

# Current Condition Report for Old Growth Forest in the Thompson Okanagan – Kamloops LRMP Area – 2019 Analysis

March 2024



Ministry of  
Water, Land and  
Resource Stewardship

**CEF** Cumulative  
Effects  
Framework

### **Citation**

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### **Companion Documents**

This assessment uses the following companion documents:

Province of British Columbia. (2016). Cumulative Effects Framework Interim Policy for the Natural Resource Sector. [https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/cef-interimpolicy-oct\\_14\\_-2\\_2016\\_signed.pdf](https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/cef-interimpolicy-oct_14_-2_2016_signed.pdf)

Province of British Columbia. (2017). Interim Assessment Protocol for Old Growth Forest in British Columbia Version 1.1. [https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/interim\\_old\\_growth\\_protocol\\_v11\\_jan2018\\_final.pdf](https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/interim_old_growth_protocol_v11_jan2018_final.pdf).

Additional background context is also provided:

Ministry of Water, Land and Resource Stewardship (WLRS). (2024). Old Growth Forests in British Columbia: Cumulative Effects Assessment Backgrounder. Victoria, British Columbia. <https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/protocols/cef-old-growth-ce-assessment-backgrounder-final-2024.pdf>

Ministry of Water, Land and Resource Stewardship (WLRS). (2024). Old Growth Forest Management in British Columbia: Provincial Backgrounder. Victoria, British Columbia. <https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/protocols/cef-old-growth-backgrounder-final-2024.pdf>

### **A Note on the Development of this Report**

B.C. is committed to collaboration with Indigenous partners on issues related to conservation of biodiversity. This report, and the western science information collected by the Province of B.C. within, seeks to address the questions posed in this assessment. It is intended to be a starting point in supporting and informing future work and collaboration between the Province and First Nations, and engagement with stakeholders, on the management of cumulative effects. First Nations with traditional territories overlapping this assessment area were provided this report for review.

This report is available to government-to-government tables working on strategic landscape planning initiatives so that these tables can evaluate if and how any of the data, results, or other information contained in this report can support their planning.

### **Disclaimer**

Current condition reports for old growth forest are being prepared by the provincial Cumulative Effects Framework (CEF) within the Ministry of Water, Land and Resource Stewardship (WLRS). These reports require standardized assumptions and methodologies (described in the [Interim Assessment Protocol for Old Growth Forest in British Columbia](#) (2017)) that can be consistently applied across the province. The reports address specific questions about the current condition of indicators for old growth forest, mature-plus-old forest, and old growth management areas (OGMAs). At this stage of reporting, the assessment does not incorporate the consideration of implementation policies such as the application of the rules-based approach from the Landscape Unit Planning Guidebook, OGMA amendment policies, and the contributions of other conservation designations in meeting old growth forest targets.

In this report, the colour scale used for reporting the current condition of old growth forest and mature-plus-old forest does not distinguish between legal and policy targets, as described in the [Cumulative Effects Framework Interim Policy for the Natural Resource Sector](#) (2016) and the [Old Growth Forests in British Columbia: Cumulative Effects Assessment Backgrounder](#) (2024). This has occurred for several reasons and the decision was based on local discussions. Please see section 4 of this report for further details on the assessment methodology.

Most of the data used in this assessment is publicly accessible information from the B.C. Geographic Warehouse (BCGW) and was extracted in February 2019. One dataset used in this analysis is the provincial Vegetation Resource Inventory (VRI), which is a spatial dataset used to describe where a vegetation resource (i.e., timber volume, tree species) is located and how much of a given resource is within an inventory unit. There are limitations within the vegetation inventory design due to data collection and interpretation methodologies. As such, this dataset is best used for analysis at a strategic and coarse-scale and may present limitations when applied at the operational and site-specific scale. It is recognized that the vintage of this dataset in this assessment may be considered dated (i.e., extracted in 2019); however, it is the starting point for assessing past and present impacts associated with cumulative effects, providing a mechanism for trend analysis going forward.

### ***Acknowledgements***

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# EXECUTIVE SUMMARY

The [Cumulative Effects Framework](#) (CEF) measures the impacts of natural resource activities on values that are important to the people of British Columbia (B.C.). Current condition assessments form the basis for the CEF and reports on the current condition of individual CEF values using indicators to demonstrate the cumulative effects (CE) of multiple natural resource activities on each value. Old growth forest is a provincial CEF value that is important for the conservation and maintenance of biodiversity at all scales.

The current condition assessment describes and reports on the current condition of old growth forest and mature-plus-old forest relative to policy targets. It does not consider whether these objectives are effective at conserving sufficient old growth forest to maintain biodiversity, determine the primary causal factors for the current condition (e.g., forest harvesting, natural disturbance), state if assessment units are in compliance with legal objectives and policy targets, or provide management direction to the province, licensees, or others.

Assessment indicators are used to measure and report on the current condition of old growth forest, mature-plus-old forest, and incursions into old growth management areas (OGMAs). The amount of old growth forest within OGMAs is assessed but is not a formal indicator under the [Interim Assessment Protocol for Old Growth Forest in British Columbia](#) (2017). Old growth and mature forests are defined by age, which is determined by the natural disturbance type (NDT) and biogeoclimatic ecosystem classification (BEC). The CE assessment was completed within the Cumulative Effects Crown Forested Land Base (CE-CFLB) using assessment units (AUs) based on the unique combinations of landscape unit (LU), biodiversity emphasis option (BEO), NDT, and BEC subzone or variant.

## Assessment Overview

This CE assessment was completed for the Kamloops Land and Resource Management Plan (KLRMP) area where old growth forest is generally greater than 140 or 250 years old and mature forest is greater than 80 or 120 years old, depending on the NDT and BEC. Old growth forests are managed through the legal objectives established in the [Order Establishing Old Growth Management Objectives for the Kamloops Land and Resource Management Plan Area](#) (2013) which established spatial legal old growth management areas (OGMAs) and provides criteria for incursions into legal OGMAs. Legal OGMAs are the result of a negotiated process from the KLRMP table where the guidance from the Biodiversity Guidebook (BDG, 1995) would not exceed a 4% impact to timber supply. The KLRMP old growth targets are not established under the Provincial Non-Spatial Old Growth Order (PNOGO, 2004); therefore, this assessment compares the current condition of old growth forest relative to the policy targets established in the BDG. There are no requirements for the management of mature forest, however, this CE assessment provides current condition reporting on the mature forest that is guided through non-legal policy targets in the BDG.

There is a total of 1,966,473.5 hectares (ha) of CE-CFLB in the KLRMP area, of which 242,932.6 ha have no old growth forest targets because it is within NDT5 (alpine or sparsely forested parkland) or a bunchgrass ecosystem. There are 33 established LUs. Even though Wells Gray Provincial Park is mapped as a LU in this assessment, it was not formally designated as an LU through the 2013 old growth order and thus has no targets. The majority of the CE-CFLB is managed as Low and Intermediate BEO (42.1% and 37.0%, respectively). There are 237 AUs with a total of 1,723,540.9 ha of CE-CFLB with old growth forest policy targets applied in this assessment.

## Assessment Results

The KLRMP area has experienced many changes in recent years, in particular due to natural disturbances such as wildfires and mountain pine beetle. Recent wildfires, including the 2021 Sparks Lake and Tremont Creek fires, have resulted in large scale shifts in seral stage distribution and ecosystem composition across much of the land base. However, age adjustments to seral stage associated with these wildfires were not done in this analysis due to limitations in the Vegetation Resources Inventory (VRI) dataset.

Old growth forest covers 11.8% of the CE-CFLB (8.8% of the CE-CFLB with targets) and are generally located in higher elevations and the northern half of the KLRMP area. Of the 237 AUs, 73 AUs (31%) have sufficient amounts of old growth forest compared to the policy targets (502,550.2 ha of CE-CFLB). There are six BEC subzone/variants where all AUs have sufficient old growth forest compared to the targets, covering 85,185.1 ha of CE-CFLB; these are mostly in the northern valley ICH ecosystems, mid-elevation MS stands, and across the SBPS BEC zone. Bonaparte LU is the only LU where all AUs are meeting the old growth forest targets (6 AUs total). Of the 164 AUs not meeting targets (total 1,220,990.7 ha of CE-CFLB), 46 AUs have no old growth forest (128,415.3 ha of CE-CFLB). In general, the dry low elevation ecosystems (IDF and PP) are furthest from the targets.

Mature-plus-old forest covers 48.1% of the CE-CFLB (45.6% of the CE-CFLB with targets) located across the KLRMP area. Of the 237 AUs, 201 AUs (85%) have sufficient amounts of mature-plus-old forest compared to the policy targets (1,532,345.1 ha of CE-CFLB). There are 36 AUs (191,195.9 ha of CE-CFLB) not meeting the targets; approximately half of these are close to meeting targets (75–100% of the target met) and represent most of the CE-CFLB of AUs not meeting targets (144,639.3 ha of CE-CFLB).

There are 3,053 mapped legal OGMA across all LUs with a total OGMA area of 201,199.3 ha and a CE-CFLB of 199,539.3 ha. There are 1,572 OGMA (51% of all OGMA) that show some level of disturbance, of which 379 OGMA (12%) have been disturbed beyond the allowable incursion limit, with 1,946.3 ha of total incurred area. Barriere LU has the greatest number of incurred OGMA (33 OGMA with 144.6 ha of total incurred area), and Louis Creek LU has the largest amount of total incurred area (211.2 ha). Most incursions beyond the allowable limits were due to road development (75%) and forest harvesting (e.g., cutblocks) (9.5%), and disturbed less than 5% of the total OGMA area. Some of these incursions are historical and were known and considered acceptable at the time of OGMA delineation.

The majority of the total area in OGMA is mature seral stage (57.3%) followed by mid (19.2%), old (18.9%), and early (3.7%). There are four AUs that meet old growth forest policy targets within legal OGMA, and 233 AUs that do not meet the targets within OGMA, of which 71 AUs have no old growth forest within legal OGMA boundaries. Most of the AUs not meeting targets within OGMA are in the IDF BEC zone as well as the ESSF, PP, ICH, and MS. In general, there are more old growth forests available across the land base (average 68% of the target met) than within the current legal OGMA boundaries (average 15% of the target met within OGMA). This suggests that there are old growth forests available outside of the OGMA boundaries that could contribute to these targets if incorporated into OGMA (noting that current OGMA locations were a negotiated outcome of the KLRMP process).

# LIST OF ACRONYMS

<b>AAC</b>	Allowable Annual Cut
<b>AU</b>	Assessment Unit
<b>B.C.</b>	British Columbia
<b>BCGW</b>	British Columbia Geographical Warehouse
<b>BDG</b>	Biodiversity Guidebook
<b>BEC</b>	Biogeoclimatic Ecosystem Classification
<b>BEO</b>	Biodiversity Emphasis Option
<b>CCR</b>	Current Condition Report
<b>CE</b>	Cumulative Effects
<b>CEF</b>	Cumulative Effects Framework
<b>CFLB</b>	Crown Forested Land Base
<b>CE-CFLB</b>	Cumulative Effects Crown Forested Land Base
<b>FAIB</b>	Forest Analysis and Inventory Branch
<b>FMLB</b>	Forest Management Land Base Indicator
<b>FOR</b>	Ministry of Forests
<b>FPC</b>	<i>Forest Practices Code of British Columbia Act</i>
<b>FRPA</b>	<i>Forest and Range Practices Act</i>
<b>FSP</b>	Forest Stewardship Plan
<b>KLRMP</b>	Kamloops Land and Resource Management Plan
<b>LU</b>	Landscape Unit
<b>LUPG</b>	Landscape Unit Planning Guide
<b>NDT</b>	Natural Disturbance Type
<b>OGAA</b>	<i>Oil and Gas Activities Act</i>
<b>OGMA</b>	Old Growth Management Area
<b>PNOGO</b>	Provincial Non-Spatial Old Growth Order
<b>THLB</b>	Timber Harvesting Land Base
<b>TSA</b>	Timber Supply Area
<b>TSR</b>	Timber Supply Review
<b>VRI</b>	Vegetation Resources Inventory
<b>WLRS</b>	Ministry of Water, Land and Resource Stewardship

# Biogeoclimatic Ecosystem Classification (BEC) System

## BEC Zones

<b>BG</b>	Bunchgrass
<b>ESSF</b>	Engelmann Spruce-Subalpine Fir
<b>ICH</b>	Interior Cedar Hemlock
<b>IDF</b>	Interior Douglas-Fir
<b>IMA</b>	Interior Mountain-heather Alpine
<b>MS</b>	Montane Spruce
<b>PP</b>	Ponderosa Pine
<b>SBPS</b>	Sub-Boreal Pine Spruce
<b>SBS</b>	Sub-Boreal Spruce

## BEC Subzones

<b>dc</b>	Dry cold	<b>vc</b>	Very wet cold
<b>dcp</b>	Dry cold parkland	<b>vcp</b>	Very wet cold parkland
<b>dcw</b>	Dry cold woodland	<b>vk</b>	Very wet cool
<b>dh</b>	Dry hot	<b>wc</b>	Wet cold
<b>dk</b>	Dry cool	<b>wcp</b>	Wet cold parkland
<b>dm</b>	Dry mild	<b>wcw</b>	Wet cold woodland
<b>dw</b>	Dry warm	<b>wk</b>	Wet cool
<b>mk</b>	Moist cool	<b>xc</b>	Very dry cold
<b>mm</b>	Moist mild	<b>xcp</b>	Very dry cold parkland
<b>mmp</b>	Moist mild parkland	<b>xcw</b>	Very dry cold woodland
<b>mmw</b>	Moist mild woodland	<b>xh</b>	Very dry hot
<b>mw</b>	Moist warm	<b>xk</b>	Very dry cool
<b>un</b>	Undifferentiated	<b>xw</b>	Very dry warm

## BEC Variants

<b>1</b>	Cariboo Columbia Horsefly McLennan Nicola Raush Shuswap Thompson	<b>2</b>	Cascade Monashee South Thompson Thompson	<b>3</b>	Cariboo Fraser Horsefly North Thompson Pavillion Thompson
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# GLOSSARY

The following glossary terms are provided for clarity and to aid in understanding the Cumulative Effects Framework. These terms are provided for all CE assessments and are not specific to the land base identified in this report.

<b>Assessment Units (AU)</b>	Assessment units (AUs) are used to describe the current state of old growth forest on the CE-CFLB in Cumulative Effects reporting. Assessment units are based on the combinations of Landscape Unit (LU), Natural Disturbance Type (NDT), Biodiversity Emphasis Option (BEO), and Biogeoclimatic Ecosystem Classification (BEC) subzone and/or variant.
<b>Biodiversity Emphasis Option (BEO)</b>	A range of management alternatives that emphasize different levels of natural biodiversity within forested landscapes. There are three options for emphasizing biodiversity at the landscape level: high, intermediate, and low. Each option is designed to establish a level of natural biodiversity and a different risk of losing elements of natural biodiversity (Province of B.C., 1995). Overall, the BEO informs the amount of old growth to be retained.
<b>Biogeoclimatic Ecosystem Classification (BEC) system (zone/subzone/variant)</b>	<p>A multi-scaled, hierarchical, ecosystem-based classification system that groups ecologically similar sites based on climate, site, soils, and vegetation, and is widely used as a framework for resource management and scientific research in B.C.</p> <p>BEC zones have similar patterns of energy flow, vegetation, and soils as a result of a broadly homogeneous macroclimate. There are 16 zones in B.C. which are subdivided into subzones and variants (see List of Acronyms). Subzones reflect differences in regional climate, while variants recognize sub-regional variation (e.g., areas that are slightly drier, wetter, snowier, warmer, or colder than other areas in the subzone) (MFR, 2008).</p>
<b>Crown Forested Land Base (CFLB)</b>	The forested area that the provincial government manages for a variety of natural resources values. This excludes non-vegetated areas (e.g., water, rock, ice), non-forested ecosystems (e.g., grasslands, wetlands), non-productive forest (e.g., alpine, areas with very low productivity), and non-commercial forest (e.g., shrub/brush areas). The CFLB includes provincially and federally protected areas (e.g., provincial and national parks), conservancies, wildlife habitat areas, wildlife management areas, etc., because of their contribution to biodiversity.
<b>Crown Land</b>	Land, whether it is covered by water or not, or an interest in land, recognized in Canadian law as vested in the provincial government of B.C. In B.C., all land categorized as Crown land is also the traditional territory of one or more First Nations (Land Act, RSBC, 1996).
<b>Cumulative Effects</b>	Changes to environmental, social, and economic values caused by the combined effect of past, present, and potential future human activities and natural processes (Province of B.C., 2016).
<b>Cumulative Effects Crown Forested Land Base (CE-CFLB)</b>	Provincial Crown land with forest cover that is managed for timber supply or other forest management objectives. This layer includes all forested Crown land, including Crown Land in area-based tenures (e.g., tree farm licenses, woodlots, community forests, First Nations woodland licenses), and all forested portions of provincial parks, protected areas, ecological reserves, and federal parks that contribute to the current state of old growth forest.

<b>Cumulative Effects Framework (CEF)</b>	A set of policies, procedures, and decision-support tools that help identify and manage cumulative effects consistently and transparently across B.C.'s natural resource sector.
<b>Current Condition Assessment/Report (CCR)</b>	An assessment/report on the current state or condition of individual CEF values in relation to selected state or pressure indicators (Province of B.C., 2016).
<b>Forest Edge</b>	The boundary between a primary forest and newly harvested areas, roads, or other permanently cleared areas where an edge environment is created. This affects the microclimatic conditions (i.e., temperature, wind, moisture) and other attributes (e.g., species composition; processes such as growth rates) and can impact forests up to 100 to 200 meters within the forested area (depending on topography and vegetation). Some plant and animal species can benefit from the microclimate edge effects, while plant and animal species dependent on the stable environmental condition of the interior forest may be impacted (Province of B.C., 1995, Ministry of Forests Research Branch, 1998b).
<b>Forest Management Land Base (FMLB) Indicator</b>	An attribute field in the Vegetation Resources Inventory (VRI) that indicates whether an inventory polygon is currently forested (or has been forested) and is capable of producing a stand of trees. The FMLB is a coarse-scale indicator of forested areas, whereas the CFLB is a finer-scale management tool (see CFLB definition above).
<b>Forest Stewardship Plan (FSP)</b>	A plan which guides forest operations for a timber tenure required under the Forest and Range Practices Act which is prepared by a forest licensee and approved by government.
<b>Fragmentation</b>	The process of transforming large contiguous patches of forest into smaller and isolated patches surrounded by disturbed areas, either through human activities (e.g., roads, forestry cutblocks) or natural disturbances. Fragmentation may lead to a decline in biodiversity through loss of habitat (conversion of forests from natural to managed stands), increase in microclimatic and forest edge effects, and increase in isolation of the remaining forest patches (Province of B.C., 1995).
<b>Incursion</b>	Anthropogenic (human-caused) disturbance footprints within old growth management areas from resource development activities such as forest harvesting, road construction, or mining. It does not include impacts from natural disturbance, such as forest fires or insects.
<b>Interior Forest Condition</b>	The forest habitat beyond the influence of microclimatic other and forest edge effects that sustains the plant and animal communities that depend on stable environmental conditions. It is generally considered to be 100 to 200 meters from the forest edge and can occur in any forest type and forest age (Ministry of Forests Research Branch, 1998b).
<b>Landscape Unit (LU)</b>	An area used for long-term planning and monitoring of resource management activities. These units contain land and water and are typically at the scale of a watershed or a group of watersheds, with areas ranging from 5,000 to 400,000 hectares (MFR, 2008).
<b>Landscape Unit Planning Guide (LUPG)</b>	A guidance document published by the Ministry of Forests and Ministry of Environment, Lands and Parks (1999) that outlines procedures to implement landscape unit planning throughout B.C. (including the development of objectives and strategies). The guide focuses on the priority of forest biodiversity including the retention of old growth forest and guidance for stand-level biodiversity management through wildlife tree retention (Province of B.C., 1999).

### **Mature Forest**

Stands that have progressed through successional development stages including natural thinning. Vertical structure has developed but stands lack the complex structure typical of old growth forests.

The time required for mature forest to develop varies by ecosystem. In B.C., the minimum age of mature forest is 80 years in productive coastal and cool, northern boreal forests, 120 years in high elevation forests, and 100 years in the remaining forests. Mature forest ages are determined by NDT and BEC zone.

### **Mature-plus-Old Forest**

Biodiversity objectives for mature forest retention are set as a minimum requirement for mature-plus-old forest, meaning that retention targets include the minimum requirements for old growth forest plus additional targets that can be met by mature and/or old forest (BDG, 1995). The additional targets for mature-plus-old forest can be met using mature and/or old forest, but the old forest portion of the target must be met using old growth forest (where available). When the mature-plus-old forest target is the same as the old growth forest target, there are no additional requirements for mature forest area. Mature-plus-old targets are specified in the Biodiversity Guidebook but are not required in many regional land use orders, including the Provincial Non-spatial Old Growth Order.

### **Old Growth Forest**

The Province of B.C. defines old growth forest based on age. Minimum ages for old growth forest are greater than 250 years old in ecosystems with infrequent stand-initiating disturbance (coastal, interior wet and moist climates, and dry, fire-maintained ecosystems; NDT 1, 2, 4) and greater than 140 years old in drier ecosystems with frequent stand-initiating disturbance (NDT 3).

These age definitions are intended to capture forests dominated by old trees. Ecologically, old growth forests contain live and dead trees that vary by size, species, composition, and age class structure, which varies significantly by forest type and by BEC unit (BDG, 1995). They are communities of trees, plants, fungi, animals, and microbes that have lived together long enough to develop complex, interconnected relationships (Old Growth Technical Advisory Panel, 2021). Old growth characteristics vary by ecosystem and tree species, and typically have more large trees with unique characteristics such as forked, dead, or broken tops, cavities, or large lateral branches, and more large standing dead trees (snags) and decomposing wood than younger forests (FLNRORD, 2017). Trees are large for the ecosystem, and the forest canopy is often layered with openings that allow light and encourage the growth of understory vegetation.

For the purposes of the CEF, the term “old growth forest” is used to describe these ecosystems more broadly (i.e., considering stand attributes), with the awareness that it includes the “old forest” age-based definition currently used in forest management practices.

<b>Old Growth Management Area (OGMA)</b>	Defined areas that contain (or are managed to attain) specific structural old growth forest attributes. These are delineated and mapped as fixed areas (FPB, 2012). An OGMA may be defined as a legal OGMA or a draft (non-legal) OGMA:  <b>Legal OGMA</b> – OGMA that have been declared in an old growth Ministerial Order. Forest licensees must incorporate the legal OGMA into Forest Stewardship Plans (FSPs).  <b>Draft (non-legal) OGMA</b> – OGMA that have been mapped but not declared in an old growth order. Forest licensees may choose to incorporate the non-legal OGMA into FSPs as a way of achieving the non-spatial order that is in effect in the management area where they operate (FPB, 2012).
<b>Natural Disturbance Type (NDT)</b>	A coarse-level classification system that broadly describes disturbance regimes across B.C. based on the long-term average frequency of stand-initiating disturbances such as wildfires, insects, or wind. Five NDT categories form the basis for the old growth forest targets in the Biodiversity Guidebook (Province of B.C., 1995).
<b>Non-Contributing Land Base</b>	Areas on the land base that are excluded from the Timber Harvesting Land Base (THLB) and do not contribute to the allowable annual cut for a specified area. This includes Parks and Protected Areas, no harvest zones within wildlife management areas (e.g., ungulate winter ranges, wildlife habitat areas), riparian reserves, and inoperable forests.
<b>Non-Spatial Old Growth Management</b>	The percentage or amount (in hectares) of old growth forest to be retained within a specified area (i.e., by BEC subzone/variant in a landscape unit) as an alternative management approach from establishing spatial OGMA. The amount of old growth forest present in forest stands may be noted by stand age using vegetation inventories, but patches of old growth are not delineated and mapped (FPB, 2012). Non-spatial is also referred to as aspatial.
<b>Primary Forest</b>	A naturally regenerating forest of native species, where there are no visible indications of human activities, and the ecological processes of the forest are not significantly disturbed (FAO & UNEP, 2020). This can include forests across all seral stages, from young to old, and any stands remaining after a natural disturbance such as fire, wind, or extensive insect-caused mortality. Not all primary forests are old, but all old growth is primary forest (Old Growth Technical Advisory Panel, 2021).
<b>Recruitment</b>	The act of identifying stands (either spatially or non-spatially) that do not currently meet the requisite old growth characteristics but are intended to develop those characteristics in the future. In some circumstances, recruitment areas can contribute to old growth targets in landscapes where there is not enough old growth forest to meet targets.
<b>Seral Stage</b>	Represents the different stages in the sequence of forest development, from early to mid, mature, and old forests, including successional shifts in species composition and vegetation structure (e.g., see definitions for mature forest and old growth forest above). Stand age, as reported in the provincial Vegetation Resources Inventory, is used to estimate seral stage.
<b>Spatial Old Growth Management</b>	The process of identifying and delineating areas containing old growth forest attributes. Spatially identifying (i.e., mapping) these areas can lead to their designation as legal or non-legal OGMA (FPB, 2012).



**Stand-Initiating Disturbance**

Disturbances that significantly alter the ecosystem and largely terminate the existing forest stand and initiate secondary succession to produce a new stand. This may occur through wildfires, windstorms, insects, and landslides (Province of B.C., 1995).

**Stand-Maintaining Disturbance**

Fairly frequent disturbances that maintain an ecosystem and keep successional processes stable. This typically occurs through understory surface fires that remove some but not all trees and maintain open forests of old trees (Province of B.C., 1995).

**Timber Harvesting Land Base (THLB)**

A spatial (mapped) estimate of the forested land area where timber harvesting is considered both acceptable and economically feasible given the objectives for all relevant forest values, existing timber quality, market values, and applicable technology. The THLB is derived from an assessment of forest management practices and assumptions described in a Timber Supply Review (TSR).

**Timber Supply Review (TSR)**

A process that evaluates all forests within a timber supply area for their contribution to the THLB. At the end of the TSR process, the Chief Forester determines an allowable annual cut (AAC) (i.e., the harvest volume appropriate for an area) based on the amount of timber that is forecast to be available for harvesting over a specified time and under a particular management regime.

**Values**

The things that the people and government of British Columbia care about and see as important for assuring the integrity and well-being of the province's people and communities, economies, and ecological systems, defined in policy, legislation, or agreements with First Nations (Province of B.C., 2016).

