standards unit is acceptably stocked (≥60% of the area as determined by the percent of plots).
5. **Lower Basal Area Limit**: This line defines the lowest average residual basal area, including all layer 1 stems, (<5 m^2/ha) that a standards unit is allowed for the application of this approach to stocking assessment. Standards units with residual basal areas < 5 m^2/ha should be assessed with current even-aged stocking standards.
6. **Deviation From Potential Stocking Zone:** This area of the diagram represents the range of residual stand structures that will require the application of the DFP approach to assessing stocking and free-growing status.

[69] the percent of plots calculation is a surrogate for the percent of area. If the proportion or distribution of plots does not reflect the area for each DFP stocking class the calculation will be incorrect and another approach to estimating proportional area will have to be documented and applied.

Table 13: Deviation from potential (DFP) volume by understory tree density and overstory basal area.

OS Basal Area	Well-spaced trees in plot 0	1	2	3	4	5	6	7	8
0				0	0				
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					
4				0					
5				0					
6				0					
7			0	0					
8			0	0					
9			0	0					
1			0	0					
1			0						
1		0	0						
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2									
3									

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

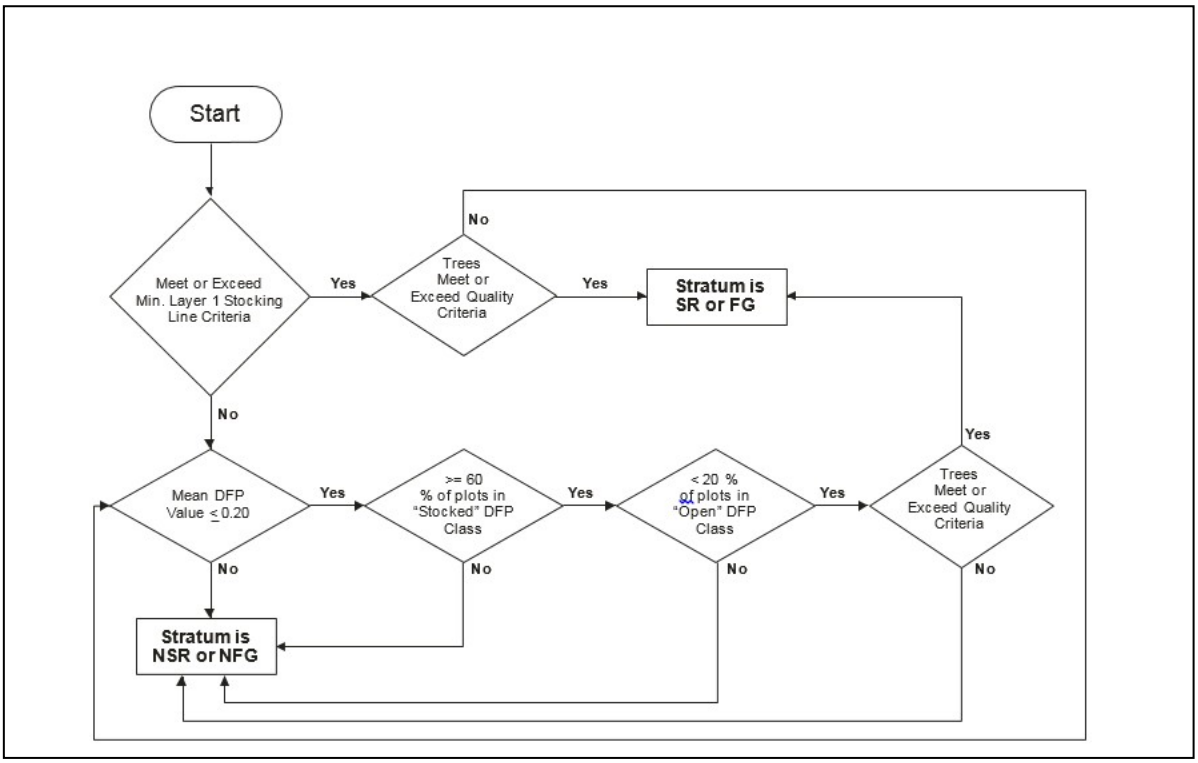

Figure 3: Stocking decision flowchart.

Many of these stands will have clumped, irregular stocking patterns and the amount of overstory will limit the potential for augmenting stocking through planting. All NSR openings 1.0 ha, that are not under significant overstory influence, will be reforested.

There may be a limited biological or financial opportunity to increase stocking in some partially cut stands that do not meet the stocking criteria. However, these strata cannot be declared stocked or free-growing; additional harvesting treatments may be required before stocking levels in layer 4 can be augmented.

B.6.3. Proposed Standards

Minimum Stocking Line, Deviation From Potential, and General Criteria

Table 13 and Table 14 provide a set of proposed standards for partial-cutting in Kamloops IFL – Thompson Rivers District. The standards should be applied to partially cut standards units that were not prescribed for single-tree silvicultural systems, NDT4 ecosystem restoration (open forest or open range), beetle-proofing in lodgepole pine dominated stands, or where management objectives require long term overstory retention and where a reduction in yield is acceptable. These standards should be viewed as a First Approximation and they will be revised as more experience is gained with the system and as better information becomes available.