# 1 INTRODUCTION

The Province of British Columbia (the Province) developed the [Cumulative Effects Framework \(CEF\)](#) to measure the impacts of natural resource activities on values that are important to the people of British Columbia (B.C.). The CEF aims to incorporate the combined effects of all activities and natural processes into decision making to help avoid unintended consequences to identified economic, social, and environmental values.<sup>1</sup> Current condition assessments form the basis for the CEF and reports on the current condition of individual [CEF values](#) using indicators to demonstrate the cumulative effects (CE) of multiple natural resource activities on each value.

Old growth forest is a provincial CEF value that is important for the conservation and maintenance of biodiversity at all scales. This report describes the current condition of old growth forest as part of the provincial CEF and follows the [Interim Assessment Protocol for Old Growth Forest in British Columbia \(2017\)](#). Supplementary documents have also been developed to provide additional context: [Old Growth Forest Management in British Columbia: Provincial Backgrounder \(2024\)](#), and [Old Growth Forests in British Columbia: Provincial Cumulative Effects Assessment Backgrounder \(2024\)](#).

This CE assessment compares the amount of old growth forest currently on the landscape to old growth forest targets. The current condition is assessed relative to management objectives in legal orders for old growth forest and relative to policy direction for mature-plus-old forest. The management of old growth forest varies across the province. In general, the [Provincial Non-Spatial Old Growth Order \(PNOGO, 2004\)](#) is used as the default for old growth forest legal targets unless a local order or higher-level plan rescinds it, while policy targets from the [Biodiversity Guidebook \(BDG, 1995\)](#) are applied to assess the amount of mature-plus-old forest on the landscape<sup>2</sup>. The specifics of old growth management applicable to this report are described in section 3.



*Lac le Jeune, Bush Lake*

*—Susan Omelchuk*

<sup>1</sup> Under the Cumulative Effects Framework, cumulative effects are defined as changes to environmental, social, and economic values caused by the combined effect of past, present, and potential future human activities and natural processes.

<sup>2</sup> The targets from the PNOGO and the BDG are relatively the same, however there may be some regional variability considered in PNOGO that resulted in modified targets from the BDG (e.g., limiting impact to timber supply).

Assessment indicators were developed to understand the current condition of the old growth forest value:

- the current amount of old growth forest relative to legal or policy targets;
- the current amount of mature-plus-old forest relative to policy targets;
- incursions<sup>3</sup> into Old Growth Management Areas (OGMAs) relative to accepted levels of incursion defined by the applicable order or policy; and
- the current amount of old growth forest in OGMAs as compared to legal or policy targets.

This assessment was completed within the Cumulative Effects Crown Forested Land Base (CE-CFLB). Assessment units (AUs) are based on the unique combinations of landscape unit<sup>4</sup> (LU), natural disturbance type (NDT), biodiversity emphasis option (BEO), and biogeoclimatic ecosystem classification (BEC) subzone or variant.

This report interprets the current condition of old growth forest and mature-plus-old forest compared to non-legal policy targets at a broad level. **It does not consider whether these targets are effective at conserving sufficient old growth forest to maintain biodiversity. If current condition reports indicate that the old growth targets are not being met for a specific area, additional analysis and evaluation should occur<sup>5</sup>.**

The intended audience for these reports includes government natural resource staff and statutory decision makers who can use it to inform decision-making and collaboration with First Nations in co-management. Other users of this information include natural resource industries and community stakeholders to ensure that cumulative effects are identified, considered, and managed appropriately.

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<sup>3</sup> "Incursions" are defined as alterations to OGMAs caused by permitted activities, such as forestry cutblocks and roads, a range of non-forestry-related industrial activities, and human use features such as recreation sites and trails. To the extent possible, only active, initiated, tenured, and completed developments will be included in the layer and not activities that are conceptual, investigative, or authorized (i.e., project not yet started even though may have permits and/or certificates).

<sup>4</sup> Landscape units (LUs) are planning areas whose boundaries are based on topographic or other landscape geography features.

<sup>5</sup> The CE old growth current condition assessment reports on the total amount of Cumulative Effects Crown Forested Land Base without differentiating between the non-contributing land base and timber harvesting land base. It does not provide how much old growth forest is within other no-harvest land use designations.

# 2 KAMLOOPS OVERVIEW

## 2.1 Land Base Description

This CE assessment was completed for the Kamloops Land and Resource Management Plan (KLRMP) area which is in the southern interior of the province within the Thompson Okanagan Region (the Region) (Figure 1). The KLRMP was designated as a Higher Level Plan (HLP) on January 23, 1996, and provides the legal land use direction on the Kamloops Timber Supply Area (TSA).

The KLRMP area covers approximately 2.77 million hectares (ha) or 37% of the Region, from Logan Lake in the south to Wells Gray Provincial Park in the north and is bound by the Columbia Mountains to the east and the Cariboo Plateau to the west. The KLRMP area is bisected by the North Thompson River which joins the South Thompson River at Kamloops before flowing into and out of Kamloops Lake and becoming the Thompson River. Within the KLRMP area there are 63 Provincial Parks, Protected Areas, Ecological Reserves or Conservancy Areas that cover 625,270 ha, the majority of which are protected in Wells Gray Provincial Park (536,742 ha). There are 34 First Nations communities whose traditional territories include areas within the KLRMP area.

The terrain of the KLRMP area varies from hot and dry grasslands in the south to wet and rugged mountains in the north. There are over 23 tree species listed in the provincial Vegetation Resources Inventory (VRI), with large areas dominated by Douglas-fir, subalpine fir, spruce, and lodgepole pine, and smaller components of hemlock, western red cedar, and various deciduous species. This diversity results in habitats that support a variety of wildlife, including mountain caribou, grizzly bear, American badger, burrowing owl, bull trout, and western rattlesnake.

For the purposes of this CE current condition report on old growth forest, the land base for all data and analyses presented is based on the Cumulative Effects Crown Forested Land Base (CE-CFLB) (Figure 1). The KLRMP area contains 1,966,473.5 ha of CE-CFLB, which is approximately 71% of the gross KLRMP area (Table 1).



*Lac le Jeune*

*—Susan Omelchuk*

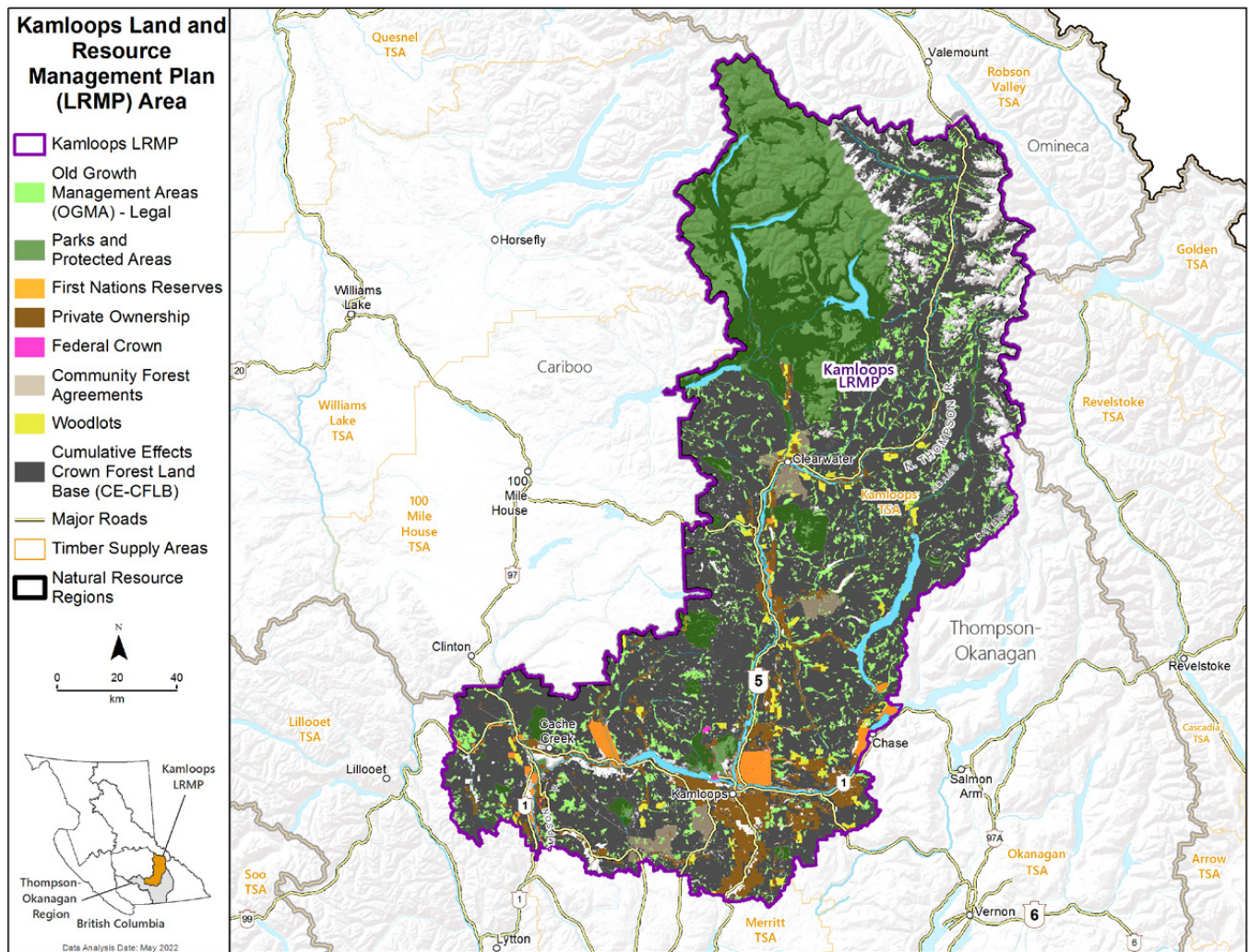


Figure 1. Ownership and Land Use Classifications in the Kamloops Land and Resource Management Plan (KLRMP) Area.

## Cumulative Effects Crown Forested Land Base (CE-CFLB) Description

The basic definition of the Crown Forested Land Base (CFLB) is the area of Crown land managed for natural resource values that excludes land ownership (e.g., private land). However, the definition of CFLB can differ across the province and from one provincial initiative to another. For example, the CFLB used in Timber Supply Reviews (TSRs) is different than the definition used for Cumulative Effects (CE) assessments.

The old growth forest CE assessments use the Cumulative Effects Crown Forested Land Base (CE-CFLB) as the denominator to calculate whether old growth forest targets are being achieved. The Forest Management Land Base Indicator (FMLB) is the foundation to developing the CE-CFLB and is an attribute of the Vegetation Resource Inventory (VRI) that identifies whether a polygon is forested or capable of producing a stand of trees. Area-based tenures (e.g., Tree Farm Licenses, Community Forests) that are more than 600 ha are included in the CE-CFLB, except for Woodlots regardless of area (i.e., all Woodlots are excluded from this assessment).

All CE assessment results for this report are generated using the CE-CFLB except for the OGMA incursion indicator which uses total OGMA area. For more detailed information on how the CE-CFLB was developed and how it differs from CFLBs calculated for other initiatives, refer to [Old Growth Forests in British Columbia: Provincial Cumulative Effects Assessment Backgrounder \(2024\)](#).

The KLRMP area defines the outer limits of this CE assessment, and all Crown land within that area is included. This includes the area identified as part of the Kamloops Timber Supply Area (TSA) and the area-based tenures established within. The CE-CFLB for the KLRMP area is 1,966,473 ha, which is approximately 71% of the gross KLRMP area (Table 1). For comparison and to demonstrate the difference in CFLB definitions across provincial initiatives, the CFLB used in the [2016 Kamloops Timber Supply Review](#) was 1,686,363 ha (September 2015, page 7).

**Table 1. Summary of Area Designations.**

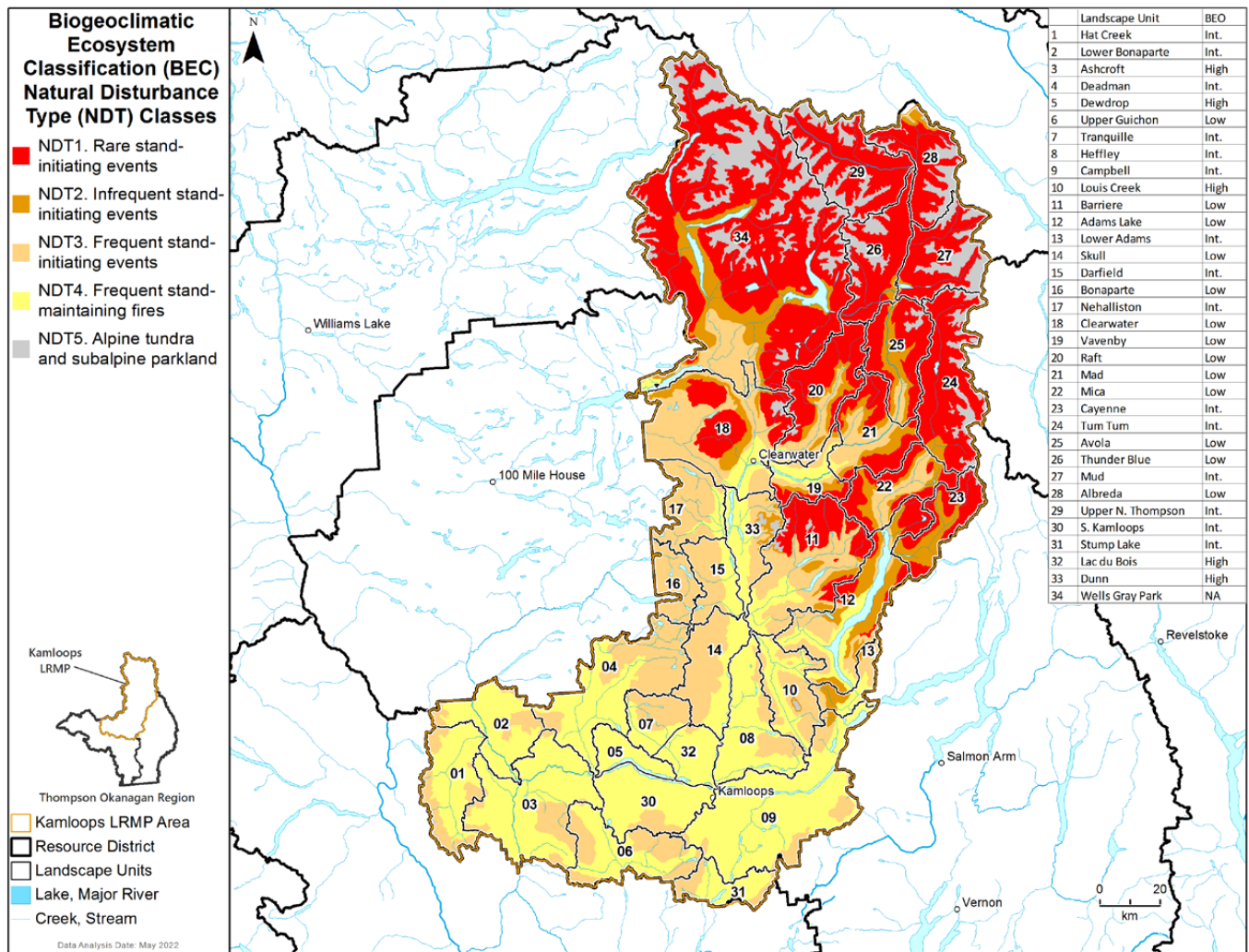
Land Base	Gross Area (ha) <sup>a</sup>	FMLB Area (ha)	Private Land (ha)	Area-Based Tenures (ha)	Provincial Parks & Protected Areas (ha)	CE-CFLB Area (ha)
KLRMP	2,769,416.0	2,138,904.1	177,969.9	200,866.5	626,468.0	1,966,473.5

<sup>a</sup> There may be overlap between area designations. Therefore, each area value is presented independently of the others in such a way that they do not sum together to equal the gross area of the land base. The information presented is based on the Cumulative Effects Crown Forested Land Base (CE-CFLB) and CE old growth assessment resultant dataset with source data derived from the BCGW VRI (data extracted in 2019).

### 2.1.1 Natural Disturbance Types

For the purposes of setting old growth forest objectives (i.e., targets), the BDG recognizes five Natural Disturbance Types (NDT) in B.C. The NDTs characterize areas with different natural disturbance regimes and describe the frequency of stand-initiating events that largely terminate the existing forest structure and initiate secondary succession to start a new stand.

Of the five NDTs classified for the province, all occur in the KLRMP area (Figure 2, Table 2). The most common natural disturbance types are NDT1 (rare stand-initiating events) and NDT4 (frequent stand-maintaining events), followed by NDT3 (frequent stand-initiating events). The NDT5 ecosystems include alpine BEC zones and sparsely forested parkland BEC variants. Disturbance return intervals and age-based definitions are not defined for NDT5 ecosystems in the BDG.



**Figure 2.** Distribution of Natural Disturbance Types (NDT) by Landscape Unit (LU) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

The total area of the CE-CFLB (1,966,473.5 ha) is classified by NDT in the KLRMP area (Table 2). However, only NDT 1, 2, 3, and 4 contain old growth forest as defined by the BDG. The area associated with NDT 5 is reported to show the distribution across the land base, however no age or old growth forest targets are assigned to these ecosystems. The total amount of old growth forest in the CE-CFLB within the KLRMP area is 232,080.7 ha.

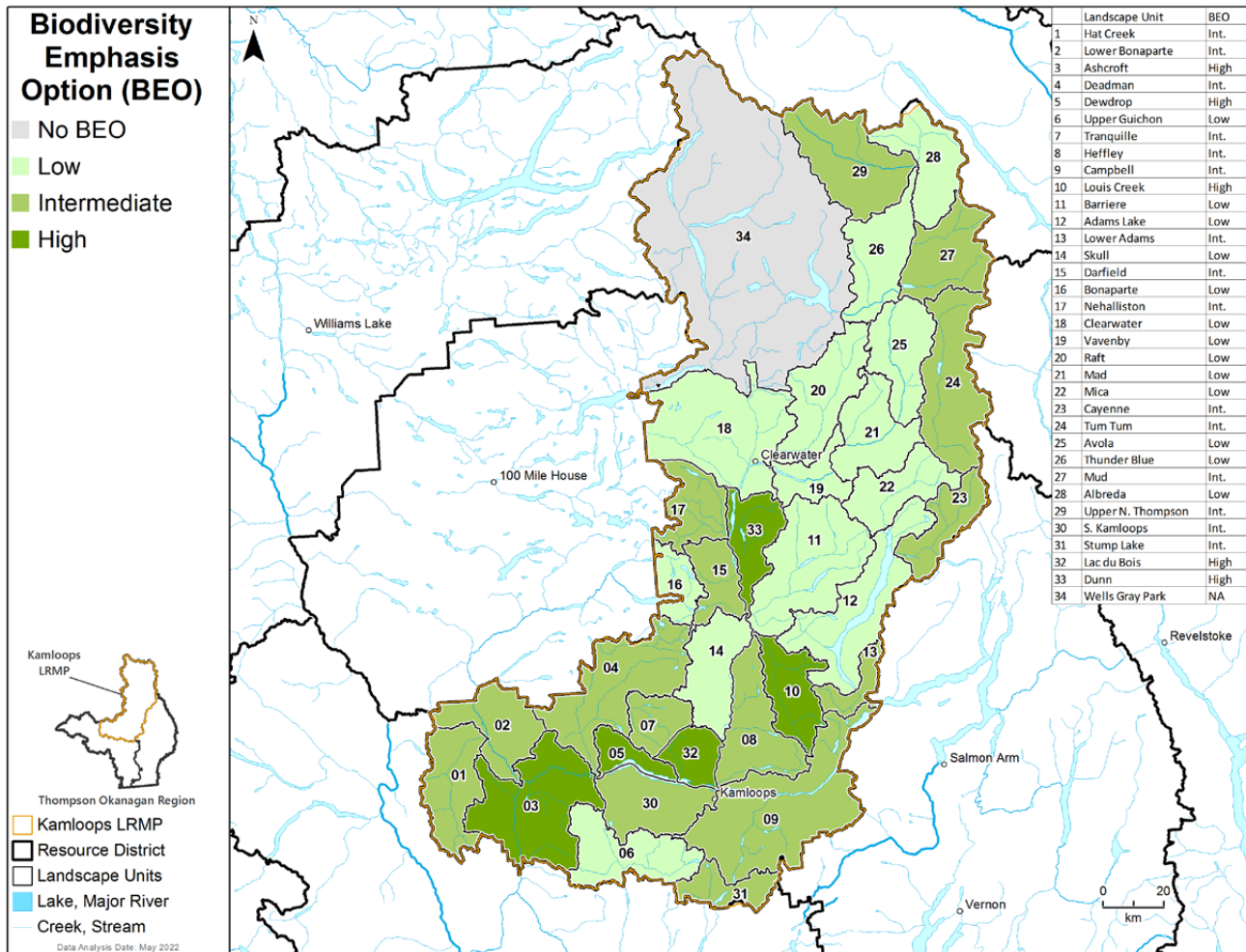
**Table 2.** Distribution of Natural Disturbance Types (NDT) in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

NDT	NDT Ecosystem Description	Total Gross Area (ha)	Total CE-CFLB Area (ha)	Total Amount of Old Growth Forest in CE-CFLB (ha)
NDT1	Rare stand-initiating events	846,064.6	633,398.4	99,310.2
NDT2	Infrequent stand-initiating events	219,338.7	193,071.5	16,820.7
NDT3	Frequent stand-initiating events	657,585.2	613,119.5	113,043.8
NDT4	Frequent stand-maintaining events	800,174.3	501,674.5	2,905.9
NDT5	Alpine and subalpine parkland	246,253.1	25,209.6	0.0
<b>Total</b>		<b>2,769,416.0</b>	<b>1,966,473.5</b>	<b>232,080.7</b>

### 2.1.2 Biodiversity Emphasis Options

While NDT and BEC provide the ecological basis for natural seral stage amounts and ages expected under the natural disturbance regime, LU and BEO provide an important administrative basis for setting seral stage targets. Biodiversity emphasis was introduced in the BDG to balance socio-economic interests (primarily timber supply) with the risk of losing elements of natural biodiversity. A High BEO emphasizes a higher priority to biodiversity conservation, an Intermediate BEO reflects a trade-off between biodiversity conservation and timber production and a moderate risk to natural biodiversity, while a Low BEO emphasizes commodity production with less emphasis on biodiversity conservation and thus higher risk to natural biodiversity. The BEO designation determines the minimum required amount of early, mature, and old seral stage forest to maintain biodiversity values in each LU.

Landscape units (LUs) are planning areas whose boundaries are based on topographic or other landscape geography features. There are 33 LUs in the KLRMP area that were established in the *Old Growth Management Objectives for the Kamloops Land and Resource Management Plan Area (2013)* order, the majority of which are assigned as Intermediate and Low BEO through the KLRMP process. Wells Gray Provincial Park is included in the KLRMP area but is not a legally established LU. The Wells Gray Provincial Park has no BEO assigned through the KLRMP process and therefore no old growth targets were established in this area. Some small portions of the park boundary overlap into adjacent LUs where BEO has been assigned and therefore targets are applied in these areas. Wells Gray Provincial Park is included in this report and given the LU number 34 to aid in visualization and as reference for the current condition assessment results (Table 3, Figure 3).



**Figure 3.** Biodiversity Emphasis Option (BEO) by Landscape Unit (LU) in the Kamloops Land and Resource Management Plan (KLRMP) Area.



**Table 3.** Designated Landscape Units (LUs) and Biodiversity Emphasis Option (BEO) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Landscape Unit		BEO	Landscape Unit		BEO
1	Hat Creek	Intermediate	18	Clearwater	Low
2	Lower Bonaparte	Intermediate	19	Vavenby	Low
3	Ashcroft	High	20	Raft	Low
4	Deadman	Intermediate	21	Mad	Low
5	Dewdrop	High	22	Mica	Low
6	Upper Guichon	Low	23	Cayenne	Intermediate
7	Tranquille	Intermediate	24	Tum Tum	Intermediate
8	Heffley	Intermediate	25	Avola	Low
9	Campbell	Intermediate	26	Thunder Blue	Low
10	Louis Creek	High	27	Mud	Intermediate
11	Barriere	Low	28	Albreda	Low
12	Adams Lake	Low	29	Upper North Thompson	Intermediate
13	Lower Adams	Intermediate	30	South Kamloops	Intermediate
14	Skull	Low	31	Stump Lake	Intermediate
15	Darfield	Intermediate	32	Lac du Bois	High
16	Bonaparte	Low	33	Dunn	High
17	Nehalliston	Intermediate			

### 2.1.3 Biogeoclimatic Ecosystem Classifications

For setting biodiversity and old growth forest objectives, the BEC system is used to spatially define NDTs, recognizing the natural disturbance regime is influenced by differences in climate, topography, and vegetation cover within an NDT. The BEC system consists of the zone (broadest level of classification), followed by up to three levels of refinement: the subzone, variant, and phase. Detailed information on each BEC unit is available on the BEC Web<sup>6</sup>. Please note that BEC data changes over time as new information becomes available and ecosystem classifications are better understood. At the time of this assessment the latest BEC was version 11.

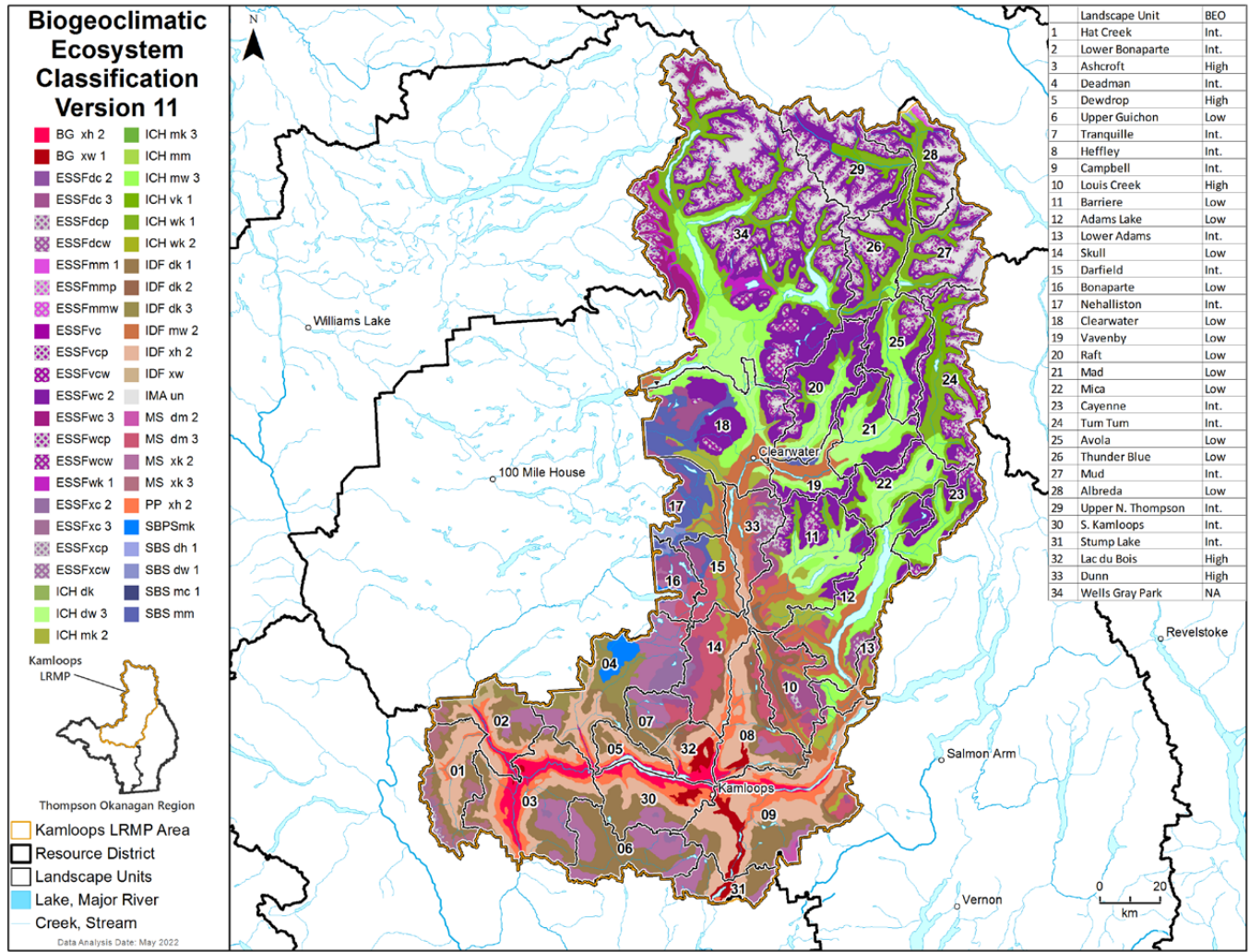
The BEC subzone variant is the smallest ecological unit that old growth forest objectives are established. Not all BEC units represent forested ecosystems and therefore certain non-forested BEC units may not be included in the assessment of current condition for old growth forest.

The topographically and ecologically diverse landscape of the KLRMP area supports a range of BEC zones. The KLRMP area includes nine regional BEC zones, which is further refined to 40 unique BEC subzone and variant combinations (Figure 4). Within subzones there can be considerable variations in the regional climate as expressed in variants of drier, wetter, snowier, warmer, or colder.

The southern portion of the KLRMP area is dry and hot with gentle rolling terrain supporting Bunchgrass (BG) grasslands in the valley, upland mixed fir-pine forests (Ponderosa Pine (PP) and Interior Douglas-fir (IDF)), and numerous lakes. The central area is dissected by valleys with rivers and lakes where moist conditions support mixed forests, including Interior Cedar Hemlock (ICH) in low elevations and up the mountainous valleys in the north, to mid-elevation Montane Spruce (MS) and some Sub-Boreal Spruce (SBS). To the north, the area is bound by the rugged peaks of the Monashee and Cariboo Mountain ranges where conditions are very wet with high snowfall which supports dense forests of Engelmann Spruce – Subalpine Fir (ESSF) in the montane zones before transitioning at high elevations to Interior Mountain-heather

<sup>6</sup> BEC WEB ([gov.bc.ca](http://gov.bc.ca))

Alpine (IMA) (Figure 4). Most of the KLRMP area is within the ESSF (879,468.5 ha or 32% of the gross KLRMP area), ICH (689,006.2 ha or 24%) and IDF (636,134.7 ha or 23%) BEC zones.

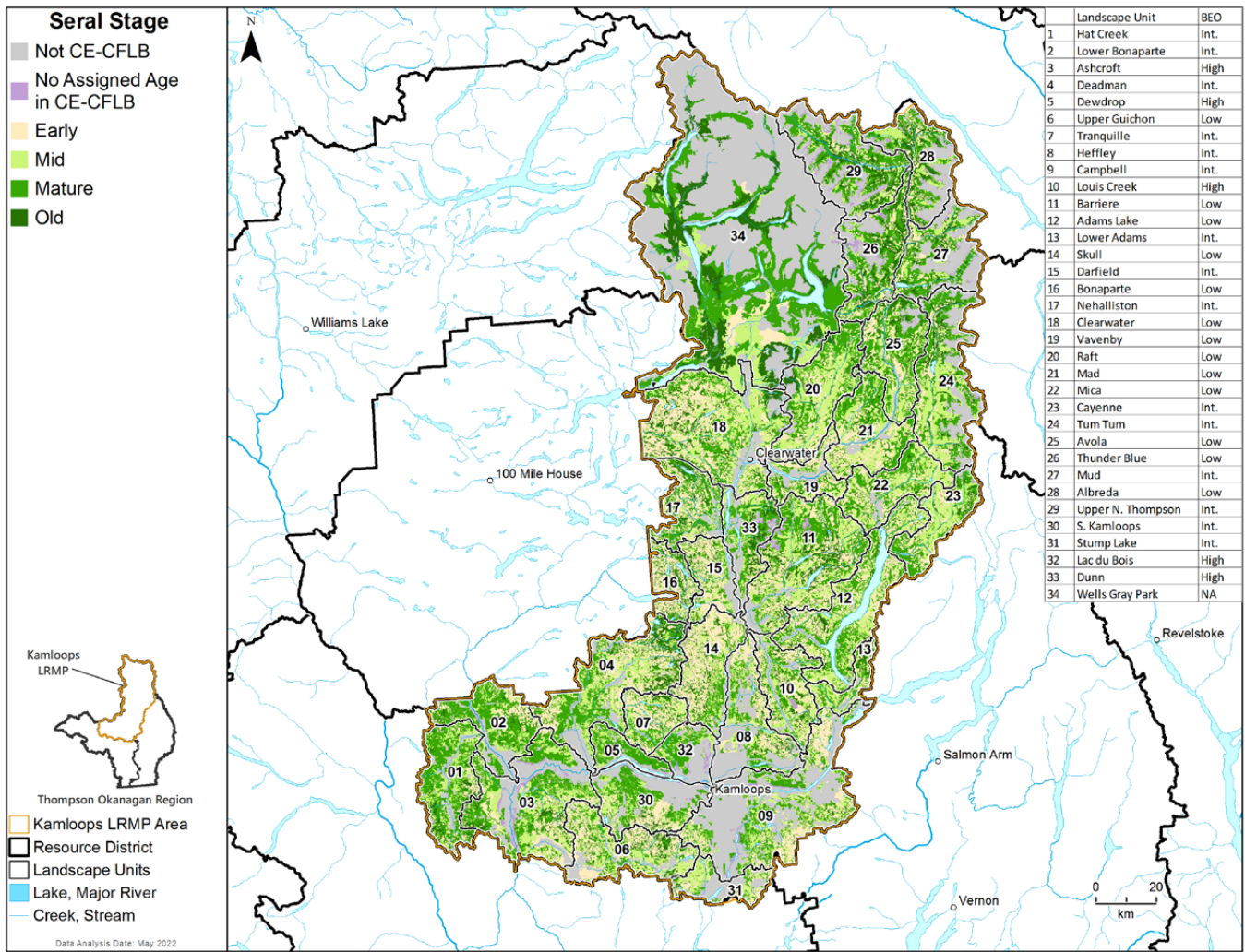


**Figure 4.** Distribution of Biogeoclimatic Ecosystem Classification (BEC) Subzones and Variants in the Kamloops Land and Resource Management Plan (KLRMP) Area.

### 2.1.4 Seral Stage

Seral stages are classified using age-based definitions of the minimum age a forest should be before important structural attributes associated with that seral stage are developed in the forest stand. Seral stages and the associated ranges of tree age are technical definitions required for the assessment of inventory data related to old growth forest biodiversity. In this report, seral stage categories are referred to in short-hand (i.e., old, mature, mid, and early forests). Stand ages were derived from the 2019 VRI in order to assign a seral stage.

The seral stage distribution across the KLRMP area shows general patterns of early and mid-seral stage forests across the low and mid elevations, with pockets of mature and old forest located in higher elevations common in the north and the southwest (Figure 5). The NDT5 is alpine tundra and subalpine parkland which occurs above the tree line; areas categorized as NDT5 do not have a seral stage assigned. These are shown in light purple in Figure 5, which also includes the NDT4 bunchgrass (BG) BEC zone.



**Figure 5.** Current Seral Stage Distribution in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Seral stage ages are assigned for approximately 98.2% of the CE-CFLB (Table 4). The remaining 1.8% was either within the bunchgrass BEC zone or the NDT5 that fall into the CE-CFLB but lack age-based definitions and targets for old growth forest and mature-plus-old forest (Figure 2, section 2.1.1).

**Table 4.** Current Seral Stage in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Seral Stage <sup>a</sup>	Total CE-CFLB Area (ha)	% of Total CE-CFLB Area
Early	522,160.9	26.6%
Mid	463,166.4	23.6%
Mature	714,085.2	36.3%
Old	232,080.7	11.8%
No seral stage assigned	34,980.3	1.8%
<b>Total</b>	<b>1,966,473.5</b>	<b>100.0%</b>

<sup>a</sup> Age definitions that are used to define seral stage were taken from the Provincial VRI (2019). There are different age-based definitions for mature and old forest depending on which NDT and BEC the stand is within.

## 2.2 Cumulative Effects in the KLRMP Area

Old growth forests are impacted by multiple resource development activities and natural disturbance events, which may result in cumulative effects. A description of the different activities and natural disturbance events for the KLRMP are outlined below.

### 2.2.1 Land Use

Land use in the KLRMP area is diverse, from a wide-ranging natural resource sector (e.g., forestry, mining, ranching, agriculture, fish, wildlife) to uses within municipalities like health care and education. There are numerous opportunities for recreation and tourism, particularly adjacent to communities such as Kamloops and Clearwater. These activities may have unintended impacts to old growth forests through ecosystem degradation by over exploiting ecosystem resources and services (and not necessarily direct impacts to timber). Similarly, the extensive network of grazing leases and range tenures may also be impacting the quality of old growth forests; while grazing is unlikely to remove overstory old growth trees, it may impact the complex understory characteristics of old growth forests.

The Region released An Assessment of Old Growth Management Areas Potentially Impacted by Non-Forest Tenure Activities in the Thompson Okanagan Region (Ministry of Forests, Lands, and Natural Resource Operations, 2013) to review human-caused (anthropogenic) disturbances within OGMA's across the Region from 2006 to 2013. This report indicated that the actual area of disturbance in OGMA's from non-forest activities and the overall risk from these tenures was low. At the regional scale, less than 0.2% of the total OGMA area was disturbed by non-forest activities. Most high-risk areas overlapped with *Mines Act* notices of work, utility lines, and roads; the greatest disturbances were from linear corridors. Smaller and narrower OGMA's resulted in more frequent disturbances due to their shape and size and were more likely to require replacement as the incursion threshold was exceeded. It is important to note that some disturbances impact values other than trees, such as riparian areas and soils, while other disturbances have less of a biological impact because they occur in open, dry stands which can mimic the natural openings and disturbances in those ecosystems.

### 2.2.2 Forest Harvesting

The Kamloops Timber Supply Area (TSA) is the designated area within the KLRMP area to be managed for a range of objectives including timber production. The Allowable Annual Cut (AAC), which sets the maximum rate of timber harvest for the TSA, declined from 4.0 million cubic metres in 2008 to 2.3 million cubic metres in 2016, with a further reduction to 2.1 million cubic metres in 2021, of which 200,000 cubic metres is attributable (partitioned) to cedar-leading and hemlock-leading stands older than 140 years<sup>7</sup>.

In the Region's assessment of OGMA's potentially impacted by non-forest tenure activities from 2006 to 2013 (Ministry of Forests, Lands, and Natural Resource Operations, 2013), the amount of disturbance due to forest harvesting activities was considered. The assessment showed an overall net loss in total OGMA area in the District (29 hectares overall) due to forestry licensee replacement practices.

Harvesting forest stands adjacent to old growth forest and OGMA's can have a direct impact to the structure and function of the adjacent old growth forest habitat by increasing the amount of edge forest (Bezzola and Coxson, 2020). Edge effects from forest harvesting can increase the risk of blowdown and invasive species and alter climatic conditions to adjacent ecological communities (i.e., increased light). Forest harvesting patterns can contribute to a fragmented landscape and isolation of OGMA's from other old growth forest patches and reduce connectivity to areas of high biodiversity (e.g., wetland complexes). This can reduce the long-term resiliency of these ecosystems and their ability to adapt to natural disturbances and climate change (Coxson and Werner, 2019).

<sup>7</sup> Kamloops Timber Supply Area Rationale for Allowable Annual Cut (AAC) Determination. Effective May 5, 2016. [BRITISH COLUMBIA \(gov.bc.ca\)](http://www.britishcolumbia.ca)

OGMAs were legally designated in 2013 and were intended to mitigate threats to old growth forest from harvesting. The OGMA delineation process in the KLRMP was required to consider all old growth forest in the non-timber harvesting land base first. This co-location process of using already constrained areas (e.g. parks, protected areas) was intended to manage the impact to timber supply from biodiversity management, including old growth forest. While co-location of old growth forest biodiversity and other non-timber objectives often occurs, the impact of this management decision on old growth forest is yet to be fully understood. In addition, the Independent Old Growth Strategic Panel Report (Gorely, A. & Merkel, G., 2020) commissioned by the Province has recommended a paradigm shift away from the timber-based policies of old growth forest management in B.C. towards prioritizing ecosystem health and resilience.

### 2.2.3 Natural Disturbances

The KLRMP area has experienced many changes in recent years, in particular due to natural disturbances such as wildfires and bark beetle infestations (e.g., mountain pine beetle). There is a long history of wildfire disturbances in the area, and recent wildfires have resulted in large-scale shifts in seral stage distribution and ecosystem composition across much of the Region.

Historical and recent wildfire disturbances have impacted OGMAs across the KLRMP area. The Region completed an Analysis of OGMA Areas within Fire Perimeters (Ministry of Forests, Lands, and Natural Resource Operations, 2014), and identified that between 2013 and 2019 the total OGMA area impacted by wildfires in the Thompson Rivers Forest District, which includes the KLRMP area, was 9,261.4 ha. Wildfire disturbance was noted in 314 OGMAs, impacting 10% of all OGMAs in the District. Burn severity ratings for these OGMAs were medium (3,705.8 ha), low (3,632.8ha), unburned (1,318.7 ha), unknown (347.5 ha), and high (256.7 ha), respectively.

Since 2019, wildfires have affected the KLRMP area resulting in significant losses, most notably during the 2021 wildfire season. The Kamloops Fire Centre (which covers the entire Region) reported 497,497 ha of burned area over 459 wildfires in the 2021 wildfire season, which included the Sparks Lake (95,980 ha estimated total burn area) and Tremont Creek (63,548 ha) wildfires (B.C. Wildfire Service, 2022). These wildfires had significant impacts across the land base, including disturbances within OGMAs.

How wildfires are represented in this CE assessment is challenging due to the complications of how wildfires are represented in the VRI. Seral stage is based on the ages assigned in the VRI; however, shifts in the age classification of a forested polygon due to natural disturbances (i.e., insects and wildfires) may not be reflected in the assigned ages in the VRI post-disturbance. The seral stage for each forest stand is assigned using the forest age taken from the 'projected age' attribute from the VRI, which is an estimate of the average age of the co-dominant trees in a forested polygon. The 'projected age' is used to represent the time since the last stand-initiating natural disturbance event. Forest inventories are updated annually to revise spatial polygons to include new forest harvesting (e.g., cutblocks) where the age of the forest is reset to a younger age class. However, in the case of natural disturbances, the 'projected age' attribute is not modified until the VRI polygon is re-inventoried. This means that natural disturbances such as fire or insect killed stands that results in a change from old to young forest is only captured in these reports where that has been reflected in the VRI (i.e., once an area is re-inventoried or other forest management activity has occurred such as salvage or planting).

At this time, there is no Provincial standard or guidance on adjusting stand age based on natural disturbance. Since this CE assessment is reporting the amount of old growth forest against legal and policy targets, it does not attempt to make assumptions or determinations on age adjustments post natural disturbance and uses the stand ages currently reflected in the VRI. **Because changes in age due to natural disturbances are not immediately reflected in the VRI, the amount of old growth forest (or mature-plus-old forest) may be overestimated, while the amount of early forest may be underestimated.**

### 2.2.4 Climate Change

A key area of uncertainty is climate change and the potential rate, amount, and characteristics of climate change impacts that can be anticipated. The Region has already experienced a warming trend of just over 1°C in the last century, with this warming trend more evident over the 1951-2009 period (PCIC, 2013). Precipitation has also been increasing in all seasons during this period. However, these trends are regional averages and locations with complex topography could vary considerably with elevation.

Climate change projections suggest the Region will warm on average between 1.6 and 4.4°C by the end of this century (PCIC, 2013; Government of Canada, 2020). Temperatures will warm year-round with hotter summers expected to be more pronounced in valley bottoms. This may result in longer warm seasons, including earlier springs and later fall conditions, and shorter cold seasons over time. Precipitation projections show a modest increase (10%) in all seasons except summer which will remain the driest season (decrease 10%). This, in concert with hotter temperatures, will increase evaporation rates and create even drier, hotter summers than currently experienced. Changes in precipitation are likely to cause more frequent flooding and landslide events, reduced snowpack, and changes to quantity and timing of stream flows, which in turn increases stress to ecosystems and infrastructure.

Forests are vulnerable where the natural disturbance regime is projected to change; for example, from a gap-dynamic dominated system to a stand-replacing disturbance regime. Increased temperatures may result in more frequent and longer insect outbreaks that pose a higher risk to increasingly drought-stressed stands. Tree mortality may increase because of increased forest health risks exacerbated by drought stress and severe disturbance events (e.g., catastrophic wildfire, windstorms). Increased precipitation may result in more frequent and intensified tree infection by forest pathogens adding to tree stress. Extreme weather events will increase the risk of flooding and potentially trigger mass movements in steep terrain, particularly during rapid melt periods. Given the complexity of variables, the potential for unanticipated outcomes and cumulative effects is high (Sturrock et al., 2011).

# 3 OLD GROWTH FOREST MANAGEMENT IN THE KLRMP AREA

The KLRMP area is the only land base in the Region with legal old growth management areas not established under the legal objectives of PNOGO. This is due to the process to establish OGMA from the KLRMP subcommittee that superseded the establishment of the PNOGO in 2004. As of 2013, legally established OGMA occur across all 33 established LUs (except Wells Gray Provincial Park). For this CE assessment, old growth forest targets from the BDG were used for comparison only, noting that actual OGMA establishment was a negotiated outcome from these policy targets (discussed below). Refer to Appendix 3 (Table 23) for a complete summary of the old growth forest targets for the KLRMP area.

Management of mature forest for recruitment into old growth forest is guided through non-legal policy targets, as defined in the BDG. Management of mature forest for forest biodiversity on the landscape has not been a priority or legally established in the KLRMP area or most of the province. The inclusion of mature-plus-old forest as a CE assessment indicator for old growth forest provides additional information and clarification on the current condition of forest seral stages that may contribute to old growth forest values (see section 2.1.4). More information on old growth forest management in B.C. is provided in the [Old Growth Forest Management in British Columbia: Provincial Background](#) (2024). Refer to Appendix 3 (Table 24) for a complete summary of the mature-plus-old forest targets for the KLRMP area.

## 3.1 Legal Old Growth Order

In the KLRMP area, old growth forests are managed through the legal objectives established in the [Order Establishing Old Growth Management Objectives for the Kamloops Land and Resource Management Plan Area](#) (2013). The legal order defines the LUs and their respective BEOs and establishes the spatially defined legal OGMA across the KLRMP area. The overarching objective is to manage old growth forest attributes at a landscape level (LU-BEC scale) over time through OGMA while also managing these attributes at a stand level through other tools such as wildlife tree patches. It is accepted that natural disturbances are part of the ecological process expected within OGMA. As such, it is recognized that OGMA may not necessarily be comprised of “old forest” but are established to capture rare or unusual features or are a result of the planning process where younger forests are identified to be managed as OGMA due to their location (e.g., inclusion of riparian complexes) or a lack of old growth forest in an area. Objectives 2 and 3 provide for specific purposes when activities may occur within an OGMA and the allowable limits for those activities (see section 3.1.2 below).

The KLRMP process was a negotiation between individuals representing various sectors at the KLRMP table. The Landscape Unit Planning Guide (LUPG, 1999) provided a strict “rules-based” approach on how OGMA were to be designed to mitigate impacts on timber supply (no more than 4% impact to timber supply). This required that all old growth forest retention targets be met (i.e., co-located) first in the non-timber harvesting land base (NTHLB) (e.g., parks, ecological reserves) and areas with harvesting restrictions (e.g., wildlife habitat areas, ungulate winter ranges). Only after the old growth target was co-located could the remaining timber harvesting land base (THLB) be used to achieve OGMA targets by LU-BEC. If there was not enough old growth forest in the LU-BEC to meet the target, then the next oldest available forest (generally mature forest) could be recruited, first from the NTHLB before identifying areas in the THLB. All OGMA located outside of Provincial Parks and Protected Areas were subject to the OGMA order. The non-legal OGMA placed within Provincial Parks and Protected Areas were not subject to the order and were not included in the legal order map. This exclusion resulted in legal OGMA slivers on the outside of parks where the larger non-legal portion was identified within the park. For this CE assessment, these slivers of legal OGMA that are outside of the parks are included in the reporting.

Through the KLRMP process, the maximum target area identified in the non-contributing land base was 192,127 ha, while the total area identified for biodiversity targets was not to exceed 235,509 ha, ensuring that the impact to timber supply was limited to 43,382 ha of THLB at the time (2013). Starting in 2002, OGMA's were allocated across the landscape through a map-based negotiation process between government representatives and forest licensees. During negotiations, OGMA's could be moved to other LUs and BECs as long as ecosystem representation was maintained. Upon establishment of the 2013 legal order, the non-legal 1996 KLRMP old growth forest objectives were rescinded.

The legal old growth order is applicable to Forest Stewardship Plan (FSP) holders and licenses/licensees party to the FSPs; it is not legally applicable to any other entities that may disturb OGMA's under other tenures or authorizations (e.g., *Land Act*) or other government authorities (e.g., mines, oil and gas).

### 3.1.1 Old Growth Forest Targets

The LUs within the KLRMP area are not referenced in PNOGO and because there is an overarching Higher-Level Plan (1996, 2006, 2013) in place for the KLRMP area therefore PNOGO does not apply, including the permissible 2/3 drawdown in Low BEO units. **OGMA's were designed to full targets and this CE assessment applied the full targets to all LUs with Low BEO designation.** As a result, policy targets were taken from the BDG (1995) in order to complete the CE assessment for the old growth forest and mature-plus-old forest indicators.

Table 5 only includes the NDT/BEC/BEOs that have targets provided in the BDG. The NDT5 has been excluded as no targets are established for alpine tundra and subalpine parklands. In addition, portions of the BG BEC zone that occur in NDT 4 have also been excluded as no targets are established in these ecosystems.

**Table 5.** Old Growth Forest Policy Targets (%) by Biodiversity Emphasis Option (BEO) and Biogeoclimatic Ecosystem Classification (BEC) Zone in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Natural Disturbance Type (NDT)	BEC Zone	PNOGO Target % Old Growth Retention			Old Growth Forest Age Definition (years) <sup>a</sup>
		Low BEO	Intermediate BEO	High BEO	
NDT1	ESSF	19	19	28	>250
	ICH	13	13	19	>250
NDT2	ESSF	9	9	13	>250
	ICH	9	9	13	>250
NDT3	ESSF	14	14	21	>140
	ICH	14	14	21	>140
	MS	14	14	21	>140
	SBPS	7	7	10	>140
	SBS	11	11	16	>140
NDT4	IDF	13	13	19	>250
	PP	13	13	19	>250

<sup>a</sup> Old growth forest age definitions are from PNOGO (2004).



### 3.1.2 OGMA Incursions and Amendments

It is common for OGMA to have historic anthropogenic incursions and natural disturbances included within the OGMA boundary at the time of legal establishment<sup>8</sup>. Natural disturbances such as fires, insects, pathogens, and wind will occur in OGMA and alter forest stand composition within the OGMA over time. These changes are expected to be most evident in ecosystems with frequent stand-initiating events (NDT3); however, disturbances will naturally occur in all ecosystems. Incursions can also occur due to forest management practices, such as response to natural disturbances or operational alignment to OGMA boundaries. Incursions into OGMA varies across the province based on objectives in legal orders.

Guidance for incursions into legal OGMA are provided in the [Order Establishing Old Growth Management Objectives for the Kamloops Land and Resource Management Plan Area](#) (2013) under Part 2, Objective 2, while the threshold for allowed incursions is defined under Objective 3. The [Old Growth Management Objectives for the Kamloops Land and Resource Management Plan Area Interpretive Guidance](#) (2013) document provides the background and intent of the legal order, as well as interpretive guidance for professionals when considering an OGMA incursion. Under Part 2, Objective 2 of the order, all timber within OGMA is to be maintained expect as required to accommodate the following purposes:

- a. To prevent the spread of insect infestations or diseases 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 clearances 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.

Under Part 2, Objective 3 of the order, these primary forest activities 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 time period.