Table 14: Proposed minimum partial-cutting stocking standards for site series with 700/1200 even-aged stocking standards, for Kamloops IFL – Thompson Rivers District.

Minimum Stocking Line Criteria			Deviation from Potential (DFP) Criteria			General Criteria			
Average DBH (cm)[1]	MSS Density (sph)	MSS Basal Area (m^2/ha)	Maximum Mean DFP	Maximum Percent Partially Stocked Plots	Maximum Percent Open Plots	Min. Intertree Distance[2]	Regen. Delay (max. yrs.)[3]	FG Earliest (yrs.)[3]	FG Latest (yrs.)[3]
< 12.5									
15	560	10							
20	480	15							
25	360	17							
30	280	20	0.20	40	20	n/a + 2.0	1	1	2
35	210	20							
40	180	20							
45	150	20							
50 - 60	100	20							

Notes:

7. Calculation is based on stems 12.5 cm dbh; Average DBH is the weighted average for all acceptable stems.
8. No minimum intertree will be applied to layer 1 stems; a 2.0 minimum intertree distance will apply to layer 2, 3, and 4 stems.
9. Timeframes only apply where a stratum is declared SR or FG using the minimum stocking line and were chosen to allow up to 2 years for assessing windthrow damage prior to a free-growing declaration. If the minimum stocking line is not used, time frames will default to even-aged regeneration delay and free- growing delay periods.

Table 15: Proposed minimum partial-cutting stocking standards for site series with 500/1000 even-aged stocking standards, for the Kamloops IFL – Thompson Rivers District.

Minimum Stocking Line Criteria			Deviation from Potential (DFP) Criteria			General Criteria			
Average DBH (cm)[1]	MSS Density (sph)	MSS Basal Area (m^2/ha)	Maximum Mean DFP	Maximum Percent Partially Stocked Plots	Maximum Percent Open Plots	Min. Intertree Distance[2]	Regen. Delay (max. yrs.)[3]	FG Earliest (yrs.)[3]	FG Latest (yrs.)[3]
< 12.5									
15	440	8							
20	400	12.5							
25	290	14	0.20	40	20	n/a + 2.0	1	1	2
30	200	14							
35	150	14							
40	110	14							
45+	90	14							

Notes:

(a) Calculation is based on stems 12.5 cm dbhob; Average DBH is the weighted average for all acceptable stems.

(b) No minimum intertree will be applied to layer 1 stems; a 2.0 minimum intertree distance will apply to layer 2, 3, and 4 stems.

(c) Timeframes only apply where a stratum is declared SR or FG using the minimum stocking line and were chosen to allow up to 2 years for assessing windthrow damage prior to a free-growing declaration. If the minimum stocking line is not used, time frames will default to even-aged regeneration delay and free- growing delay periods.

Tree Acceptability Criteria

Table 16: provides a summary of the standards for tree acceptability for regeneration and free- growing assessments.

Tree Acceptability Criteria	Regeneration Assessment	Free-growing Assessment
Species	All layer 1 stems will be considered as preferred species. Preferred and acceptable species for the site as per current even-aged stocking standards for	All layer 1 stems will be considered as preferred species. Preferred and acceptable species for the site as per current even-aged stocking standards for other layers.
MSS_p	Preferred species 50% of the well- spaced stocking	Preferred species 50% of the free-growing stocking
Health	Healthy	As per free-growing damage criteria (ETFG Guidebook, Appendix 5) and the Tree Wounding Guidebook. In stands that do not meet or exceed the minimum stocking line, ≥ 80% of the TOTAL Layer 1 stems must be of acceptable quality.
Brush		Appropriate conifer/brush ratio (ETFG Guidebook, Appendix 9)
Height	Min. 30 cm	70% of the minimum free- growing height for the species and site
Advanced Regeneration		Advanced regeneration standards (ETFG Guidebook, Appendix 10)
Minimum Intertree Distance	2.0 m, no MITD for layer 1 stems	2.0 m, no MITD for layer 1 stems

B.7. References (for Stocking Standards)

Bancroft, Bryce, Ken Day, Pat Martin, Kim Peel and Ken Zielke. 2003. *Partially Cut: Occupied or Not? What are my options? – A proposed survey approach*. . Unpubl. FIA Rep. for Lignum Limited.

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Gingrich, Samual F. 1967. *Measuring and evaluating stocking and stand density in upland hardwood forests in the Central States*. For. Sci. 13: 38 – 53.

Martin, Pat. 2004. *Second approximation of the deviation from potential table*. Unpubl. Information Sheet. 17pp.

Przeczek, John E. 2002. *Partial Cutting Effects Study: Modeling with Prognosis^{BC} and TASS to Assess Partial Cutting Impacts on Yield in the Invermere T.S.A.*. Unpubl. FIA Rep. for Slocan Forest Products Ltd. and Tembec Industries Ltd. 21 pp. + append.