OGMA are intended to be fixed in place and remain largely undisturbed by human activity (e.g., forestry activities) for extended periods of time. However, it is acknowledged that there are common “low risk” situations in which professional judgement can be applied (e.g., OGMA boundary adjustment due to mapping errors). When activities result in an incursion (Objective 2), the area and location needs to be tracked to ensure incursion limits are not exceeded (Objective 3). Allowable OGMA incursions are **less than 2.0 hectares or 10% of each individual OGMA polygon, whichever is less, over a 20-year period**. Any incursion beyond this threshold or cumulatively over the 20-year period would result in the OGMA being replaced. Incursions are tracked by the forest licensees for due diligence purposes and to ensure that incursion limits are not exceeded over the 20-year period. OGMA amendments are then processed by the District, and this spatial data is used to update the provincial OGMA dataset in the BC Geographic Warehouse (BCGW).

The KLRMP interpretive guidance document (2013) includes an ecological and biodiversity evaluation form with considerations for replacement OGMA to maintain the “same or improved biodiversity values” as the original OGMA. All proposed OGMA amendments require a written professional rationale which considers stand level attributes of the original and proposed OGMA. Replacement OGMA must be equal or better quality than the original OGMA based on old growth attributes understood to be important for biodiversity conservation. In the final decision, the Land Use Objective Regulation Policy and Procedures (2008) document as well as the KLRMP interpretive guidance document, must be considered.

<sup>8</sup> The Interim CE Old Growth Assessment Protocol defines incursions as anthropogenic (human caused) disturbance footprints that are within the legal or non-legal OGMA boundary. These can include roads, cutblocks, and oil and gas developments. Natural disturbances such as fire, insect, and wind events are not considered incursions under this assessment.

## 3.2 Non-Legal Old Growth Policy

Provincial direction under the LUPG (1999) prioritized the management of the old growth forest value while mature-plus-old targets were not to be implemented. Through the 2013 KLRMP OGMA process and negotiations, it was agreed to not establish legal requirements for mature-plus-old forest targets. Even though mature-plus-old forest targets are not legally required, an assessment is provided to better understand the current state of mature forest and where it may be available for recruitment to achieve old forest targets, particularly where old forest is poorly represented or OGMA may need to be replaced. The *Biodiversity Guidebook* (BDG, 1995) provides policy targets used in this assessment.

### 3.2.1 Mature-Plus-Old Forest Targets

Mature-plus-old forest policy targets are set in the BDG by LU for each NDT, BEC, and BEO combination with targets defined by forest age (Table 6). Targets are incremental to old forest targets; additional old forest can be substituted for mature forest to meet targets, but mature forest cannot be substituted for old growth forest without an approved recruitment strategy. Younger stands may be used to meet old or mature-plus-old forest targets provided they have sufficient biological value. **However, this assessment does not report on the ecological and biological effectiveness of these younger stands that may be contributing to mature-plus-old forest targets.**

As with the old growth forest targets, Table 6 only includes the NDT/BEC/BEOs that have targets provided in the BDG. The NDT5 has been excluded from this table as no targets are established for alpine tundra and subalpine parklands.

**Table 6.** Mature-plus-Old Forest Policy Targets (%) by Biodiversity Emphasis Option (BEO) and Biogeoclimatic Ecosystem Classification (BEC) Zone in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Natural Disturbance Type (NDT)	BEC Zone	Policy Target: % Mature-plus-Old Growth Forest Retention			Mature-plus-Old Growth Forest Age Definition (years) <sup>a</sup>
		Low BEO	Intermediate BEO	High BEO	
NDT1	ESSF	19	36	54	>120
	ICH	17	34	51	>100
NDT2	ESSF	14	28	42	>120
	ICH	15	31	46	>100
NDT3	ESSF	14	23	34	>120
	ICH	14	23	34	>100
	MS	14	26	39	>100
	SBPS	8	17	25	>100
	SBS	11	23	34	>100
NDT4	IDF	17	34	51	>100
	PP	17	34	51	>100

<sup>a</sup> Mature-plus-old growth forest age definitions are from BDG (1995).

# 4 CURRENT CONDITION ASSESSMENT METHODOLOGY

The CEF Interim Assessment Protocol for Old Growth Forest in British Columbia (2017) provides a foundation for a provincially consistent approach to assessing the current condition of old growth forest in B.C. The methodology, data sources, assumptions, and limitations for these assessments are provided in the protocol, as well as the [Old Growth Forests in British Columbia: Provincial Cumulative Effects Assessment Backgrounder \(2024\)](#).

The assessment indicators for the old growth forest value are a non-spatial assessment to produce quantitative results that highlight the current condition of old growth forest compared to legal or policy targets. The results and discussion presented in this report are based on the data and information at the time of the assessment (2019). Changes have occurred on the land base since which may have had significant impacts that are not represented in these assessment results.

**The non-spatial area (hectares) of old growth forest is a numerical reporting that does not reflect the ecological integrity of the old growth forest biodiversity in the AU. Further inquiry into the ecological integrity and function of the remaining old growth forest is recommended.**

Additionally, this current condition reporting does not quantify the specific anthropogenic disturbance (ha) contributing to the seral stage assessment for old growth and mature-plus-old forest. The assessment information presented in the following sections is reporting on specific indicators in an objective and transparent manner to support future planning processes and decision making regarding old growth forest management.

## 4.1 Assessment Indicators

The current condition of old growth forest was assessed using the indicators from the [Interim Assessment Protocol for Old Growth Forest in British Columbia \(2017\)](#) (Table 7). Each indicator provides specific information to inform the assessment of the current condition of old growth forest in the CE-CFLB. An additional assessment of the amount of old growth forest in OGMAs and the proportion of this old growth forest that meets the policy target is reported to provide the current condition of OGMAs. The results from this assessment are reported by assessment unit (AU), which are a combination of LU, NDT, BEO, and BEC to the subzone or variant level (Table 7).

In this report, the colour scale used for reporting the current condition of old growth forest and mature-plus-old forest does not distinguish between legal and policy targets, as described in the [Cumulative Effects Framework Interim Policy for the Natural Resource Sector \(2016\)](#) and the [Old Growth Forests in British Columbia: Cumulative Effects Assessment Backgrounder \(2024\)](#). This has occurred for several reasons and the decision was based on local discussions. There was a desire from Region to use a consistent colour scheme across all land bases and indicators, regardless of whether the targets were established through a legal or policy mechanism. As a result, the “red-green” colour scale identified in the Assessment Backgrounder has been used for the current condition of old growth forest and mature-plus-old growth forest indicators.

**Table 7.** Cumulative Effects Assessment Indicators used to Assess the Current Condition of Old Growth Forest in the Cumulative Effects Crown Forested Land Base (CE-CFLB) by Assessment Unit (AU).

Indicator	Assessment Questions
<b>Current Condition of Old Growth Forest Retention</b>	
<b>Amount of Old Growth Forest</b>	<ul style="list-style-type: none"> <li>• What is the current amount of old growth forest in the CE-CFLB? Where is old growth forest located on the land base?</li> <li>• Which AUs meet the targets for old growth forest?</li> <li>• Which AUs are flagged for further consideration?</li> <li>• What are some of the possible reasons for the current condition?</li> </ul>
<b>Amount of Mature-plus-Old Forest</b>	<ul style="list-style-type: none"> <li>• What is the current amount of mature-plus-old forest in the CE-CFLB? Where is mature-plus-old forest located on the land base?</li> <li>• Which AUs meet the targets with mature-plus-old forest?</li> <li>• Which AUs are flagged for further consideration?</li> <li>• What are some of the possible reasons for the current condition?</li> </ul>
<b>Incursions into Old Growth Management Areas (OGMAs)<sup>a</sup></b>	
<b>Incursions into Legal OGMAs</b>	<ul style="list-style-type: none"> <li>• Are there anthropogenic incursions in OGMAs? What is the current amount of incursion into OGMAs in the CE-CFLB?</li> <li>• Do incursions exceed the order threshold?</li> <li>• What is the type of incursion into OGMAs?</li> <li>• What is the magnitude of incursions into OGMAs (total % incurred)?</li> </ul>
<b>Current Condition of Old Growth Management Areas (OGMAs) – additional indicator</b>	
<b>Amount of Old Growth Forest in Legal OGMAs</b>	<ul style="list-style-type: none"> <li>• What is the current amount of old growth forest in OGMAs in the CE-CFLB? What is the seral stage breakdown? Where is old growth forest located within OGMAs?</li> <li>• Which OGMAs meet and do not meet targets by BEC subzone or variant within each LU?</li> </ul>

<sup>a</sup> For this assessment indicator, incursions into OGMAs are defined as anthropogenic disturbance footprints resulting from resource development activities and do not include natural disturbance like wildfires and insects.

## 4.2 Assessment Units

Assessment units (AUs) are defined by combinations of LU, NDT, BEO, and BEC to the subzone or variant. These units reflect the scale at which policy targets for old growth retention are applied (e.g., in the BDG). In this report, these AUs are used to report on the current state of old growth forest on the CE-CFLB as per the indicators described in section 4.1. This report summarizes the results by LU, BEO, and BEC subzone/variant, to aid in understanding the current state of old growth forest. A gradient colour scale is used to illustrate the current condition of the old growth forest and mature-plus-old forest indicators (Table 8).

**Table 8.** Colour Scale for Interpreting Current Condition Maps and Target Status Categories as a Percentage of Policy (BDG) Targets Met.

Gradient Scale for Old Growth and Mature-plus-Old Forest Indicators: Legal and Policy Targets	Indicator Condition Interpretation	Current Condition Status (% of Target Met with Old or Mature-plus-Old Forest)	Analysis Definition (% of Target Met with Old or Mature-plus-Old Forest)
	Below Target	0–30%	0–29.99%
	Below Target	30–50%	30–49.99%
	Below Target	50–75%	50–74.99%
	Below Target	75–100%	75–99.99%
	Target Met	100–110%	100–109.99%
	Above Target	110–125%	110–124.99%
	Above Target	125+%	125+%

## 4.3 Assessment Data

Consolidating all resource developments was necessary to assess the current condition of old growth forests on the landscape. As such, consolidated disturbance layers were developed specifically to address CE on all Provincial CEF values, including old growth forest. The source of data to support this analysis is from the 2019 BC Cumulative Effects Human Disturbance with Baseline Thematic Mapping (also known as CE Human Disturbance Layer) and the 2019 BC Cumulative Effects Integrated Road (also known as CE Road Layer) datasets.<sup>9</sup> These datasets were developed from publicly accessible data repositories, mainly the BC Geographic Warehouse (BCGW). This assessment did not consider natural disturbances (i.e., wildfires or insect outbreaks) that were not included in the VRI at the time of data extraction from the BCGW (2019).

### 4.3.1 OGMA Incursions

The CE assessment compares the area of anthropogenic (human-caused) disturbance footprint (i.e., incursions) in OGMAs relative to allowable incursions specified in the applicable order, policy, or guidance. Incursions are defined as alterations to OGMAs caused by resource development activities that permanently alter the forested land base or that convert forests to an early seral stage (i.e., less than 40 years old). Resource development activities include permitted forestry activities (i.e., cutblocks, roads), non-forestry-related activities (e.g., pipelines, oil and gas, mining, fire guards, urban development, land tenuring), and other human use features (i.e., recreation sites and trails).

In the assessment, disturbances include only active, initiated, tenured, and completed developments, and does not consider proposed or anticipated projects and activities at the time of the assessment. The exception to this is roads due to variation in accuracy of spatial road data. For example, there may be roads represented in the data that were

<sup>9</sup> The 2021 version of these CE data layers can be found here: [BC Cumulative Effects Human Disturbance with Baseline Thematic Mapping](#) and the [BC Cumulative Effects Integrated Roads](#).

not built on the ground or had variable road widths based on the local terrain. In the analysis, roads were applied various buffer widths, ranging from 5 to 60 metres, depending on the source data attributes, input from Regional staff, existing methodology, and satellite imagery. As a result, the road dataset may be incorrect or incomplete as all roads are represented in the data regardless of whether the road was developed or not.

Road disturbances are sourced from a variety of road-related datasets including Forest Tenures (FTEN), Digital Road Atlas (DRA), Reporting Silviculture Updates and Land Status Tracking System (RESULTS), and the Oil and Gas Commission. These multiple inputs were combined into the CE Integrated Roads Layer (2019) resulting in a single data record for each road<sup>10</sup>. These source datasets include other linear features, such as fire guards, operational skid trails, and some recreational trails. As a result, road disturbances used in this CE assessment include these additional linear features (i.e., fire guards and some trails).

Disturbances in OGMA were identified from the CE Human Disturbance Layer (2019) and the CE Integrated Roads Layer (2019). Some source data does not include a disturbance date; therefore, it was not possible to remove disturbances that occurred prior to OGMA establishment. Due to data limitations, most disturbances (e.g., roads) do not have dates provided, except for forest harvesting (e.g., cutblocks). Cutblocks that were more than 20 years old or pre-date the legal establishment of the OGMA were removed. This means that the 'cutblocks' incursion category represents forest harvesting that occurred between 1999 and 2019, and any forest harvesting within an OGMA that occurred prior to 1999 or after 2019 is not included in this assessment. As a result, all disturbances were included in this assessment with the exception of historical cutblocks (i.e., 20 years and older). **Consequently, this may skew the assessment results to show incursions that were known and accepted at time of OGMA establishment. At the very least, all OGMA incursions beyond the threshold limits should trigger further inquiry.**

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<sup>10</sup> See the [BC Data Catalogue](#) for the methodology that was applied in the 2019 CE Integrated Roads Layer.

# 5 ASSESSMENT RESULTS

This section presents the assessment results for each CE indicator by AU and summarizes the results at multiple scales and combinations of LU, NDT, BEO, and BEC through maps and tables, followed by regional commentary to support further discussion. Many of the tables presented in this section have additional information available in the Appendices. The regional commentary interprets, as best as possible, the meaning of results, possible contributing or causal factors, and limitations. The amount and age of old and mature forests is derived from the provincial BCGW VRI dataset (extracted in 2019). **The results and discussion are based on the data and information at the time of the assessment (2019). Any activities or disturbances that have occurred since that time are not captured in this assessment.** With the limitations of the assessment, it is possible that the amount of old growth forest for an AU could be overestimated or underestimated.

**The results of the current condition reporting for old growth forest are not a determination or judgement of compliance or non-compliance with legal orders or policy.** These assessments provide an interpretative reporting of current conditions based on indicators and thresholds as guided by policy.

In the KLRMP area, there are 237 AUs included in this assessment. A table summarizing the denominator (total area (ha) and total CE-CFLB considered) used for each CE indicator is presented in Appendix 2.

## 5.1 Amount of Old Growth Forest

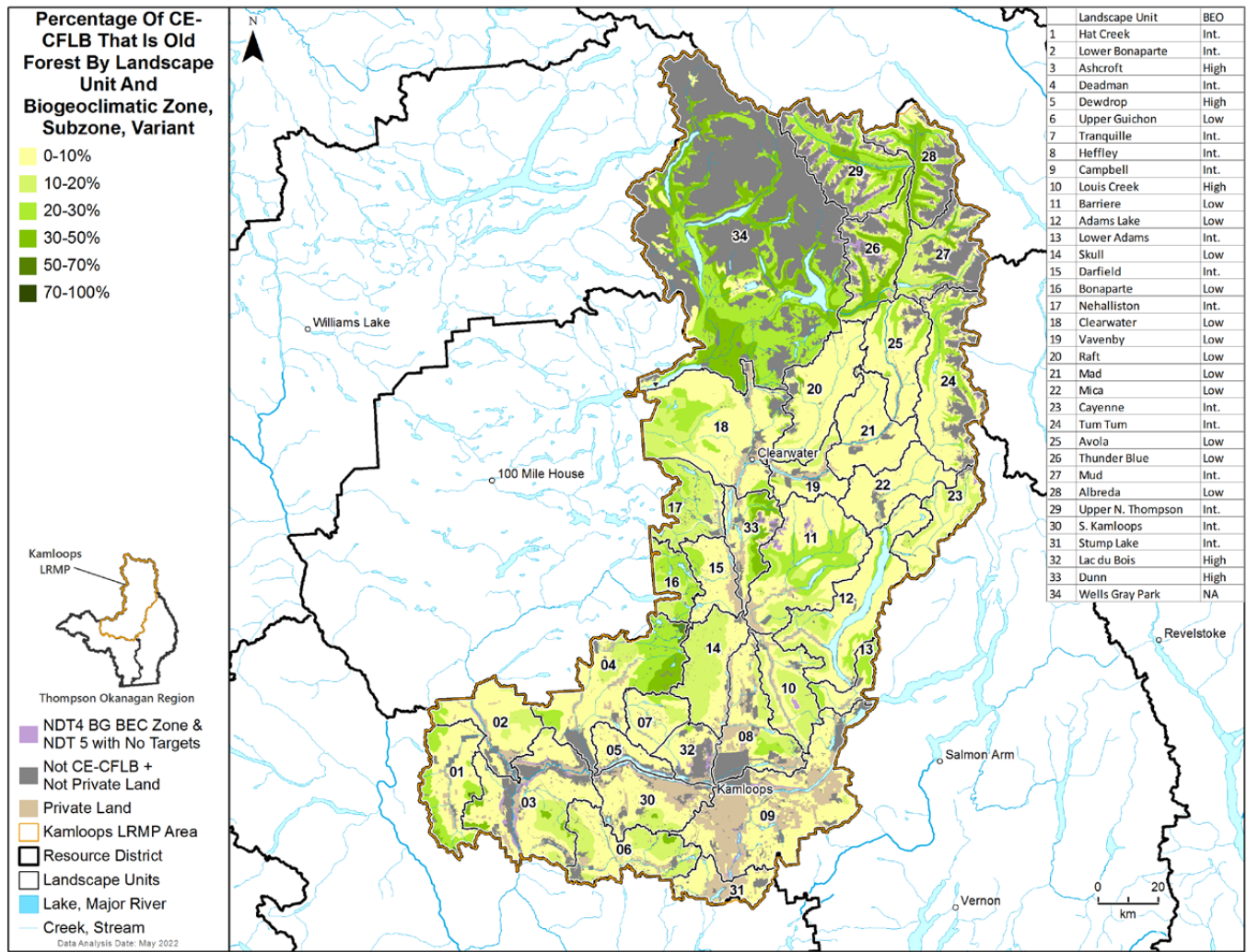
This non-spatial indicator determines the current amount of old growth forest within each AU in relation to the policy targets for old growth forest. In the KLRMP, the old growth forest targets used to guide the amount of old growth forest required originated from the BDG and through negotiations and agreements made at the KLRMP table. The BDG policy targets in general provide a consistent foundation for current condition reporting of old growth forest as it establishes the minimum percent threshold for old growth forest representation that should be achieved in each AU.

Old growth forest targets were set by the KLRMP (guided by the BDG and negotiated at the KLRMP table) by LU for each NDT, BEO, and BEC combination (i.e., AU) with targets defined by forest age. Refer to Table 5 (section 3.1.1) for the age-based definitions of old growth forest. Appendix 3 (Table 23) provides a complete listing of current conditions; the total amount of old growth by each AU in the CE-CFLB, and the current amount of old growth forest compared to the policy targets (the CE old growth indicator) for all AUs in the KLRMP area.

### 5.1.1 Total Amount of Old Growth Forest in the CE-CFLB

Overall, 11.8% or 232,080.7 ha of the total CE-CFLB area is old growth forest; however, in the CE-CFLB area with policy targets, 8.8% (or 172,899.6 ha) is old growth forest. Old growth forest in the CE-CFLB is primarily in the higher elevations in the northern part of the KLRMP area with some occurrence in the south and mid elevation forests along the North Thompson River valley from Clearwater to Kamloops (Figure 6). The majority of the KLRMP area has 0- 10% of CE-CFLB identified as old growth forest. The highest percentages of old growth forest primarily exist in the Thunder Blue, Bonaparte, Albreda, Upper North Thompson, and Dunn LUs.

Provincial Parks have been included because the presence of old growth forest in these areas contributes to the overall current condition of old growth forest in the CE-CFLB. However, the majority of Wells Gray Provincial Park is unique because it is not assigned an LU in the KLRMP, and no targets are applied (as described in section 2.1.2). As a result, Wells Gray Park is included in reporting the total amount of old growth and mature-plus-old forest on the CE-CFLB but not included in the indicator assessments comparing current amounts to policy targets.



**Figure 6.** Percent of Cumulative Effects Crown Forested Land Base (CE-CFLB) that is Old Growth Forest by Assessment Unit (AU) in the Kamloops Land and Resource Management Plan (KLRMP) Area.<sup>11</sup>

<sup>11</sup> Wells Gray Provincial Park is included on the map as it contributes to the current condition of old growth forest.



## 5.1.2 Overview of Assessment Units

This section of the report provides a high-level summary of old growth assessment results compared to policy (BDG) targets by AU for the KLRMP area. The total CE-CFLB is 1,966,473.5 ha with 1,723,540.9 ha having assigned policy targets; areas like Wells Gray Provincial Park contribute to the CE-CFLB but are not a legally established LU with targets (Table 9). The total amount of old growth forest in the CE-CFLB with assigned BEO is 172,899.6 ha (8.8% of CE-CFLB), of which 10.5%, 9.6%, and 8.1% are located within LUs assigned as Low, Intermediate, and High BEO, respectively. There are five LUs assigned as High BEO: Ashcroft, Dewdrop, Dunn, Lac du Bois, and Louis Creek. The Wells Gray Provincial Park has no BEO assigned with 59,181.0 ha of old growth forest in the CE-CFLB; higher amounts of old growth forest would be expected within a reserved area.

The BDG policy guidance<sup>12</sup> suggests that 45% of the forest area should be assigned as Low BEO (within a range of 30-55%), 45% as Intermediate BEO (35-60%), and 10% as High BEO (no range provided). In the KLRMP area, the proportion of the total CE-CFLB area assigned as Low, Intermediate, and High BEO is approximately 42.1%, 37.0%, and 10.3%, respectively, and the remaining CE-CFLB (10.6%) has no BEO assigned.

**Table 9.** Amount of Old Growth Forest in the Kamloops Land and Resource Management Plan (KLRMP) Area Cumulative Effects Crown Forested Land Base (CE-CFLB) by Biodiversity Emphasis Options (BEO).

	KLRMP Area	Biodiversity Emphasis Options (BEOs) in the CE-CFLB			
		High BEO	Intermediate BEO	Low BEO	No BEO <sup>a</sup>
<b># of Landscape Units (LUs)<sup>b</sup></b>	34	5	15	13	1
<b>Gross TSA Area (ha)<sup>c</sup></b>	2,769,416.0	273,584.5	1,023,722.7	953,333.8	518,774.9
<b>Total CE-CFLB Area (ha)</b>	1,966,473.5	203,003.5	727,588.4	827,124.9	208,756.7
<b>% Area of Total CE-CFLB</b>	100.0%	10.3%	37.0%	42.1%	10.6%
<b>CE-CFLB Area (ha) with Targets</b>	1,723,540.9	195,202.4	711,858.4	816,480.1	0.0
<b>Old Growth Forest CE-CFLB Area (ha)</b>	232,080.7	16,503.7	69,872.5	86,523.4	59,181.0
<b>% of Old Growth Forest in CE-CFLB by BEO Designation</b>	11.8%	8.1%	9.6%	10.5%	28.3%

<sup>a</sup> No BEO is established in Wells Gray Park therefore no old growth forest targets are assigned. This is provided for information and context only.

<sup>b</sup> There are three LUs with multiple BEOs assigned. Therefore, each value in the “# of Landscape Units (LUs)” row is independent of the others in such a way that they do not sum together to equal the total number shown for the KLRMP area.

<sup>c</sup> The gross area is provided for information and context only.

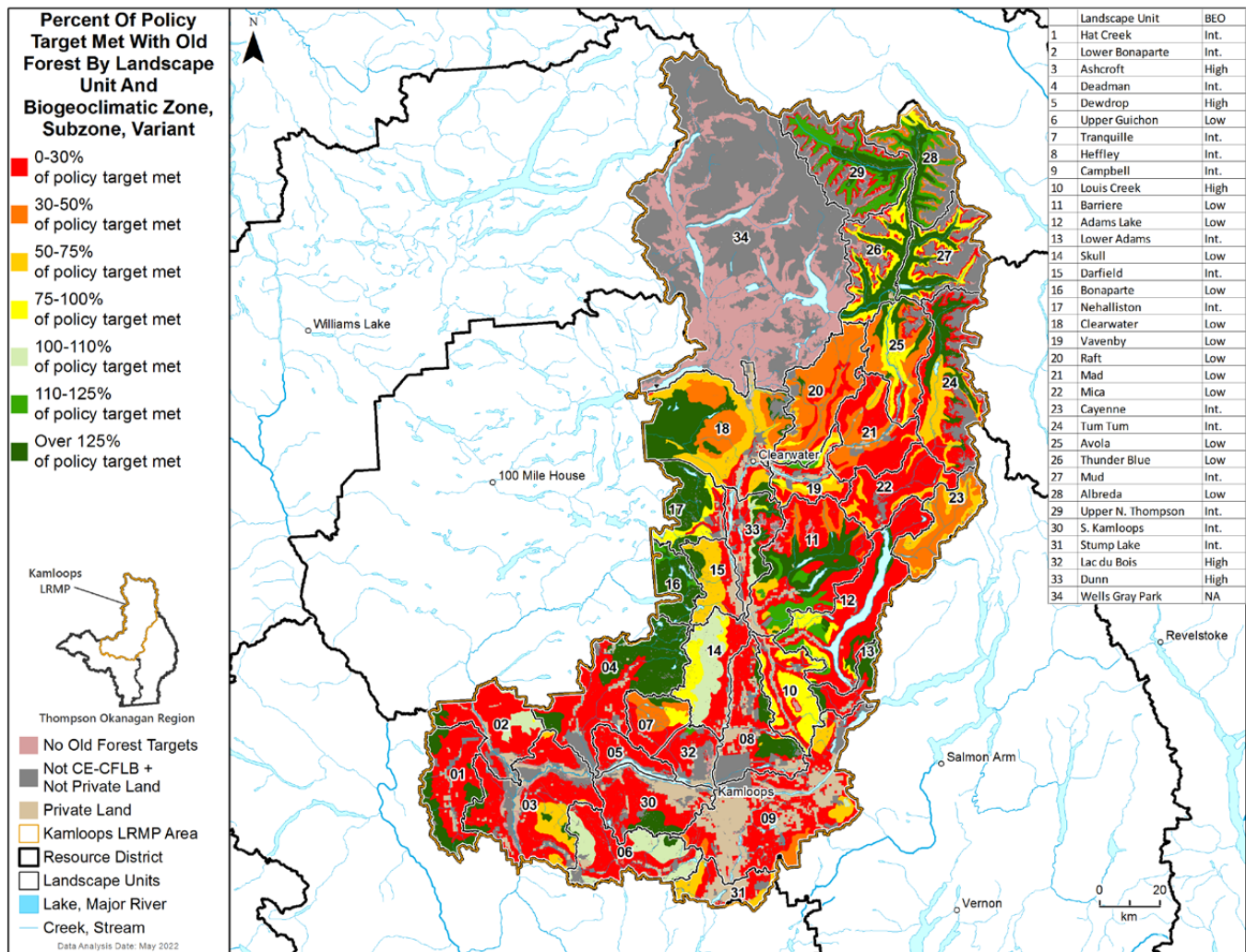
<sup>12</sup> Biodiversity Guidebook (1995, Table 1, page 8) states “Table 1 illustrates the proportion of the area of a subregional planning unit that should fall under higher, intermediate, or low biodiversity emphasis. These percentages apply to the provincial forest within the subregional planning unit.” For the purposes of this report, the CE-CFLB area within each LU is assumed as the area of provincial forest within the subregional planning unit.

### 5.1.3 Current Condition of Old Growth Forest Compared to Policy Targets

The current condition of old growth forest is one of four assessment indicators, and the following results are presented in the colour scheme and categories as a percentage of the policy target met (Figure 7) as described in section 4. In the KLRMP area, all LUs (33 total) have legal OGMA. The AUs with less than 100% of the target met are considered to be in deficit of old growth forest.

In general, the distribution of old growth forests as compared to the targets shows more old growth forest in higher elevations and less in the valley bottoms (Figure 7). There is sufficient old growth forest to meet or exceed the targets in 31% of AUs (73 out of 237 AUs). There are 60 AUs with more than 125% of the target amount of old growth forest (see Appendix 3, Table 23). The AUs that are meeting or exceeding the old growth forest targets are located primarily along the western plateau from Bonaparte Lake to Mahood Lake, around the Barriere Lakes south to Sun Peaks, and to the north in the lower elevation valleys.

There is insufficient old growth forest to meet targets in 69% of AUs (164 of 237 AUs). There are large areas with 0-30% of the targets met in the southern half and eastern portion of the KLRMP area. There are four LUs with no AUs currently meeting the targets: Dewdrop, Louis Creek, Mad, and Mica.



**Figure 7. Current Condition of Old Growth Forest as a Percent of Policy Target Met in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.<sup>13</sup>**

<sup>13</sup> Any AUs with less than 100% of the target met are considered to be in deficit of old growth forest.

The 164 AUs with insufficient old growth forest compared to the policy targets cover 1,220,990.7 ha of CE-CFLB (Table 10). Of these, 18 AUs have less than 500 ha of CE-CFLB in that LU-BEC. This low amount of CE-CFLB will influence the ability for these AUs to meet the targets in the indicator reporting.

There are 105 AUs with 0-30% of the target met that cover 757,950.3 ha of CE-CFLB, the majority of which (59% of CE-CFLB) are in the IDF BEC zone. In addition, 46 of these AUs (128,415.3 ha of CE-CFLB) have no old growth forest remaining to meet the targets, two of these AUs have more than 10,000 ha of CE-CFLB (Dunn and Adams Lake LUs) and 23 AUs have more than 1,000 ha of CE-CFLB.

There are 16 AUs (188,859.7 ha of CE-CFLB) with 30-50% of the target met, mostly in the ESSF BEC zone (109,626.1 ha of CE-CFLB). There are 24 AUs (154,197.4 ha of CE-CFLB) with 50-75% of the target met, six of which have more than 10,000 ha of CE-CFLB. These AUs are mostly in the ICH BEC zone (85,902.06 ha of CE-CFLB). Finally, there are 19 AUs (119,983.3 ha of CE-CFLB) with 75-100% of the target met, with most of these AUs in the ESSF (51,872.8 ha of CE-CFLB) and ICH (48,315.1 ha of CE-CFLB) BEC zones. Within these AUs, the current amount of old growth forest in the CE-CFLB is between 0 to 3,000 ha (0% to 21% old growth in the CE-CFLB). As the BDG old growth targets for these AUs range from 9% to 19%, many of the AUs are at risk for potentially compromising old growth biodiversity values.

Of the 73 AUs that have greater than 100% of the target met (Appendix 3, Table 23), 28 of these AUs have more than 200% of the target old growth forest amount and two AUs have more than 400%. Of the AUs meeting the targets, 11 AUs have less than 500 ha of CE-CFLB while 18 AUs have more than 10,000 ha of CE-CFLB. These AUs are distributed across the KLRMP area in all BEC zones except the IDF and PP.

**Table 10.** Assessment Units (AUs) with 0-125% of Old Growth Forest Compared to Policy Targets in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Column Calculations				A	B	C = B/A	D	E = C/D
Indicator Condition	Assessment Unit (AU)			LU-BEC Area in CE-CFLB (ha)	Existing Old Forest Area in AU (ha)	Existing Old Forest in AU (%)	Legal Old Forest Target (%)	% of Legal Target Met in AU
	BEC	LU	BEO					
0-30%	ESSFdcw	Barriere	Low	533.8	0.0	0.0%	9%	0.0%
	ESSFdcw	Clearwater	Low	244.4	0.0	0.0%	9%	0.0%
	ESSFdcw	Louis Creek	High	545.4	0.0	0.0%	13%	0.0%
	ESSFdcw	Lower Adams	Int.	789.8	0.0	0.0%	9%	0.0%
	ESSFwc2	Dunn	High	2.7	0.0	0.0%	28%	0.0%
	ESSFwcw	Adams Lake	Low	597.8	0.0	0.0%	19%	0.0%
	ESSFwcw	Mad	Low	1,828.3	0.0	0.0%	19%	0.0%
	ICHmk3	Clearwater	Low	50.8	0.0	0.0%	9%	0.0%
	ICHmw3	Campbell	Int.	1,235.7	0.0	0.0%	9%	0.0%
	ICHmw3	Lower Adams	Int.	4,777.8	0.0	0.0%	9%	0.0%
	IDFdk2	Adams Lake	Low	361.2	0.0	0.0%	13%	0.0%
	IDFdk2	Barriere	Low	913.6	0.0	0.0%	13%	0.0%
	IDFdk2	Campbell	Int.	2,821.5	0.0	0.0%	13%	0.0%
	IDFdk2	Heffley	Int.	5,109.8	0.0	0.0%	13%	0.0%
	IDFdk2	Lac du Bois	High	2,927.8	0.0	0.0%	19%	0.0%
	IDFdk2	Louis Creek	High	9,859.3	0.0	0.0%	19%	0.0%
	IDFdk2	Skull	Low	4,231.9	0.0	0.0%	13%	0.0%
	IDFdk2	Tranquille	Int.	1,521.0	0.0	0.0%	13%	0.0%
	IDFdk3	Tranquille	Int.	1,077.2	0.0	0.0%	13%	0.0%
	IDFmw2	Barriere	Low	7,322.1	0.0	0.0%	13%	0.0%
	IDFmw2	Campbell	Int.	6,979.8	0.0	0.0%	13%	0.0%
	IDFmw2	Darfield	Int.	6,239.1	0.0	0.0%	13%	0.0%
	IDFmw2	Dunn	High	10,686.3	0.0	0.0%	19%	0.0%
	IDFmw2	Heffley	Int.	608.2	0.0	0.0%	13%	0.0%
	IDFmw2	Louis Creek	High	6,635.7	0.0	0.0%	19%	0.0%
	IDFmw2	Mad	Low	1,330.4	0.0	0.0%	13%	0.0%
	IDFmw2	Raft	Low	1,027.2	0.0	0.0%	13%	0.0%
	IDFmw2	Skull	Low	4,904.8	0.0	0.0%	13%	0.0%
	IDFxh2	Adams Lake	Low	172.2	0.0	0.0%	13%	0.0%
	IDFxh2	Barriere	Low	95.4	0.0	0.0%	13%	0.0%
	IDFxh2	Darfield	Int.	172.7	0.0	0.0%	13%	0.0%
	IDFxh2	Dunn	High	1,219.3	0.0	0.0%	19%	0.0%
IDFxh2	Louis Creek	High	10.6	0.0	0.0%	19%	0.0%	
IDFxh2	Lower Adams	Int.	488.5	0.0	0.0%	13%	0.0%	
IDFxh2	Skull	Low	6,218.9	0.0	0.0%	13%	0.0%	
IDFxh2	Stump Lake	Int.	868.0	0.0	0.0%	13%	0.0%	

Column Calculations				A	B	C = B/A	D	E = C/D
Indicator Condition	Assessment Unit (AU)			LU-BEC Area in CE-CFLB (ha)	Existing Old Forest Area in AU (ha)	Existing Old Forest in AU (%)	Legal Old Forest Target (%)	% of Legal Target Met in AU
	BEC	LU	BEO					
IDFxh2	Tranquille	Int.		753.6	0.0	0.0%	13%	0.0%
IDFxh2	Upper Guichon	Low		8.8	0.0	0.0%	13%	0.0%
IDFwx	Lower Bonaparte	Int.		4,707.1	0.0	0.0%	13%	0.0%
PPxh2	Campbell	Int.		7,842.9	0.0	0.0%	13%	0.0%
PPxh2	Deadman	Int.		48.9	0.0	0.0%	13%	0.0%
PPxh2	Hat Creek	Int.		944.4	0.0	0.0%	13%	0.0%
PPxh2	Heffley	Int.		2,782.4	0.0	0.0%	13%	0.0%
PPxh2	Skull	Low		1,277.9	0.0	0.0%	13%	0.0%
PPxh2	Stump Lake	Int.		202.2	0.0	0.0%	13%	0.0%
IDFmw2	Adams Lake	Low		15,437.8	0.0	0.0%	13%	0.0%
IDFxh2	Heffley	Int.		12,474.9	1.9	0.02%	13%	0.1%
ICHmw3	Barriere	Low		6,892.1	1.0	0.01%	9%	0.2%
IDFdk1	Stump Lake	Int.		9,805.7	5.9	0.1%	13%	0.5%
PPxh2	Ashcroft	High		13,196.6	12.3	0.1%	19%	0.5%
IDFdk1	Tranquille	Int.		9,978.0	6.5	0.1%	13%	0.5%
PPxh2	Lac du Bois	High		2,226.4	2.1	0.1%	19%	0.5%
IDFxh2	Campbell	Int.		18,626.9	13.3	0.1%	13%	0.6%
IDFxh2	Lac du Bois	High		6,988.8	7.4	0.1%	19%	0.6%
PPxh2	Dewdrop	High		2,888.1	3.5	0.1%	19%	0.6%
IDFdk1	Campbell	Int.		22,355.9	21.4	0.1%	13%	0.7%
IDFmw2	Clearwater	Low		6,928.3	6.8	0.1%	13%	0.8%
PPxh2	S. Kamloops	Int.		5,171.3	5.2	0.1%	13%	0.8%
IDFdk1	Dewdrop	High		6,938.1	12.2	0.2%	19%	0.9%
IDFmw2	Lower Adams	Int.		4,759.0	8.1	0.2%	13%	1.3%
PPxh2	Lower Bonaparte	Int.		3,543.5	6.3	0.2%	13%	1.4%
IDFdk1	Lac du Bois	High		1,968.2	6.7	0.3%	19%	1.8%
IDFxh2	S. Kamloops	Int.		12,553.8	43.6	0.3%	13%	2.7%
IDFdk1	Heffley	Int.		4,879.9	19.4	0.4%	13%	3.1%
IDFxh2	Dewdrop	High		7,320.8	45.2	0.6%	19%	3.3%
IDFmw2	Vavenby	Low		4,473.7	19.4	0.4%	13%	3.3%
IDFxh2	Ashcroft	High		25,538.4	175.2	0.7%	19%	3.6%
IDFdk1	S. Kamloops	Int.		14,459.9	78.8	0.5%	13%	4.2%
ESSFwcv	Mica	Low		1,616.1	13.6	0.8%	19%	4.4%
ICHmw3	Adams Lake	Low		27,379.2	111.0	0.4%	9%	4.5%
IDFdk1	Upper Guichon	Low		32,118.9	195.1	0.6%	13%	4.7%
IDFmw2	Nehalliston	Int.		5,465.2	34.1	0.6%	13%	4.8%
ESSFwcv	Dunn	High		16.3	0.2	1.4%	28%	5.1%
IDFdk3	Deadman	Int.		22,261.7	155.1	0.7%	13%	5.4%

Column Calculations				A	B	C = B/A	D	E = C/D
Indicator Condition	Assessment Unit (AU)			LU-BEC Area in CE-CFLB (ha)	Existing Old Forest Area in AU (ha)	Existing Old Forest in AU (%)	Legal Old Forest Target (%)	% of Legal Target Met in AU
	BEC	LU	BEO					
	ESSFwc2	Adams Lake	Low	14,165.8	174.3	1.2%	19%	6.5%
	IDFdk3	Lower Bonaparte	Int.	6,103.9	52.4	0.9%	13%	6.6%
	IDFxh2	Hat Creek	Int.	19,074.9	198.9	1.0%	13%	8.0%
	ESSFwc2	Barriere	Low	27,385.6	462.7	1.7%	19%	8.9%
	ESSFdcw	Adams Lake	Low	1,505.7	13.1	0.9%	9%	9.7%
	ICHmw3	Mica	Low	12,805.2	117.8	0.9%	9%	10.2%
	IDFdk1	Deadman	Int.	10,190.9	140.1	1.4%	13%	10.6%
	ESSFwcw	Barriere	Low	4,676.7	98.4	2.1%	19%	11.1%
	IDFdk1	Ashcroft	High	26,212.4	563.2	2.1%	19%	11.3%
	ESSFwcw	Thunder Blue	Low	7,044.6	158.2	2.2%	19%	11.8%
	ESSFwc2	Mica	Low	15,533.9	354.3	2.3%	19%	12.0%
	IDFxh2	Deadman	Int.	12,884.8	221.9	1.7%	13%	13.2%
	IDFxh2	Lower Bonaparte	Int.	11,106.9	193.9	1.7%	13%	13.4%
	ESSFwcw	Upper N. Thompson	Int.	13,151.6	351.8	2.7%	19%	14.1%
	ESSFwcw	Tum Tum	Int.	9,006.5	263.9	2.9%	19%	15.4%
	IDFdk1	Hat Creek	Int.	16,427.9	334.4	2.0%	13%	15.7%
	MSdm2	Stump Lake	Int.	287.9	6.6	2.3%	14%	16.3%
	ICHdw3	Avola	Low	3,315.5	77.5	2.3%	14%	16.7%
	IDFdk1	Lower Bonaparte	Int.	13,216.4	315.6	2.4%	13%	18.4%
	ESSFdcw	Dunn	High	4,234.3	101.5	2.4%	13%	18.4%
	ESSFwc2	Vavenby	Low	7,673.4	287.3	3.7%	19%	19.7%
	ESSFwcw	Avola	Low	5,209.3	200.2	3.8%	19%	20.2%
	ESSFvcw	Tum Tum	Int.	1,652.1	67.7	4.1%	19%	21.6%
	ICHmw3	Raft	Low	10,095.7	202.0	2.0%	9%	22.2%
	ICHmw3	Mad	Low	14,171.7	318.3	2.2%	9%	25.0%
	ESSFwc2	Mad	Low	23,217.6	1,151.3	5.0%	19%	26.1%
	ICHmw3	Tum Tum	Int.	3,714.0	89.5	2.4%	9%	26.8%
	ESSFwc2	Tum Tum	Int.	17,011.2	901.0	5.3%	19%	27.9%
	ESSFwcw	Mud	Int.	7,588.7	407.6	5.4%	19%	28.3%
	ICHwk1	Adams Lake	Low	5,569.1	208.3	3.7%	13%	28.8%
	ICHdw3	Mica	Low	12,475.5	511.3	4.1%	14%	29.3%
30-50%	ESSFwcw	Albreda	Low	8,133.7	499.3	6.1%	19%	32.3%
	ESSFmmw	Albreda	Low	559.9	16.8	3.0%	9%	33.4%
	ICHwk1	Cayenne	Int.	7,341.4	321.6	4.4%	13%	33.7%
	ICHmw3	Cayenne	Int.	16,164.4	509.4	3.2%	9%	35.0%
	MSxk2	Campbell	Int.	5,170.2	283.8	5.5%	14%	39.2%
	ICHwk1	Raft	Low	3,764.9	193.0	5.1%	13%	39.4%
	MSxk2	Tranquille	Int.	9,677.0	558.1	5.8%	14%	41.2%

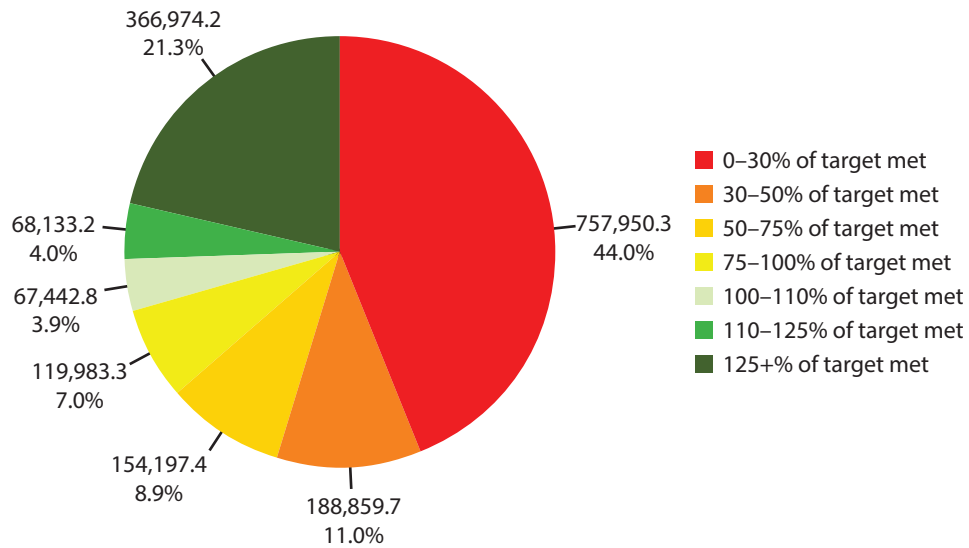
Column Calculations				A	B	C = B/A	D	E = C/D
Indicator Condition	Assessment Unit (AU)			LU-BEC Area in CE-CFLB (ha)	Existing Old Forest Area in AU (ha)	Existing Old Forest in AU (%)	Legal Old Forest Target (%)	% of Legal Target Met in AU
	BEC	LU	BEO					
	ESSFwc2	Raft	Low	36,958.6	3,000.6	8.1%	19%	42.7%
	ICHdw3	Mad	Low	15,037.2	900.1	6.0%	14%	42.8%
	ESSFwc2	Clearwater	Low	33,175.4	2,711.6	8.2%	19%	43.0%
	ESSFwcw	Cayenne	Int.	4,716.2	385.5	8.2%	19%	43.0%
	ESSFwc2	Avola	Low	23,638.5	1,972.9	8.3%	19%	43.9%
	MSdm2	Campbell	Int.	3,592.8	223.3	6.2%	14%	44.4%
	ICHdw3	Raft	Low	10,440.9	665.1	6.4%	14%	45.5%
	ESSFdc3	Tranquille	Int.	2,443.8	158.5	6.5%	14%	46.3%
	ICHwk1	Barriere	Low	8,044.8	489.1	6.1%	13%	46.8%
50-75%	MSdm3	Barriere	Low	4,403.5	315.1	7.2%	14%	51.1%
	ESSFvc	Tum Tum	Int.	1,887.6	188.2	10.0%	19%	52.5%
	ESSFdc2	Campbell	Int.	516.6	38.4	7.4%	14%	53.0%
	ESSFwc2	Cayenne	Int.	14,746.7	1,510.4	10.2%	19%	53.9%
	ESSFdc3	Heffley	Int.	228.0	18.1	7.9%	14%	56.7%
	ICHwk1	Mica	Low	8,409.3	623.8	7.4%	13%	57.1%
	ESSFxc2	Heffley	Int.	98.3	7.9	8.0%	14%	57.1%
	ESSFwcw	Vavenby	Low	527.3	58.6	11.1%	19%	58.5%
	MSdm3	Campbell	Int.	5,022.2	413.1	8.2%	14%	58.8%
	ICHwk1	Tum Tum	Int.	16,554.1	1,268.9	7.7%	13%	59.0%
	ICHwk1	Mad	Low	3,629.7	280.3	7.7%	13%	59.4%
	ESSFwcw	Raft	Low	2,244.5	253.4	11.3%	19%	59.4%
	ICHmk2	Clearwater	Low	13,700.4	1,182.1	8.6%	14%	61.6%
	SBSmm	Darfield	Int.	4,407.5	301.8	6.8%	11%	62.3%
	ICHmk2	Heffley	Int.	657.6	57.6	8.8%	14%	62.6%
	MSdm3	Darfield	Int.	8,607.4	756.7	8.8%	14%	62.8%
	ICHmk2	Darfield	Int.	7,121.8	632.3	8.9%	14%	63.4%
	MSxk2	Stump Lake	Int.	10,289.4	955.5	9.3%	14%	66.3%
	ICHmw3	Vavenby	Low	4,635.4	285.3	6.2%	9%	68.4%
	ESSFdc3	Vavenby	Low	147.5	14.2	9.6%	14%	68.6%
ICHmw3	Clearwater	Low	16,101.2	996.3	6.2%	9%	68.8%	
MSxk2	Ashcroft	High	15,168.7	2,204.4	14.5%	21%	69.2%	
ICHdw3	Clearwater	Low	10,408.7	1,035.4	9.9%	14%	71.1%	
ICHmk2	Campbell	Int.	4,683.9	467.3	10.0%	14%	71.3%	
75-100%	ESSFdc3	Louis Creek	High	11,183.8	1,773.7	15.9%	21%	75.5%
	ICHmk2	Skull	Low	2,236.6	236.7	10.6%	14%	75.6%
	MSdm3	Tranquille	Int.	3,514.7	379.8	10.8%	14%	77.2%
	ESSFwc2	Mud	Int.	10,879.9	1,604.1	14.7%	19%	77.6%
	ESSFdc3	Skull	Low	8,507.2	931.3	10.9%	14%	78.2%

Column Calculations				A	B	C = B/A	D	E = C/D
Indicator Condition	Assessment Unit (AU)			LU-BEC Area in CE-CFLB (ha)	Existing Old Forest Area in AU (ha)	Existing Old Forest in AU (%)	Legal Old Forest Target (%)	% of Legal Target Met in AU
	BEC	LU	BEO					
100–110%	ICHmk2	Louis Creek	High	4,495.1	747.5	16.6%	21%	79.2%
	ICHmk2	Nehalliston	Int.	6,172.0	693.9	11.2%	14%	80.3%
	ICHmk2	Adams Lake	Low	10,438.1	1,198.6	11.5%	14%	82.0%
	ESSFwc2	Thunder Blue	Low	16,892.1	2,724.2	16.1%	19%	84.9%
	ESSFxc2	Lower Bonaparte	Int.	227.8	27.4	12.0%	14%	86.0%
	ICHmw3	Avola	Low	14,987.6	1,252.5	8.4%	9%	92.9%
	MSdm3	Louis Creek	High	12,436.1	2,429.0	19.5%	21%	93.0%
	ESSFxc2	Skull	Low	3,137.5	412.0	13.1%	14%	93.8%
	SBSdw1	Nehalliston	Int.	3,844.6	399.3	10.4%	11%	94.4%
	ICHmm	Albreda	Low	1,213.7	103.8	8.5%	9%	95.0%
	ICHmk2	Raft	Low	3,010.5	402.2	13.4%	14%	95.4%
	ICHdw3	Vavenby	Low	4,913.8	678.8	13.8%	14%	98.7%
	ESSFmm1	Albreda	Low	1,044.6	93.2	8.9%	9%	99.2%
	ICHmk2	Dunn	High	847.6	177.4	20.9%	21%	99.6%
110–125%	MSxk2	Upper Guichon	Low	28,115.9	4,011.1	14.3%	14%	101.9%
	MSdm3	Skull	Low	24,689.4	3,567.0	14.4%	14%	103.2%
	ESSFdc3	Campbell	Int.	1,050.1	156.5	14.9%	14%	106.4%
	MSdm3	Dunn	High	4,716.0	1,063.3	22.5%	21%	107.4%
	MSxk2	Lower Bonaparte	Int.	8,871.4	1,343.6	15.1%	14%	108.2%
110–125%	ICHmk2	Barriere	Low	13,363.2	2,067.9	15.5%	14%	110.5%
	ESSFwc2	Upper N. Thompson	Int.	26,702.9	5,675.7	21.3%	19%	111.9%
	SBSmm	Raft	Low	2,556.8	318.3	12.5%	11%	113.2%
	ESSFwc2	Albreda	Low	13,301.4	2,872.3	21.6%	19%	113.7%
	SBSmm	Vavenby	Low	1,946.0	249.8	12.8%	11%	116.7%
	SBSmm	Bonaparte	Low	3,090.7	404.0	13.1%	11%	118.8%
	MSdm3	Adams Lake	Low	6,317.3	1,071.6	17.0%	14%	121.2%
	MSdm3	Lac du Bois	High	854.9	220.7	25.8%	21%	123.0%

Of the CE-CFLB with targets (1,723,540.9 ha), 29.2% of the CE-CFLB (502,550.2 ha) is meeting or exceeding old growth forest targets; 21.3% of the CE-CFLB (366,974.2 ha) has greater than 125% old growth forest compared to the targets (Figure 8). Of the CE-CFLB that does not have enough old growth forest as compared to the targets, 7.0% (119,983.3 ha) falls within the 75-100% target met category, 8.9% (154,187.4 ha) within the 50-75% category, 11.0% (188,859.7 ha) within the 30-50% category, and 44.0% (757,950.3 ha) within the 0-30% category.



**CE-CFLB Area (ha) by Cumulative Effects Indicator Condition**



**Figure 8.** Amount of Cumulative Effects Crown Forested Land Base (CE-CFLB) in each Cumulative Effects Indicator Condition as a Percentage of Policy Targets Met in the Kamloops Land and Resource Management Plan (KLRMP) Area.

**5.1.3.1 Landscape Unit and Old Growth Forest Distribution Compared to Policy Targets**

This section provides an overview of the assessment results summarized by LU. Table 11 shows the status of old growth forest as compared to the policy targets for all LUs. Overall, 31% of the AUs are meeting the old growth forest targets. The Bonaparte LU is the only LU meeting the targets for old growth forest in all AUs, however this is a relatively small area within the KLRMP area (less than 2% of the total CE-CFLB area). There are four LUs where no AUs (0%) are meeting the old growth forest targets: Dewdrop, Louis Creek, Mad, and Mica.

**Table 11.** Summary of Assessment Units (AU) by Landscape Unit (LU) that are Meeting Policy Targets in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Assessment Units (AU)		Total # of AUs	# of AUs Meeting Old Growth Forest Policy Targets	% of AUs Meeting Old Growth Forest Policy Targets <sup>a</sup>
Landscape Unit	BEO			
Adams Lake	Low	12	3	25%
Albreda	Low	8	4	50%
Ashcroft	High	7	3	43%
Avola	Low	6	2	33%
Barriere	Low	12	3	25%
Bonaparte	Low	6	6	100%
Campbell	Int.	13	2	15%
Cayenne	Int.	5	1	20%
Clearwater	Low	10	3	30%
Darfield	Int.	6	1	17%
Deadman	Int.	9	5	56%
Dewdrop	High	3	0	0%
Dunn	High	8	2	25%
Hat Creek	Int.	7	4	57%
Heffley	Int.	10	2	20%
Lac du Bois	High	5	1	20%
Louis Creek	High	7	0	0%
Lower Adams	Int.	6	2	33%
Lower Bonaparte	Int.	9	3	33%
Mad	Low	6	0	0%
Mica	Low	5	0	0%
Mud	Int.	5	3	60%
Nehalliston	Int.	5	2	40%
Raft	Low	9	2	22%
South Kamloops	Int.	5	2	40%
Skull	Low	9	2	22%
Stump Lake	Int.	6	1	17%
Thunder Blue	Low	5	3	60%
Tranquille	Int.	8	1	13%
Tum Tum	Int.	8	2	25%
Upper Guichon	Low	4	2	50%
Upper N. Thompson	Int.	4	3	75%
Vavenby	Low	9	3	33%
<b>Total</b>	-	<b>237</b>	<b>73</b>	<b>31%</b>

<sup>a</sup> AUs with less than 100% of the policy target are considered to be in deficit of old growth forest

### 5.1.3.2 Biodiversity Emphasis Option and Old Growth Forest Distribution Compared to Policy Targets

This section provides an overview of the assessment results summarized by the BEO assigned to LUs. The BEO may influence whether there is sufficient old growth forest available to contribute to the established target. The CE assessment for old growth forest uses the full targets for Low BEO units.

The Intermediate and Low BEOs have the most CE-CFLB area, however only 32% and 33% of AUs, respectively, have sufficient old growth forest compared to the policy targets (Table 12). Currently 31% of AUs are meeting the policy targets, which equates to 29.2% of the CE-CFLB (502,550.2 ha).

**Table 12.** Summary of Assessment Units (AU) by Biodiversity Emphasis Option (BEO) that are Meeting Policy Targets in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

	Biodiversity Emphasis Options (BEOs) in the CE-CFLB			
	High BEO	Intermediate BEO	Low BEO	Total
# of Assessment Units (AUs)	30	106	101	237
# of AUs Meeting Policy Targets	6	34	33	73
% of AUs Meeting Policy Targets	20%	32%	33%	31%
CE-CFLB Area (ha) in AUs with Policy Targets	195,202.4	711,858.4	816,480.1	1,723,540.9
CE-CFLB Area (ha) in AUs Meeting Policy Targets	21,655.7	225,568.4	255,326.1	502,550.2

### 5.1.3.3 Biogeoclimatic Ecosystem Classification and Old Growth Forest Distribution Compared to Policy Targets

This section provides an overview of the assessment results summarized by BEC. In general, the amount of old growth forest is at or exceeding targets in higher elevation and wetter BEC ecosystems (ESSF, ICH, MS, SBPS, and SBS) and furthest from the targets in the dry, low elevation valley bottoms (IDF and PP).

In the CE-CFLB, there are six BEC subzone/variants that have 100% of AUs with sufficient amounts of old growth forest to meet policy targets (85,185.1 of CE-CFLB) (Table 13). Within these AUs there is 45,753.6 ha of CE-CFLB in the ICHvk1, 22,427.4 ha in the MSxk3, and 11,438.3 ha in the SBPSmk, with smaller amounts in the ESSF (5,198.6 ha in the xc3 and xcw) and SBSdh1 (367.2 ha) BEC subzone/variants.

There are 15 BEC subzone/variants that have 0% of AUs with sufficient amounts of old growth forest to meet policy targets. These AUs are primarily in the IDF (449,824.1 ha of CE-CFLB in all subzones) and PP (40,124.7 ha) BEC zones, with some CE-CFLB in the ESSF (5,660.9 ha in the dc2, mm1, mmw, vc, and vcw), MSdm2 (3,880.7 ha), and ICH (1,264.5 ha in the mk3 and mm) BEC subzone/variants.

**Table 13.** Summary of Assessment Units (AU) by Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant that are Meeting Policy Targets in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

BEC Variant <sup>a</sup>	Total Area in BEC (ha)	Total CE-CFLB Area (ha) in BEC with Targets	Existing Old Forest in CE-CFLB with Targets (ha)	Existing Old Forest in CE-CFLB with Targets (%)	# of Assessment Units (AUs) in BEC	# of AUs Meeting Policy Target	% of AU Meeting Policy Targets
ESSFdc2	518.5	516.6	38.4	7.4%	1	0	0%
ESSFdc3	90,569.1	88,482.5	21,094.0	23.4%	15	10	67%
ESSFdcw	8,206.5	7,936.7	129.3	1.6%	7	1	14%
ESSFmm1	1,073.7	1,044.6	93.2	8.9%	1	0	0%
ESSFmmw	861.8	559.9	16.8	3.0%	1	0	0%
ESSFvc	2,159.0	1,887.6	188.2	10.0%	1	0	0%
ESSFvcw	2,313.8	1,652.1	67.7	4.1%	1	0	0%
ESSFwc2	290,241.5	281,285.5	25,402.6	9.0%	15	2	13%
ESSFwcw	91,709.8	70,241.7	3,702.8	5.3%	15	1	7%
ESSFxc2	24,392.5	23,435.5	7,403.0	31.6%	11	8	73%
ESSFxc3	3,794.7	3,712.7	941.5	25.4%	2	2	100%
ESSFxcw	1,623.7	1,486.0	643.6	43.3%	2	2	100%
ICHdw3	106,134.1	86,375.0	12,076.4	14.0%	10	4	40%
ICHmk2	71,517.8	69,555.4	8,656.5	12.4%	13	3	23%
ICHmk3	50.8	50.8	0.0	0.0%	1	0	0%
ICHmm	1,223.6	1,213.7	103.8	8.5%	1	0	0%
ICHmw3	142,516.9	135,609.8	4,404.2	3.2%	14	2	14%
ICHvk1	47,680.2	45,753.6	15,212.1	33.2%	7	7	100%
ICHwk1	104,763.5	101,379.5	18,122.4	17.9%	12	5	42%
IDFdk1	197,678.0	168,552.0	1,699.2	1.0%	12	0	0%
IDFdk2	38,471.6	27,746.3	0.0	0.0%	8	0	0%
IDFdk3	32,279.3	29,442.8	207.5	0.7%	3	0	0%
IDFmw2	131,655.4	82,797.7	68.4	0.1%	14	0	0%
IDFhx2	227,696.8	136,578.3	901.3	0.7%	19	0	0%
IDFwx	5,150.9	4,707.1	0.0	0.0%	1	0	0%
MSdm2	3,927.6	3,880.7	229.8	5.9%	2	0	0%
MSdm3	92,115.8	88,995.9	14,759.2	16.6%	12	7	58%
MSxk2	128,720.3	121,443.2	18,528.9	15.3%	11	7	64%
MSxk3	22,628.8	22,427.4	6,292.4	28.1%	3	3	100%
PPxh2	76,028.3	40,124.7	29.5	0.1%	11	0	0%
SBPSmk	12,414.2	11,438.3	1,397.2	12.2%	2	2	100%
SBSdh1	435.6	367.2	72.5	19.7%	1	1	100%
SBSdw1	6,355.4	5,562.6	905.5	16.3%	2	1	50%
SBSmm	59,320.5	57,297.7	9,511.8	16.6%	6	5	83%
<b>TOTAL</b>	<b>2,026,230.3</b>	<b>1,723,540.9</b>	<b>172,899.6</b>	<b>10.0%</b>	<b>237</b>	<b>73</b>	<b>31%</b>

<sup>a</sup> This table demonstrates the distribution of old growth forest across BECs. Only BECs with old growth forest targets are listed in this table.

### 5.1.4 Limitations

This assessment does not evaluate and address whether targets themselves are sufficient and effective at maintaining biodiversity given the ecological function and complexity of old growth forests. Numerical targets applied to BEC subzones/variants cannot assess the ecological factors (e.g., stand productivity, representation, old growth forest attributes) at the site series and stand level. The age-based definitions of old growth forest are a proxy that assumes the biodiversity and ecological characteristics of old growth stands (e.g., structure, function, composition) will be present.

In addition, the VRI may underestimate the age of old growth forest based on the methodology used for photo interpretation and data updates, possibly misidentifying these stands as mature forest. For example, the IDF/dry-belt fir ecosystems with a long history of partial cutting may not be accurately reflected in the VRI due to the variable retention left influencing how that stand is interpreted and attributed. Another potential situation where this occurs is in high elevation forests with lower productivity; these site conditions can create old growth forests that are shorter in tree height than what would be expected on higher productivity sites. When the VRI is photo-interpreted, these stands can be misclassified as younger due to this perceived stunted growth. As a result, old growth forest may be under-represented in the VRI, which may have influence on the results of this assessment. Lastly, as the reporting of old growth forest relies on the projected age of VRI polygons, there is a possibility that the amount of old growth that is greater than 250 years is underestimated, as the projected age is not reflective of the true age of the stand because it is based on the average age of a stand.

The LUPG included provisions that allow the use of younger forests to meet old growth forest targets where equal or better conservation benefits would result, and to recruit from younger stands when there is insufficient old growth forest in a BEC. These provisions may have been applied in the AUs that do not have enough old growth forest to meet the targets. Further investigation (outside the scope of this assessment) would be required to examine whether these provisions have been applied appropriately.

### 5.1.5 Summary and Observations

Old growth forest covers 11.8% (or 232,080.7 ha) of the CE-CFLB; however, in the CE-CFLB area with policy targets, 8.8% (or 172,899.6 ha) is old growth forest. Old growth forests are generally located in higher elevations in the north with some occurrence in the south and mid elevation forests along the North Thompson River valley. Of the 237 AUs in the KLRMP area, 31% (73 AUs) have sufficient old growth forest compared to the targets, which accounts for 29.2% of the CE-CFLB (502,550.2 ha) that has targets applied. There are six BEC subzone/variants where all AUs have sufficient old growth forest compared to the targets, covering 85,185.1 ha of CE-CFLB. These AUs are mostly in the ICH in the northern valleys (7 out of 48 AUs, 45,753.6 of CE-CFLB), the mid-elevation MS stands from Clearwater to Kamloops (3 out of 28 AUs, 22,427.4 ha of CE-CFLB), and SBPS (all AUs, 11,438.3 ha of CE-CFLB) BEC zones.

The remaining 164 AUs that are not meeting the old growth forest targets cover 1,220,990.7 ha of CE-CFLB. By indicator condition, 105 AUs (757,950.3 ha of CE-CFLB) have 0-30% of the target met, 16 AUs (188,859.7 ha of CE-CFLB) have 30-50% of the target met, 24 AUs (154,197.4 ha of CE-CFLB) have 50-75% of the target met, and 19 AUs (119,983.3 ha of CE-CFLB) have 75-100% of the target met. There are 46 AUs (128,415.3 ha of CE-CFLB) that have no old growth forest remaining to meet the policy targets.

The AUs with insufficient old growth forest occur across the KLRMP area in most LUs (except the Bonaparte LU) but are especially common in the dry, low elevation valley bottoms (IDF and PP BEC zones). The IDF (all subzones) has 449,824.1 ha of CE-CFLB across 57 AUs, and the PPxh2 has 40,124.7 ha of CE-CFLB across 11 AUs that are currently not meeting the targets (0%). Within these AUs, the current amount of old growth forest in the CE-CFLB is between 0 to 3,000 ha (0% to 21% old growth in the CE-CFLB). As the old growth forest policy targets for these AUs range from 9 to 19%, many are potentially at risk of not meeting targets and compromising old growth biodiversity values.

The current condition of old growth forest is the collective result of current and historic anthropogenic and natural disturbances. Recent and historical wildfires have impacted the land base and are common in ecosystems with frequent

disturbances, such as the IDF and PP BEC zones. This includes the Elephant Hill (2017), McLure (2003), and McGillvray (2003) wildfires. The Dewdrop, Louis Creek, Mad, and Mica LUs have no AUs (0%) meeting the old growth forest policy targets. These LUs have a history of wildfire, insect damage, and forest harvesting, and are occupied with multi-layered dry-belt fir forests which are difficult to assign a stand age and may have resulted in the VRI underestimating the overall age of these forests, and subsequently the amount of old growth forest currently in these landscapes.

Forest harvesting has occurred in all LUs, including salvage harvest in response to natural disturbances such as the mountain pine beetle epidemic. In general, the north consists of wetter ecosystems and steeper ground, making harvesting more operationally challenging or less desirable due to stand conditions, species profiles, and higher harvesting costs, resulting in more old growth forest compared to lower elevations and valley bottoms that are operationally easily accessible. Human disturbances are more common in the south, particularly in the dry low elevation forests because the ground is easier to operate in, is more accessible from existing road networks, and has the largest proportion of the population in the City of Kamloops.

Under the *Forest and Range Practices Act* (FRPA) results-based regime, compliance with old growth forest orders is largely dependent on professional reliance. The varying interpretation of orders and policy, as well as approaches to analyzing and tracking old growth forest management by licensees and the Province, presents challenges to accurately track and monitor old growth forest conditions relative to orders over time.

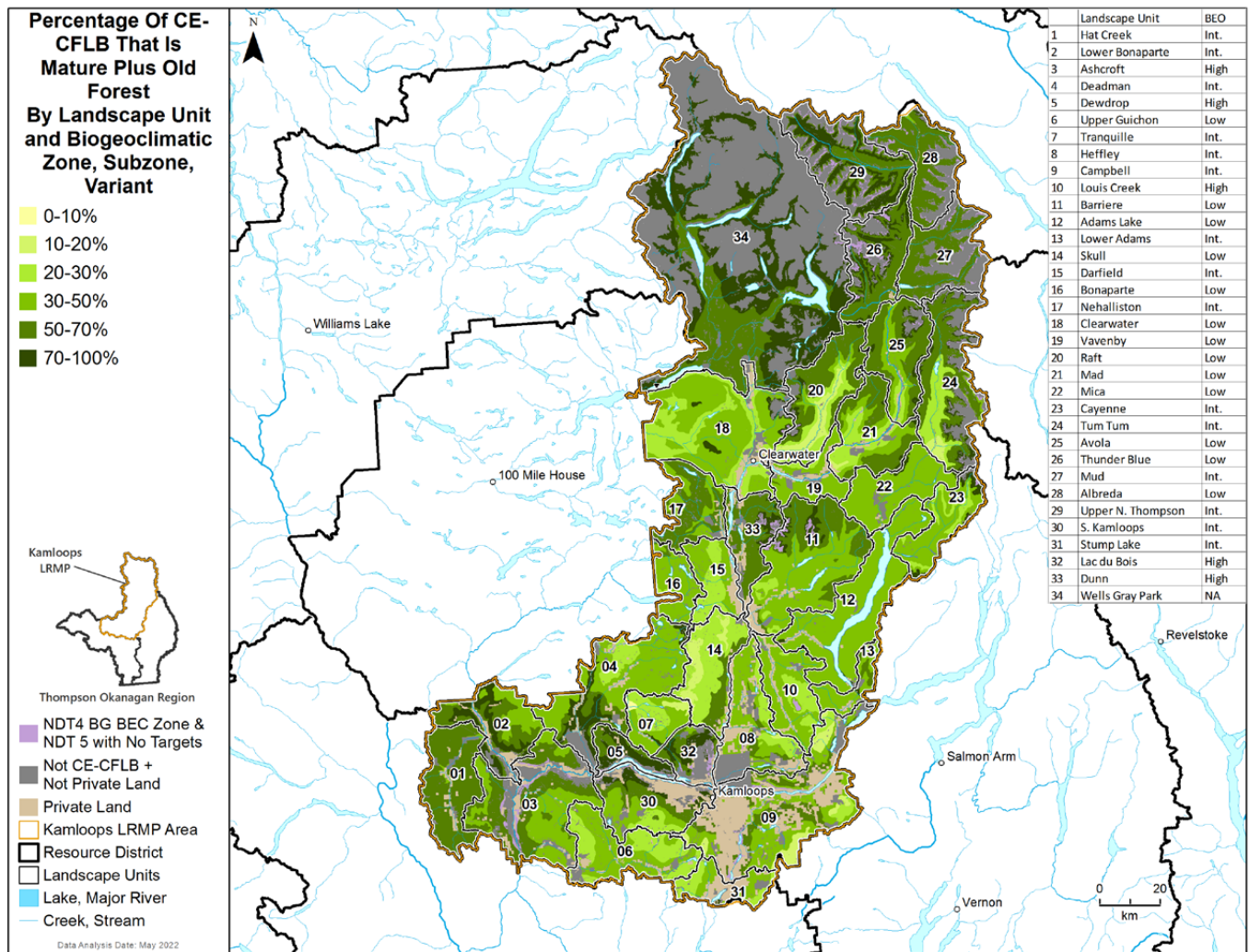
## 5.2 Amount of Mature-Plus-Old Forest

This non-spatial indicator determines the current amount of mature-plus-old forest within each AU in relation to the policy targets for mature-plus-old forest. As mature forest will become old growth forest over time, knowing the current condition of mature forest is important to determine where forest is available to recruit towards old growth forest targets, particularly where old growth forest is currently under-represented.

For the KLRMP area, the BDG specifies the policies targets to support this CE assessment. Refer to Table 6 (section 3.2.1) for the age-based definitions of mature-plus-old forest. Appendix 3 (Table 24) provides a complete listing of the mature-plus-old forest policy targets (%) applied to each AU (LU, BEO, BEC) and reported by the total amount in the CE-CFLB to determine the current condition.

### 5.2.1 Total Amount of Mature-Plus-Old Forest in the CE-CFLB

The majority of the CE-CFLB area has more than 30% identified as mature-plus-old forest, with more than 70% identified in the higher elevations to the north, near Clearwater, and in the south from Kamloops west to Cache Creek (Figure 9). There are small areas that have less than 10% mature-plus-old forest located north of Kamloops and adjacent to high elevation forests near Wells Gray Provincial Park.



**Figure 9.** Percent of Cumulative Effects Crown Forested Land Base (CE-CFLB) that is Mature-plus-Old Forest by Assessment Unit (AU) in the Kamloops Land and Resource Management Plan (KLRMP) Area.<sup>14</sup>

### 5.2.2 Overview of Assessment Units

Of the total CE-CFLB area (1,966,473.5 ha), the total amount of mature-plus-old forest is 946,165.8 ha (48.1% of the CE-CFLB); of the total CE-CFLB area with policy targets (1,723,540.9 ha), 786,346.0 ha is mature-plus-old forest which is 45.6% of the total CE-CFLB (Table 14). In contrast, 11.8% of the CE-CFLB is comprised of old growth forest. The largest differences between the amounts of old growth forest and mature-plus-old forest occurs in the High BEO, which has 48.8% mature-plus-old forest in the CE-CFLB and 8.1% old growth forest. However, similar differences occur in the Intermediate and Low BEOs, where the CE-CFLB is 47.6% and 41.3% mature-plus-old forest respectively, and 9.6% and 10.5% old growth forest.

<sup>14</sup> Wells Gray Provincial Park is included on the map as it contributes to the current condition of mature-plus-old growth forest.

**Table 14.** Amount of Mature-plus-Old Forest in the Cumulative Effects Crown Forested Land Base (CE-CFLB) by Biodiversity Emphasis Options (BEO) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

	KLRMP Area	Biodiversity Emphasis Option (BEO) designations in the CE-CFLB			
		High BEO	Intermediate BEO	Low BEO	No BEO <sup>a</sup>
# of Landscape Units (LUs)	34	5	15	13	1
Gross Area (ha) <sup>b</sup>	2,769,416.0	273,584.5	1,023,722.7	953,333.8	518,774.9
Total CE-CFLB Area (ha)	1,966,473.5	203,003.5	727,588.4	827,124.9	208,756.7
CE-CFLB Area (ha) with Targets	1,723,540.9	195,202.4	711,858.4	816,480.1	0.0
Mature-plus-Old Forest Area in CE-CFLB (ha)	946,165.8	98,982.4	346,041.9	341,321.7	159,819.9
% of Mature-plus-Old in CE-CFLB	48.1%	48.8%	47.6%	41.3%	76.6%

<sup>a</sup> No BEO is established in the Wells Gray Provincial Park therefore no policy targets are assigned. This is provided for context only.

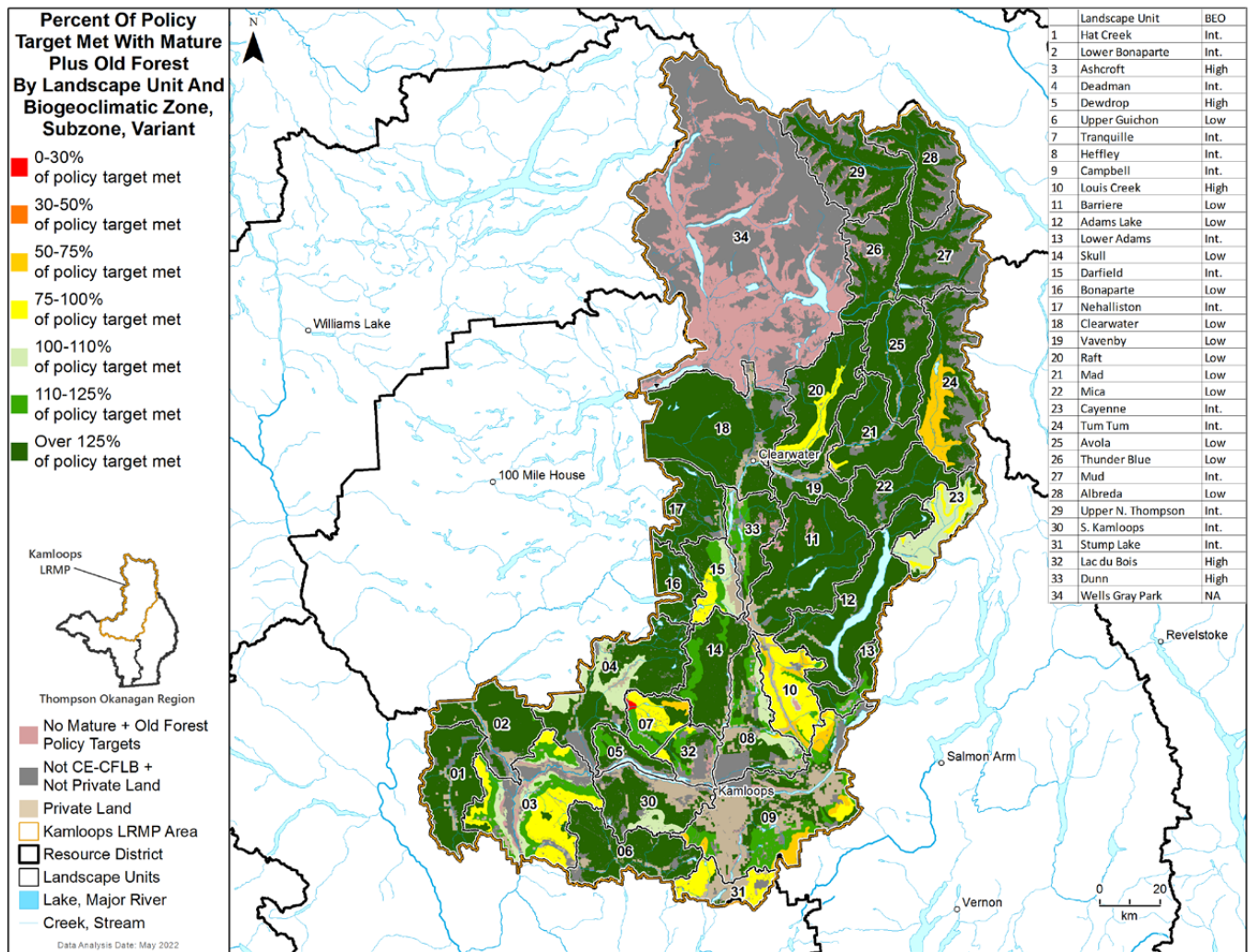
<sup>b</sup> The gross area is provided for information and context only.

### 5.2.3 Current Condition of Mature-Plus-Old Forest Relative to the Policy Targets

The current condition of mature-plus-old growth forest is one of four assessment indicators, and the following results are presented in the colour scheme and categories as a percentage of the policy target met (Figure 10), as described in section 4. In the KLRMP area, all LUs (33 LUs total) have legal OGMAs. The AUs with less than 100% of the policy target met are considered to be in deficit of mature-plus-old growth forest.

In general, AUs are meeting the mature-plus-old forest policy targets across the CE-CFLB (Figure 10, Table 16). With the exception of LUs in that southern portion of the KLRMP area, most LUs have more than 125% mature-plus-old forest compared to the policy targets (see Appendix 3, Table 24). The Louis Creek and Ashcroft LUs are showing the largest areas not meeting the targets, with the majority of this area containing 75–100% mature-plus-old forest compared to the policy targets. Wells Gray Provincial Park shows no data because it has no BEO assigned and therefore no policy targets are defined.





**Figure 10.** Current Condition of Mature-plus-Old Forest as a Percent of the Policy Target Met in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.<sup>15</sup>

<sup>15</sup> Any AUs with less than 100% of the target met are considered to be in deficit of mature-plus-old forest.

There are 36 AUs (191,195.9 ha of CE-CFLB) with insufficient mature-plus-old forest to meet the policy targets (Table 15). Approximately half of these AUs are close to meeting targets (75–100% of the target met) and represent most of the CE-CFLB of the AUs not meeting the targets (144,639.3 ha).

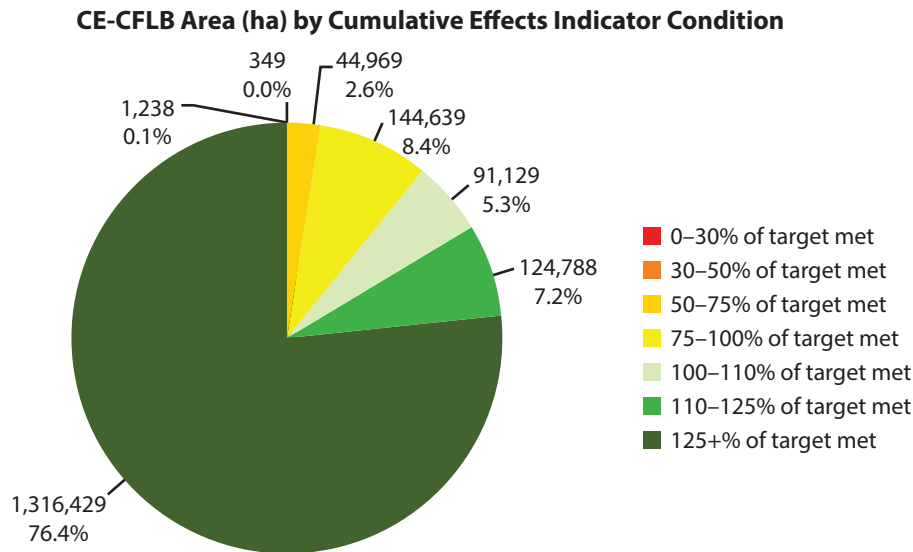
Of the remaining 201 AUs, the majority (172 AUs) have greater than 125% of the target met (see Appendix 3, Table 24). On average, AUs have more than 256% of the target mature-plus-old forest amount.

**Table 15.** Assessment Units (AUs) with 0-125% of Mature-plus-Old Forest Compared to Policy Targets in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Column Calculations				A	B	C = B/A	D	E = C/D
Indicator Condition	Assessment Unit (AU)			LU-BEC Area in CE-CFLB (ha)	Existing Mature-plus-Old Forest Area in AU (ha)	Existing Mature-plus-Old Forest in AU (%)	Mature-plus-Old Forest Policy Target (%)	% of Policy Target Met in AU
	BEC	LU	BEO					
0–30%	PPxh2	Deadman	Int.	48.9	0.2	0.3%	34%	1.0%
	ESSFwcw	Dunn	High	16.3	0.7	4.6%	54%	8.5%
	IDFxh2	Barriere	Low	95.4	3.3	3.5%	17%	20.3%
	IDFdk3	Tranquille	Int.	1,077.2	88.4	8.2%	34%	24.1%
30–50%	MSdm2	Stump Lake	Int.	287.9	26.8	9.3%	26%	35.8%
	IDFxh2	Louis Creek	High	10.6	2.3	21.5%	51%	42.2%
	ICHmk3	Clearwater	Low	50.8	3.3	6.5%	15%	43.5%
50–75%	IDFmw2	Heffley	Int.	608.2	110.1	18.1%	34%	53.3%
	ICHmk2	Campbell	Int.	4,683.9	625.7	13.4%	23%	58.1%
	MSxk2	Campbell	Int.	5,170.2	795.2	15.4%	26%	59.2%
	ICHmw3	Tum Tum	Int.	3,714.0	682.1	18.4%	31%	59.2%
	MSdm2	Campbell	Int.	3,592.8	576.0	16.0%	26%	61.7%
	ESSFdc2	Campbell	Int.	516.6	82.4	16.0%	23%	69.4%
	ESSFdc3	Campbell	Int.	1,050.1	168.6	16.1%	23%	69.8%
	ESSFdc3	Tranquille	Int.	2,443.8	394.4	16.1%	23%	70.2%
	IDFmw2	Louis Creek	High	6,635.7	2,447.0	36.9%	51%	72.3%
	ICHwk1	Tum Tum	Int.	16,554.1	4,146.8	25.0%	34%	73.7%
75–100%	ESSFdc3	Louis Creek	High	11,183.8	2,869.3	25.7%	34%	75.5%
	ICHmk2	Heffley	Int.	657.6	115.9	17.6%	23%	76.6%
	ICHwk1	Cayenne	Int.	7,341.4	1,985.1	27.0%	34%	79.5%
	MSxk2	Ashcroft	High	15,168.7	4,762.8	31.4%	39%	80.5%
	MSdm3	Louis Creek	High	12,436.1	4,015.9	32.3%	39%	82.8%
	MSxk2	Stump Lake	Int.	10,289.4	2,258.2	21.9%	26%	84.4%
	IDFmw2	Mad	Low	1,330.4	192.3	14.5%	17%	85.0%
	IDFdk1	Ashcroft	High	26,212.4	11,751.2	44.8%	51%	87.9%
	ICHmw3	Campbell	Int.	1,235.7	341.3	27.6%	31%	89.1%
	IDFdk2	Louis Creek	High	9,859.3	4,535.1	46.0%	51%	90.2%
	ICHdw3	Raft	Low	10,440.9	1,324.7	12.7%	14%	90.6%
	MSdm3	Campbell	Int.	5,022.2	1,223.8	24.4%	26%	93.7%

Column Calculations				A	B	C = B/A	D	E = C/D
Indicator Condition	Assessment Unit (AU)			LU-BEC Area in CE-CFLB (ha)	Existing Mature-plus-Old Forest Area in AU (ha)	Existing Mature-plus-Old Forest in AU (%)	Mature-plus-Old Forest Policy Target (%)	% of Policy Target Met in AU
	BEC	LU	BEO					
	MSdm3	Darfield	Int.	8,607.4	2,114.4	24.6%	26%	94.5%
	IDFdk1	Stump Lake	Int.	9,805.7	3,177.3	32.4%	34%	95.3%
	IDFmw2	Raft	Low	1,027.2	166.5	16.2%	17%	95.3%
	MSxk2	Tranquille	Int.	9,677.0	2,456.4	25.4%	26%	97.6%
	IDFdk1	Lac du Bois	High	1,968.2	991.9	50.4%	51%	98.8%
	MSdm3	Lac du Bois	High	854.9	330.4	38.7%	39%	99.1%
	IDFdk2	Tranquille	Int.	1,521.0	515.9	33.9%	34%	99.8%
100–110%	IDFdk3	Deadman	Int.	22,261.7	7,764.0	34.9%	34%	102.6%
	MSxk2	S. Kamloops	Int.	7,278.2	1,963.5	27.0%	26%	103.8%
	MSdm3	Heffley	Int.	10,425.5	2,823.1	27.1%	26%	104.1%
	ICHmw3	Cayenne	Int.	16,164.4	5,228.5	32.3%	31%	104.3%
	ESSFdcw	Louis Creek	High	545.4	239.2	43.9%	42%	104.4%
	ESSFxc2	Heffley	Int.	98.3	24.0	24.4%	23%	105.9%
	IDFxh2	Darfield	Int.	172.7	62.4	36.1%	34%	106.3%
	ESSFwc2	Cayenne	Int.	14,746.7	5,648.4	38.3%	36%	106.4%
	IDFmw2	Darfield	Int.	6,239.1	2,274.7	36.5%	34%	107.2%
	PPxh2	Ashcroft	High	13,196.6	7,350.5	55.7%	51%	109.2%
110–125%	ICHmk2	Darfield	Int.	7,121.8	1,805.0	25.3%	23%	110.2%
	ICHmk2	Louis Creek	High	4,495.1	1,685.6	37.5%	34%	110.3%
	ESSFdc3	Vavenby	Low	147.5	22.8	15.4%	14%	110.3%
	IDFmw2	Dunn	High	10,686.3	6,067.3	56.8%	51%	111.3%
	IDFdk2	Heffley	Int.	5,109.8	1,970.0	38.6%	34%	113.4%
	IDFdk2	Lac du Bois	High	2,927.8	1,709.2	58.4%	51%	114.5%
	IDFmw2	Lower Adams	Int.	4,759.0	1,874.3	39.4%	34%	115.8%
	ESSFxc2	Stump Lake	Int.	117.9	31.6	26.8%	23%	116.6%
	ESSFxc2	Lower Bonaparte	Int.	227.8	61.2	26.9%	23%	116.8%
	IDFmw2	Campbell	Int.	6,979.8	2,772.7	39.7%	34%	116.8%
	IDFxh2	Ashcroft	High	25,538.4	15,244.2	59.7%	51%	117.0%
	IDFdk1	Tranquille	Int.	9,978.0	4,010.4	40.2%	34%	118.2%
	ESSFdc3	Skull	Low	8,507.2	1,413.8	16.6%	14%	118.7%
	PPxh2	Heffley	Int.	2,782.4	1,128.3	40.6%	34%	119.3%
	IDFdk1	Campbell	Int.	22,355.9	9,080.1	40.6%	34%	119.5%
	PPxh2	Lac du Bois	High	2,226.4	1,378.6	61.9%	51%	121.4%
	ICHmk2	Skull	Low	2,236.6	382.0	17.1%	14%	122.0%
ESSFvcw	Tum Tum	Int.	1,652.1	728.0	44.1%	36%	122.4%	
IDFdk1	Dewdrop	High	6,938.1	4,357.2	62.8%	51%	123.1%	

The majority (85%) of the AUs have sufficient mature-plus-old forest compared to the policy targets (Figure 11). Of the CE-CFLB with targets, 88.9% (1,532,345.1 ha) exceeded the policy targets with more mature-plus-old forest than identified in the targets. The remaining 191,195.9 ha (11.1%) of CE-CFLB has not met the targets, the majority of which have 75-100% of the target met. There are four AUs in the 0-30%, three AUs in the 30-50%, 10 AUs in the 50-75%, and 19 AUs in the 75-100% target met categories.



**Figure 11.** Amount of Cumulative Effects Crown Forested Land Base (CE-CFLB) in each Cumulative Effects Indicator Condition as a Percentage of Mature-plus-Old Forest Policy Targets Met in the Kamloops Land and Resource Management Plan (KLRMP) Area.

**5.2.3.1 Landscape Units and Mature-Plus-Old Forest Distribution Compared to Policy Targets**

This section provides an overview of the assessment results summarized by LU. Of the 33 LUs with policy targets, approximately half (16 LUs) have at least one AU with insufficient mature-plus-old forest (Table 16), whereas 17 LUs have all AUs meeting the policy targets. This is an improvement from the old growth forest indicator where the Bonaparte was the only LU with all AUs meeting the old growth forest target. This means that 16 LUs have insufficient old forest to meet the targets but have sufficient mature-plus-old forest targets to meet the policy targets. There are four LUs (Louis Creek, Campbell, Stump Lake, and Tranquille) that have half or less of their AUs meeting the mature-plus-old forest policy targets.

**Table 16.** Summary of Assessment Units (AU) by Landscape Unit (LU) that are Meeting Policy Targets in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Landscape Unit (LU)	BEO	Total # of Assessment Units (AUs)	# of AUs Meeting Mature-plus-Old Forest Policy Targets	% of AUs Meeting Mature-plus-Old Forest Policy Targets <sup>a</sup>
Albreda	Low	8	8	100%
Ashcroft	High	7	5	71%
Avola	Low	6	6	100%
Barriere	Low	12	11	92%
Bonaparte	Low	6	6	100%
Campbell	Int.	13	6	46%
Cayenne	Int.	5	4	80%
Clearwater	Low	10	9	90%
Darfield	Int.	6	5	83%
Deadman	Int.	9	8	89%
Dewdrop	High	3	3	100%
Dunn	High	8	7	88%
Hat Creek	Int.	7	7	100%
Heffley	Int.	10	8	80%
Lac du Bois	High	5	3	60%
Louis Creek	High	7	2	29%
Lower Adams	Int.	6	6	100%
Lower Bonaparte	Int.	9	9	100%
Mad	Low	6	5	83%
Mica	Low	5	5	100%
Mud	Int.	5	5	100%
Nehalliston	Int.	5	5	100%
Raft	Low	9	7	78%
S. Kamloops	Int.	5	5	100%
Skull	Low	9	9	100%
Stump Lake	Int.	6	3	50%
Thunder Blue	Low	5	5	100%
Tranquille	Int.	8	4	50%
Tum Tum	Int.	8	6	75%
Upper Guichon	Low	4	4	100%
Upper N. Thompson	Int.	4	4	100%
Vavenby	Low	9	9	100%
<b>Total</b>	-	<b>237</b>	<b>201</b>	<b>85%</b>

<sup>a</sup> AUs with less than 100% of the policy target are considered to be in deficit of mature-plus-old growth forest.

### 5.2.3.2 Biodiversity Emphasis Option and Mature-Plus-Old Forest Distribution Compared to Policy Targets

This section provides an overview of the assessment results summarized by the BEO assigned to LUs. The 36 AUs that have insufficient mature-plus-old forest to meet the policy targets are distributed across all BEO designations (Table 17). The High BEO has the fewest number of AUs meeting the mature-plus-old policy targets, primarily in the Louis Creek LU which has only 29% of its respective units meeting the policy targets. This is an improvement from the old forest indicator, especially in the High BEO where only six AUs are meeting the old growth forest targets to 20 AUs meeting the mature-plus-old forest policy targets, however there is a general improvement in all BEO designations.

**Table 17.** Summary of Assessment Units (AU) by Biodiversity Emphasis Option (BEO) that are Meeting Policy Targets in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

	Biodiversity Emphasis Options (BEOs) in the CE-CFLB			
	High BEO	Intermediate BEO	Low BEO	Total
# Assessment Units (AUs) in BEO	30	106	101	237
# of AUs Meeting Policy Targets	20	85	96	201
% of AUs Meeting Policy Targets	67%	80%	95%	85%
CE-CFLB Area (ha) in AUs with Policy Targets	195,202.4	711,858.4	816,480.1	1,723,540.9
CE-CFLB Area (ha) in AUs meeting Policy Targets	110,856.5	617,953.2	803,535.4	1,532,345.1

### 5.2.3.2 Biogeoclimatic Ecosystem Classification and Mature-plus-Old Forest Distribution Compared to Policy Targets

This section provides an overview of the assessment results summarized by BEC. When considering old growth forest only, there are six BEC subzones/variants that meet the old growth forest targets. When including mature seral forest, there are 17 out of 34 BEC subzone/variants that meet the mature-plus-old forest policy targets (Table 18). There are three BEC subzone/variants that have no AUs meeting the targets: ESSFdc2 (516.6 ha of CE-CFLB), ICHmk3 (50.8 ha of CE-CFLB), and MSdm2 (3,880.7 ha of CE-CFLB); these AUs also did not have sufficient old growth forest to meet the targets.

While there was more mature plus old than old forest alone in all BEC subzone/variants, the largest differences were in the ESSF and IDF BEC zones. The ESSF has two out of 12 subzone/variants meeting the old growth forest targets (xc3 and xcw), whereas nine subzone/variants are meeting the mature-plus-old forest targets. The remaining areas are either close to meeting the targets (between 80% and 93%) or had no AUs meeting the targets (dc2). The IDF has no subzone/variants meeting the old growth forest targets and one subzone/variant with all AUs meeting the mature-plus-old targets (xw), however the remaining subzone/variants are close to meeting the targets (between 67% and 89%).

**Table 18.** Summary of Assessment Units (AU) by Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant that are Meeting Policy Targets in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

BEC Variant <sup>a</sup>	Total Area in BEC (ha)	Total CE-CFLB Area (ha)	Existing Mature-plus-Old Forest in CE-CFLB with Targets (ha)	Existing Mature-plus-Old Forest in CE-CFLB with Targets(%)	# Assessment Units (AUs)	# of AUs Meeting Policy Target	% of AUs Meeting Policy Targets
ESSFdc2	518.5	516.6	82.4	16.0%	1	0	0%
ESSFdc3	90,569.1	88,482.5	31,699.1	35.8%	15	12	80%
ESSFdcw	8,206.5	7,936.7	5,192.3	65.4%	7	7	100%
ESSFmm1	1,073.7	1,044.6	662.6	63.4%	1	1	100%
ESSFmmw	861.8	559.9	422.2	75.4%	1	1	100%
ESSFvc	2,159.0	1,887.6	1,273.2	67.4%	1	1	100%
ESSFvcw	2,313.8	1,652.1	728.0	44.1%	1	1	100%
ESSFwc2	290,241.5	281,285.5	145,477.5	51.7%	15	15	100%
ESSFwcw	91,709.8	70,241.7	50,438.1	71.8%	15	14	93%
ESSFxc2	24,392.5	23,435.5	10,252.0	43.7%	11	11	100%
ESSFxc3	3,794.7	3,712.7	2,140.5	57.7%	2	2	100%
ESSFxcw	1,623.7	1,486.0	867.1	58.4%	2	2	100%
ICHdw3	106,134.1	86,375.0	27,505.8	31.8%	10	9	90%
ICHmk2	71,517.8	69,555.4	23,406.5	33.7%	13	11	85%
ICHmk3	50.8	50.8	3.3	6.5%	1	0	0%
ICHmm	1,223.6	1,213.7	683.7	56.3%	1	1	100%
ICHmw3	142,516.9	135,609.8	49,830.9	36.7%	14	12	86%
ICHvk1	47,680.2	45,753.6	29,363.8	64.2%	7	7	100%
ICHwk1	104,763.5	101,379.5	49,369.2	48.7%	12	10	83%
IDFdk1	197,678.0	168,552.0	77,430.4	45.9%	12	9	75%
IDFdk2	38,471.6	27,746.3	13,183.5	47.5%	8	6	75%
IDFdk3	32,279.3	29,442.8	10,878.6	36.9%	3	2	67%
IDFmw2	131,655.4	82,797.7	34,276.1	41.4%	14	10	71%
IDFvh2	227,696.8	136,578.3	84,631.4	62.0%	19	17	89%
IDFvw	5,150.9	4,707.1	3,757.0	79.8%	1	1	100%
MSdm2	3,927.6	3,880.7	602.8	15.5%	2	0	0%
MSdm3	92,115.8	88,995.9	27,759.8	31.2%	12	8	67%
MSxk2	128,720.3	121,443.2	38,115.9	31.4%	11	7	64%
MSxk3	22,628.8	22,427.4	15,209.9	67.8%	3	3	100%
PPvh2	76,028.3	40,124.7	22,991.3	57.3%	11	10	91%
SBPsmk	12,414.2	11,438.3	3,222.2	28.2%	2	2	100%
SBSdh1	435.6	367.2	111.6	30.4%	1	1	100%
SBSdw1	6,355.4	5,562.6	3,422.8	61.5%	2	2	100%
SBSmm	59,320.5	57,297.7	21,354.3	37.3%	6	6	100%
<b>TOTAL</b>	<b>2,026,230.3</b>	<b>1,723,540.9</b>	<b>786,346.0</b>	<b>45.6%</b>	<b>237</b>	<b>201</b>	<b>85%</b>

<sup>a</sup> This table demonstrates the distribution of old growth forest across BECs. Only BECs with old growth forest targets are listed in this table.

### 5.2.4 Limitations

The limitations associated with the mature-plus-old forest indicator are largely a result of the interpretation of old growth forest management policy, as opposed to limitations with the source data itself (as seen with the old growth forest indicator). Much of the province does not have legally established mature-plus-old forest retention targets, and some areas do not have specific targets for mature forest retention (e.g., the percent target retention is the same for old growth forest as it is for mature-plus-old), therefore mature forest is not directly being managed for in the current policy framework.

### 5.2.5 Summary and Observations

Overall, 48.1% (946,165.8 ha) of the CE-CFLB is comprised of mature-plus-old forest (of the total CE-CFLB with policy targets, 786,346.0 ha or 45.6% is mature-plus-old forest), with high proportions of mature and old forest in higher elevations, along the western plateau, and the southwest. There were 128 more AUs meeting mature-plus-old forest policy targets than AUs meeting old growth forest targets. At the AU scale, including mature forest in the current condition assessment (mature-plus-old forest) increased the percentage of AUs meeting targets from 31% (73 of 237 AUs) to 85% (201 of 237 AUs).

At the LU scale, including mature forest increased the percentage of the CE-CFLB meeting targets from 29.2% (502,550.2 ha of CE-CFLB) to 88.9% (1,532,345.1 ha of CE-CFLB). There are 17 out of 34 BEC subzones that meet the mature-plus-old forest policy targets. There are three BEC subzone/variants that have no AUs meeting the policy targets: ESSFdc2, ICHmk3, and MSdm2, however the total CE-CFLB associated with these AUs is relatively small (4,448.1 ha) compared to the CE-CFLB of the KLRMP area.

Like the old growth forest indicator, the AUs furthest from meeting the mature-plus-old forest policy targets are in the dry lower elevation ecosystems that have a long land use history from both human (e.g., forestry, mining, farming, land conversion) and natural (e.g., pest, wildfire) disturbances. In the south, human disturbances are more common as the ground is easier to operate in and is more accessible from existing road networks. In addition, dry IDF ecosystems tend to be more open fir stands interspersed with grasslands or multi-layered dry belt fir forests, both of which tend to be difficult to assign a single stand age which may have resulted in the VRI underestimating the overall age of these forests.



## 5.3 Incursions into Legal Old Growth Management Areas

This assessment compares the area of anthropogenic (human-caused) disturbance footprint (i.e., incursions) in OGMA relative to allowable incursions specified in the applicable order, policy, or guidance. Incursions are defined as alterations to OGMA caused by resource development activities that permanently alter the forested land base or that convert forests to an early seral stage (i.e., less than 40 years old). Resource development activities include permitted forestry activities (i.e., cutblocks, roads), non-forestry-related activities (e.g., pipelines, oil and gas, mining, fire guards, urban development, land tenures), and other human use features (i.e., recreation sites and trails).

In this assessment, disturbances only include active, initiated, tenured, and completed developments, and does not consider proposed or anticipated projects and activities. The exception to this is roads due to variation in accuracy of spatial road data and available datasets. Incursions into OGMA were determined using the CE Human Disturbance Layer (2019) and the CE Integrated Roads Layer (2019). Some source data does not include a disturbance date; therefore, it was not possible to remove disturbances that occurred prior to OGMA establishment. As a result, all disturbances were included in this assessment with the exception of historical cutblocks (i.e., 20 years and older). **Consequently, this may skew the assessment results to show incursions that were known and accepted at time of OGMA establishment. At the very least, all OGMA incursions beyond the threshold limits should trigger further inquiry.**

It is common for OGMA to have historic anthropogenic incursions and natural disturbances included within the OGMA boundary at the time of establishment. This was dependent on the process undertaken at the time of OGMA development. Natural disturbances such as fires, insects, pathogens, and wind will alter forest stand composition within OGMA over time. **At this time, the OGMA incursions assessment did not consider natural disturbances (e.g., wildfires or insect outbreaks) that were not included in the VRI at the time of data extraction from the BCGW (2019).** Refer to section 4.3.1 for more information regarding how disturbances were considered in this assessment.

For the KLRMP area, allowable OGMA incursions and amendments are managed through the [Order Establishing Old Growth Management Objectives for the Kamloops Land and Resource Management Plan Area](#) (2013). **This order provides objectives that allow incursions for very specific reasons up to 2.0 hectares or 10% of each individual OGMA polygon, whichever is less, over a 20-year time-period.** Any incursion beyond this threshold would likely result in all or part of the OGMA being replaced with an ecologically suitable area. To date, OGMA in the KLRMP area have been managed on an individual basis.

The OGMA incursion assessment uses the total OGMA area (ha) to determine if the allowable incursion threshold has been exceeded within the OGMA. The CE-CFLB area within OGMA and the associated incurred area is provided for information and consistency across the four CE indicators. Appendix 3 (Table 25) provides a complete listing of all OGMA incursion types reported by individual OGMA.

### 5.3.1 Overview of OGMA Incursions

The KLRMP area has legally established OGMA that were applied in this assessment. The legal old growth order (2013) sets the allowable incursion limits of **less than 2.0 hectares or 10% of each individual OGMA polygon, whichever is less, over a 20-year time period.** Any incursions beyond this threshold would likely require an equal or better ecologically suitable replacement to be identified. At the very least, all OGMA incursions beyond the threshold limits should trigger further inquiry.

**The total incurred percentage is calculated using total OGMA area (ha) and total OGMA incurred area** to determine if the allowable incursion threshold has been exceeded within the OGMA. **The total incurred percentage is intended to reflect the magnitude or scale of anthropogenic disturbance within OGMA.** It is presented to demonstrate the importance of the area incurred relative to the OGMA size. The total incurred percentage reflects potential impacts to the old growth forest biodiversity within the established OGMA. The CE-CFLB area within OGMA and the associated incurred area is also provided for information and consistency across the four CE indicators.

### 5.3.2 Total Amount of Incursions into Legal OGMA's

There are 3,053 legal OGMA's across all LUs with a total OGMA area of 201,199.3 ha and a CE-CFLB of 199,539.3 ha. In the KLRMP area, a single OGMA can overlap multiple LUs (see Table 19 footnotes). Without comparison to the regional guidance allowable incursion thresholds, all LU's have OGMA's with incursions for a total of 1,572 OGMA's (51% of all OGMA's) with some degree of disturbance (Table 19). The total area of all incursions in OGMA's is 2,501.6 ha which is 1.2% of the total OGMA area. There are eight LUs with more than 70% of OGMA's with incursions: Upper Guichon (78%), Lac du Bois (75%), Lower Adams (75%), Campbell (74%), Stump Lake (74%), Vavenby (72%), Louis Creek (71%), and South Kamloops (71%). An additional 12 LUs have more than 50% of OGMA's with incursions. There are nine LUs with more than 100 ha of incurred OGMA area: Louis Creek (226.4 ha), Barriere (193.2 ha), Adams Lake (182.1 ha), Campbell (144.6 ha), Ashcroft (141.0 ha), Clearwater (140.8 ha), Deadman (135.4 ha), Upper Guichon (124.5 ha), and Raft (106.69 ha).

**Table 19.** Summary of All Incursions in Legal Old Growth Management Areas (OGMA's) by Landscape Unit (LU) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Landscape Unit	Summary of Incursions			Summary by Total OGMA Area			Summary by CE-CFLB Area		
	Total # of OGMA's <sup>a</sup>	Total # of OGMA's with Incursions <sup>b</sup>	% of OGMA's with Incursions	Total OGMA Area in LU (ha) <sup>c</sup>	Total Incurred OGMA Area (ha)	% of Incurred OGMA Area (%)	Total OGMA CE-CFLB Area (ha)	Total Incurred OGMA CE-CFLB Area (ha)	% of Incurred OGMA Area in CE-CFLB (%)
Adams Lake	209	145	69%	11,761.0	182.1	1.5%	11,746.1	181.6	1.5%
Albreda	143	38	27%	5,335.9	44.9	0.8%	5,129.8	44.4	0.9%
Ashcroft	86	50	58%	13,369.2	141.0	1.1%	13,341.3	139.5	1.0%
Avola	144	60	42%	8,725.3	70.7	0.8%	8,567.4	66.8	0.8%
Barriere	288	156	54%	13,950.7	193.2	1.4%	13,931.9	193.0	1.4%
Bonaparte	58	22	38%	1,575.0	36.0	2.3%	1,567.6	35.3	2.3%
Campbell	82	61	74%	8,083.8	144.6	1.8%	8,015.2	143.0	1.8%
Cayenne	70	29	41%	5,569.5	33.0	0.6%	5,525.1	32.8	0.6%
Clearwater	240	122	51%	12,671.4	140.8	1.1%	12,655.8	139.8	1.1%
Darfield	63	40	63%	3,305.2	48.1	1.5%	3,271.2	47.2	1.4%
Deadman	74	49	66%	8,290.8	135.4	1.6%	8,128.5	135.2	1.7%
Dewdrop	9	5	56%	2,594.3	6.2	0.2%	2,568.7	6.2	0.2%
Dunn	51	22	43%	3,326.3	18.4	0.6%	3,312.2	15.4	0.5%
Hat Creek	69	22	32%	6,352.0	27.2	0.4%	6,339.9	26.6	0.4%
Heffley	78	48	62%	4,541.1	75.0	1.7%	4,520.9	74.4	1.6%
Lac du Bois	12	9	75%	624.8	8.2	1.3%	624.4	8.2	1.3%
Louis Creek	77	55	71%	5,988.3	226.4	3.8%	5,974.5	225.9	3.8%
Lower Adams	81	61	75%	3,268.6	67.1	2.1%	3,266.9	67.1	2.1%
Lower Bonaparte	33	19	58%	3,504.7	53.7	1.5%	3,500.6	53.3	1.5%
Mad	88	48	55%	7,775.8	70.1	0.9%	7,769.9	70.0	0.9%
Mica	83	53	64%	5,914.5	59.3	1.0%	5,908.6	59.3	1.0%
Mud	95	24	25%	5,924.1	21.3	0.4%	5,760.1	19.0	0.3%
Nehalliston	49	24	49%	3,074.9	22.2	0.7%	3,074.1	22.2	0.7%
Raft	147	71	48%	10,723.0	106.9	1.0%	10,631.9	105.2	1.0%

Landscape Unit	Summary of Incursions			Summary by Total OGMA Area			Summary by CE-CFLB Area		
	Total # of OGMA <sup>a</sup>	Total # of OGMA <sup>a</sup> with Incursions <sup>b</sup>	% of OGMA <sup>a</sup> with Incursions	Total OGMA Area in LU (ha) <sup>c</sup>	Total Incurred OGMA Area (ha)	% of Incurred OGMA Area (%)	Total OGMA CE-CFLB Area (ha)	Total Incurred OGMA CE-CFLB Area (ha)	% of Incurred OGMA Area in CE-CFLB (%)
S. Kamloops	58	41	71%	4,513.7	79.8	1.8%	4,501.4	79.6	1.8%
Skull	71	48	68%	4,387.8	54.8	1.2%	4,361.0	53.6	1.2%
Stump Lake	61	45	74%	1,963.3	53.3	2.7%	1,959.1	53.2	2.7%
Thunder Blue	144	43	30%	9,539.2	82.2	0.9%	9,398.8	77.8	0.8%
Tranquille	68	34	50%	3,137.2	27.4	0.9%	3,135.8	27.1	0.9%
Tum Tum	177	48	27%	8,179.7	43.9	0.5%	8,011.4	41.7	0.5%
Upper Guichon	82	64	78%	3,986.5	124.5	3.1%	3,936.9	120.9	3.1%
Upper N. Thompson	121	30	25%	6,205.6	45.7	0.7%	6,076.4	45.5	0.7%
Vavenby	58	42	72%	3,035.7	58.0	1.9%	3,026.4	57.9	1.9%
<b>TOTAL</b>	<b>3,053</b>	<b>1,572</b>	<b>51%</b>	<b>201,199.3</b>	<b>2,501.6</b>	<b>1.2%</b>	<b>199,539.3</b>	<b>2,468.6</b>	<b>1.2%</b>

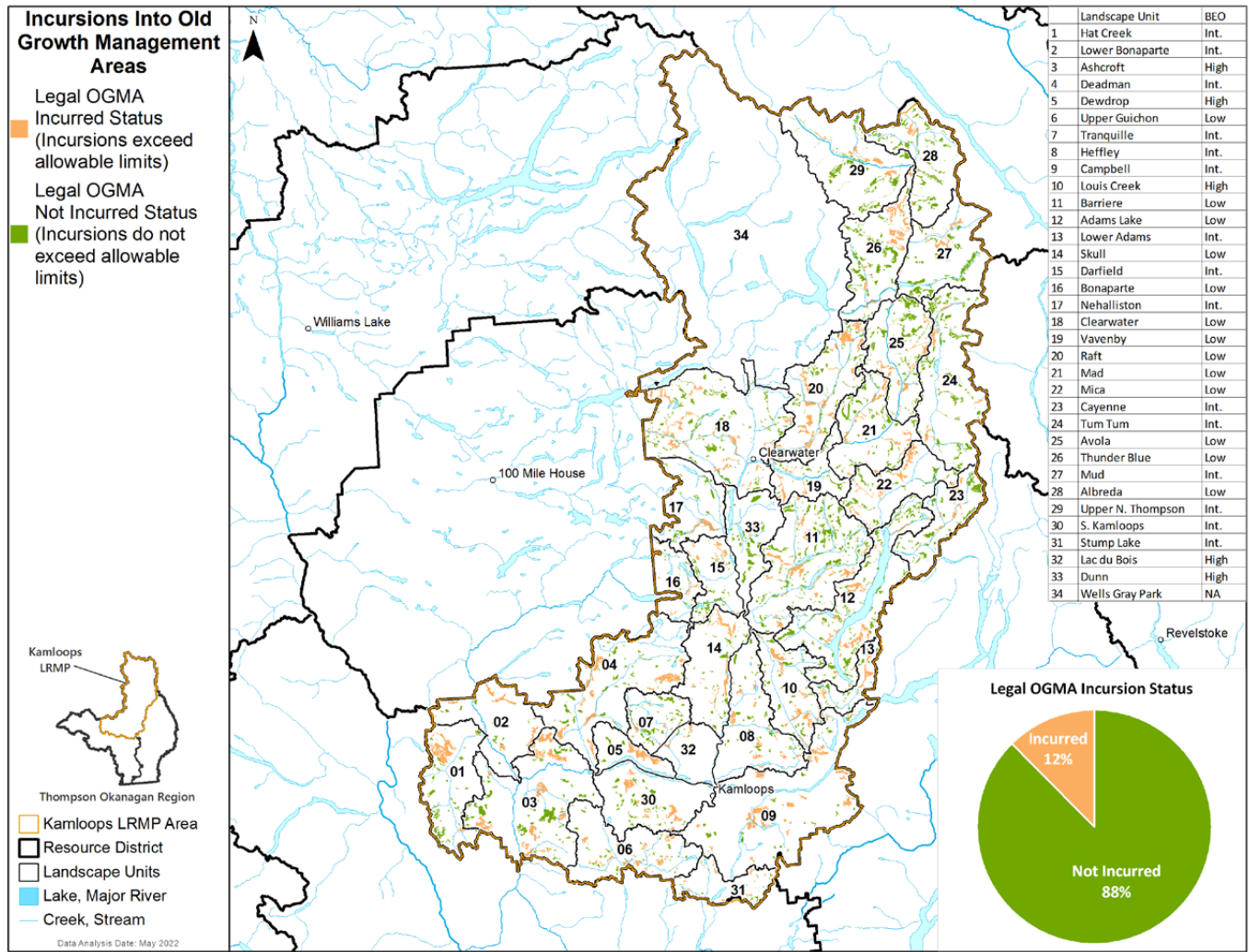
<sup>a</sup> There are OGMA<sup>a</sup>s that span multiple LUs. Therefore, under the “Summary of Incursions” columns the count of OGMA<sup>a</sup>s is independent of the others in such a way that they do not sum together to equal the total number of OGMA<sup>a</sup>s shown for the KLRMP area.

<sup>b</sup> Includes all incursions into the OGMA, regardless of any thresholds defined in legal orders or regional policies.

<sup>c</sup> Slivers less than 0.01 ha have not been included in this summary.

### 5.3.3 Incursions into Legal OGMA Compared to Allowable Thresholds in the Legal Order

Comparing the incursions into OGMA against the allowable thresholds in the legal order resulted in 12% of all legal OGMA (379 out of 3,053 total OGMA) identified as disturbed beyond the allowable threshold limits (Figure 12, Table 20).



**Figure 12.** Incursions in Legal Old Growth Management Areas (OGMA) that Exceed the Allowable Incursion Threshold in the Kamloops Land and Resource Management Plan (KLRMP) Area.

There are 379 OGMA's across all LUs with incursions that exceed the allowable limits as per the KLRMP order (Table 20). The total area of OGMA's that are in an incurred status (e.g., above allowable threshold) is 89,218.2 ha with the total incursion footprint in these OGMA's of 1,946.3 ha (2.2% of the total OGMA area). Barriere LU has the largest number of occurrences of incurred OGMA's (33 incurred OGMA's with a total incurred area of 144.6 ha); however, the Louis Creek LU has the largest total OGMA incurred area (211.2 ha). There are eight LUs with more than 100 ha of total incurred OGMA area: Louis Creek (211.2 ha), Barriere (144.6 ha), Campbell (128.0 ha), Ashcroft (124.4 ha), Deadman (124.1 ha), Adams Lake (116.1 ha), Upper Guichon (101.8 ha), and Clearwater (100.6 ha).

**Table 20.** Summary of Incursions in Legal Old Growth Management Areas (OGMA's) that Exceed the Allowable Incursion Threshold in the Kamloops Land and Resource Management Plan (KLRMP) Area.

Landscape Unit	Total OGMA's		Total Area (ha)		Total CE-CFLB Area (ha)		Disturbance Type
	# of OGMA's with Incursions Over Threshold	% of OGMA's with Incursions Over Threshold	Total OGMA area with Incurred Status (ha)	Total Incurred Area in OGMA (ha) <sup>a</sup>	Total OGMA CE-CFLB Area with Incurred Status (ha)	Total Incurred OGMA CE-CFLB Area (ha)	
Adams Lake	23	11%	3,823.0	116.1	3,821.9	116.0	Forest Harvesting, Mining and Extraction, Roads
Albreda	12	8%	811.8	31.8	751.4	31.7	Oil and Gas, Power, Rail, Roads, Rights of Way
Ashcroft	21	24%	7,242.0	124.4	7,235.8	123.1	Forest Harvesting, Mining and Extraction, Oil and Gas, Power, Roads, Rights of Way, Urban
Avola	17	12%	2,687.7	54.5	2,658.2	50.6	Forest Harvesting, Mining and Extraction, Oil and Gas, Power, Roads, Rights of Way
Barriere	33	11%	5,068.5	144.6	5,060.0	144.6	Forest Harvesting, Roads
Bonaparte	4	7%	729.0	29.6	728.4	29.6	Forest Harvesting, Roads
Campbell	23	28%	6,123.9	128.0	6,067.9	126.4	Forest Harvesting, Oil and Gas, Power, Recreation, Roads, Rights of Way
Cayenne	7	10%	1,387.8	21.8	1,385.6	21.8	Forest Harvesting, Roads
Clearwater	25	10%	5,002.4	100.6	4,999.0	100.0	Forest Harvesting, Mining and Extraction, Power, Rail, Roads, Urban
Darfield	10	16%	1,357.0	37.2	1,331.2	36.3	Forest Harvesting, Oil and Gas, Roads, Rights of Way
Deadman	15	20%	5,372.0	124.1	5,215.8	123.9	Forest Harvesting, Mining and Extraction, Oil and Gas, Power, Roads
Dewdrop	2	22%	2,154.2	5.0	2,129.2	5.0	Forest Harvesting, Roads
Dunn	4	8%	489.8	8.5	483.1	5.5	Roads
Hat Creek	5	7%	3,506.5	19.9	3,503.4	19.2	Power, Roads, Rights of Way
Heffley	18	23%	2,214.6	58.1	2,211.5	58.0	Forest Harvesting, Power, Roads, Rights of Way, Urban
Lac du Bois	4	33%	429.4	6.1	429.1	6.1	Roads

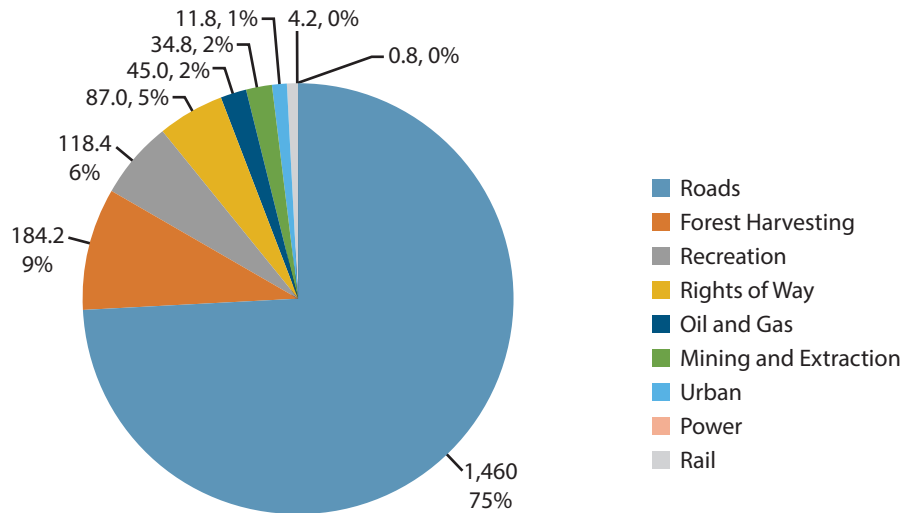
Landscape Unit	Total OGMAs		Total Area (ha)		Total CE-CFLB Area (ha)		Disturbance Type
	# of OGMAs with Incursions Over Threshold	% of OGMAs with Incursions Over Threshold	Total OGMA area with Incurred Status (ha)	Total Incurred Area in OGMA (ha) <sup>a</sup>	Total OGMA CE-CFLB Area with Incurred Status (ha)	Total Incurred OGMA CE-CFLB Area (ha)	
Louis Creek	18	23%	3,434.3	211.2	3,431.9	210.7	Forest Harvesting, Recreation, Roads, Rights of Way, Urban
Lower Adams	11	14%	1,497.0	46.3	1,496.7	46.3	Forest Harvesting, Roads
Lower Bona-partie	9	27%	2,482.0	50.3	2,480.5	50.0	Forest Harvesting, Oil and Gas, Roads, Rights of Way
Mad	15	17%	3,319.7	50.1	3,318.9	50.0	Mining and Extraction, Oil and Gas, Roads, Rights of Way
Mica	12	14%	2,967.6	33.6	2,963.0	33.6	Forest Harvesting, Roads
Mud	4	4%	1,223.3	12.2	1,183.2	10.2	Roads, Rights of Way
Nehalliston	2	4%	1,317.9	14.4	1,317.5	14.4	Forest Harvesting, Roads
Raft	18	12%	6,936.0	87.0	6,858.4	85.5	Forest Harvesting, Power, Roads
S. Kamloops	9	16%	2,443.5	59.1	2,435.8	59.1	Forest Harvesting, Oil and Gas, Power, Roads, Rights of Way
Skull	7	10%	2,401.8	42.2	2,390.9	41.2	Oil and Gas, Roads, Rights of Way
Stump Lake	13	21%	833.7	33.9	831.0	33.9	Forest Harvesting, Oil and Gas, Roads, Rights of Way
Thunder Blue	17	12%	4,342.1	67.0	4,279.2	63.0	Forest Harvesting, Oil and Gas, Roads, Rights of Way
Tranquille	5	7%	620.8	16.7	620.8	16.7	Forest Harvesting, Roads
Tum Tum	12	7%	1,641.0	28.4	1,632.8	26.3	Roads, Urban
Upper Guichon	27	33%	2,533.1	101.8	2,514.0	99.4	Forest Harvesting, Mining and Extraction, Oil and Gas, Power, Recreation, Roads, Rights of Way, Urban
Upper N. Thompson	9	7%	1,508.4	38.3	1,503.9	38.3	Roads
Vavenby	10	17%	1,316.4	43.8	1,314.4	43.8	Oil and Gas, Power, Roads, Rights of Way
<b>TOTAL</b>	<b>379</b>	<b>12%</b>	<b>89,218.2</b>	<b>1,946.3</b>	<b>88,584.0</b>	<b>1,920.2</b>	

<sup>a</sup> Incursion areas that are less than 0.01 ha was not included in the disturbance type summary.

**Disturbance Type of Incursions in Legal OGMA**

A total area of 1,946.3 ha (1,920.2 ha of CE-CFLB) of incursions in legal OGMA was identified in this assessment that are beyond the allowable incursion limits (Table 20). Most incursions that exceed the allowable threshold were due to road development (75.0%) followed by forest harvesting (e.g., cutblocks) (9.5%) (Figure 13). The area of each incursion ranges from 0.01 ha to 22.7 ha, with one larger incursion reported in the Louis Creek LU of 107.9 ha for the purposes of recreation (Sun Peaks Resort). It is important to note that some of these incursions were present and made known at the time of legal OGMA establishment. See Appendix 3 Table 25 for further details regarding disturbance types by LU.

**Total Area (ha) and Disturbance Type of Incursions into Non-Legal OGMA**

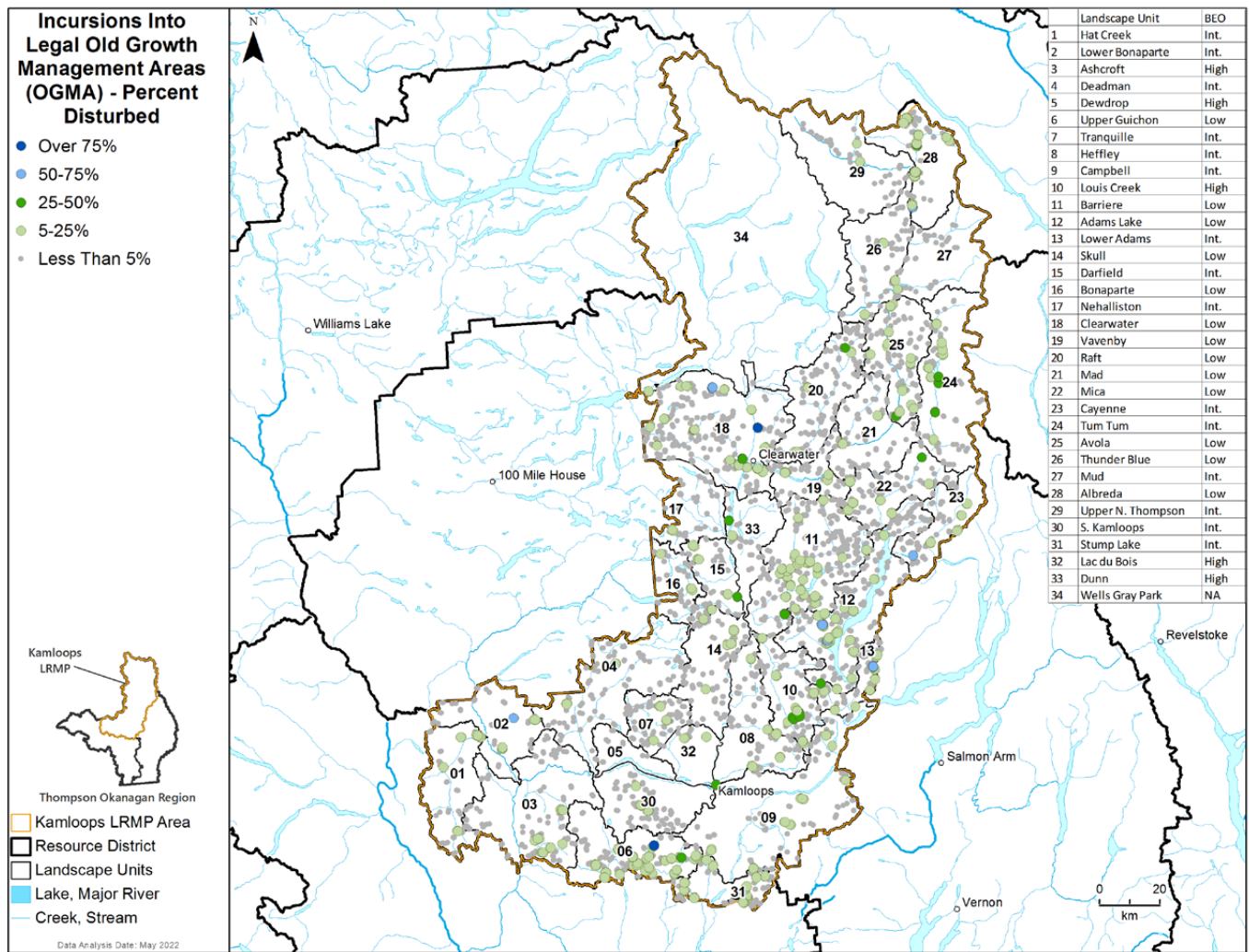


**Figure 13.** Distribution of Incursions in Legal Old Growth Management Areas (OGMA) that Exceed the Allowable Incursion Threshold by Disturbance Type in the Kamloops Land and Resource Management Plan (KLRMP) Area.

**5.3.3.1 Incursion Magnitude in Legal OGMA**

Magnitude of incursions in OGMA presents the overall impact based on the total size of the OGMA and the scale of the disturbance (e.g., the smaller the OGMA, the greater the potential impact to the OGMA).

In the KLRMP area, most legal OGMA (1,289 out of 3,053 total OGMA) have incursions that disturb less than 5% of the total OGMA area, followed by incursions that disturb 5 to 25% of the total OGMA area (257 OGMA) (Figure 14). There are 17 OGMA with 25- 50% of total incurred OGMA area, seven OGMA with 50-75% incurred area, and two OGMA with more than 75% incurred area.



**Figure 14.** Magnitude of Incursions into Legal Old Growth Management Areas (OGMA) in the Kamloops Land and Resource Management Plan (LRMP) Area.



### 5.3.4 Limitations

This report assesses the amount of incursions into OGMA due to anthropogenic (human-caused) disturbances. At this time, this OGMA indicator does not report on incursions due to natural disturbances due to limitations with the VRI (as discussed in section 2.2.3). In this assessment, all incursions were included regardless of when they occurred (e.g., prior to or after the OGMA was established), except for cutblocks. All cutblocks that pre-dated the establishment of the legal OGMA and those that occurred more than 20 years before the assessment were removed. As a result, this assessment may include incursions that were known and considered acceptable at the time of OGMA delineation.

In addition, road widths applied in the assessment were not verified on the ground and instead represent a best estimation based on the available information and input from government staff. Due to the variation in accuracy of spatial road data (e.g., roads represented in the data that were not actually built, varying road widths based on local terrain), it is possible that some OGMA incursions due to roads are a result of incorrect road data and not necessarily an actual incursion into the OGMA.

**Assessing how OGMA were designed and implemented as per the provincial policy or guidance was outside the scope of this assessment.** The LUPG provided the direction for OGMA delineation based on a rigorous rules-based approach that focused on managing timber supply impacts, ensuring biodiversity conservation was within the timber supply impact levels set by government (i.e., no more than a 4% impact to timber supply). As a result, there may have been unintended outcomes to biodiversity objectives and old growth forest management.

### 5.3.5 Summary and Observations

There are 3,053 mapped legal OGMA across the KLRMP area with a total OGMA area of 201,199.3 ha and a CE-CFLB of 199,539.3 ha. Of these, 1,572 OGMA (51%) show some level of disturbance impacting a total OGMA area of 2,501.6 ha. There are eight LUs with more than 70% of OGMA with incursions, the Upper Guichon LU showing the most incurred OGMA with 78%, and an additional 12 LUs with more than 50% of OGMA with incursions. There are nine LUs with more than 100 ha of incurred OGMA area in total, of which the Louis Creek LU had the largest total incurred OGMA area with 226.4 ha.

There are 379 OGMA (12% of all OGMA) with incursions that exceed the allowable limits as per the legal order, impacting 1,946.3 ha of total OGMA area. Barriere LU has the largest number of occurrences of incurred OGMA (33 incurred OGMA with a total incurred area of 144.6 ha), and Louis Creek LU has the largest total OGMA area with incurred status (211.2 ha). There are eight LUs with more than 100 ha of total incurred OGMA area, with the Louis Creek LU showing the largest incurred area (211.2 ha). Most incursions that exceeded the allowable limit were due to road development (75.0%) followed by forest harvesting (i.e., cutblocks) (9.5%). Most OGMA incursions disturb less than 5% of the total OGMA area.

Incursions into OGMA may have occurred for several reasons and may have been known at the time of OGMA establishment. It is recommended that further inquiry be completed to better understand the amount, type, and magnitude of OGMA incursions to determine if the intent of the legal order is being maintained and if OGMA need to be replaced or monitored. In addition, OGMA were intended to have long-term monitoring for incursions, however, such monitoring has not occurred in the KLRMP area to date. These OGMA incursion assessment results could be considered as the beginnings for future monitoring opportunities.

## 5.4 Amount of Old Growth Forest in OGMAs Relative to Policy Targets

OGMAs are the implementation strategy used to meet old growth forest retention targets. Identifying how much old growth forest exists within OGMAs relative to policy targets can assess whether OGMAs are currently achieving old growth retention targets in the CE-CFLB. In addition, assessing how much mature forest exists within OGMAs can help identify the amount of potentially eligible stands available for future recruitment to achieve old growth forest and biodiversity objectives.

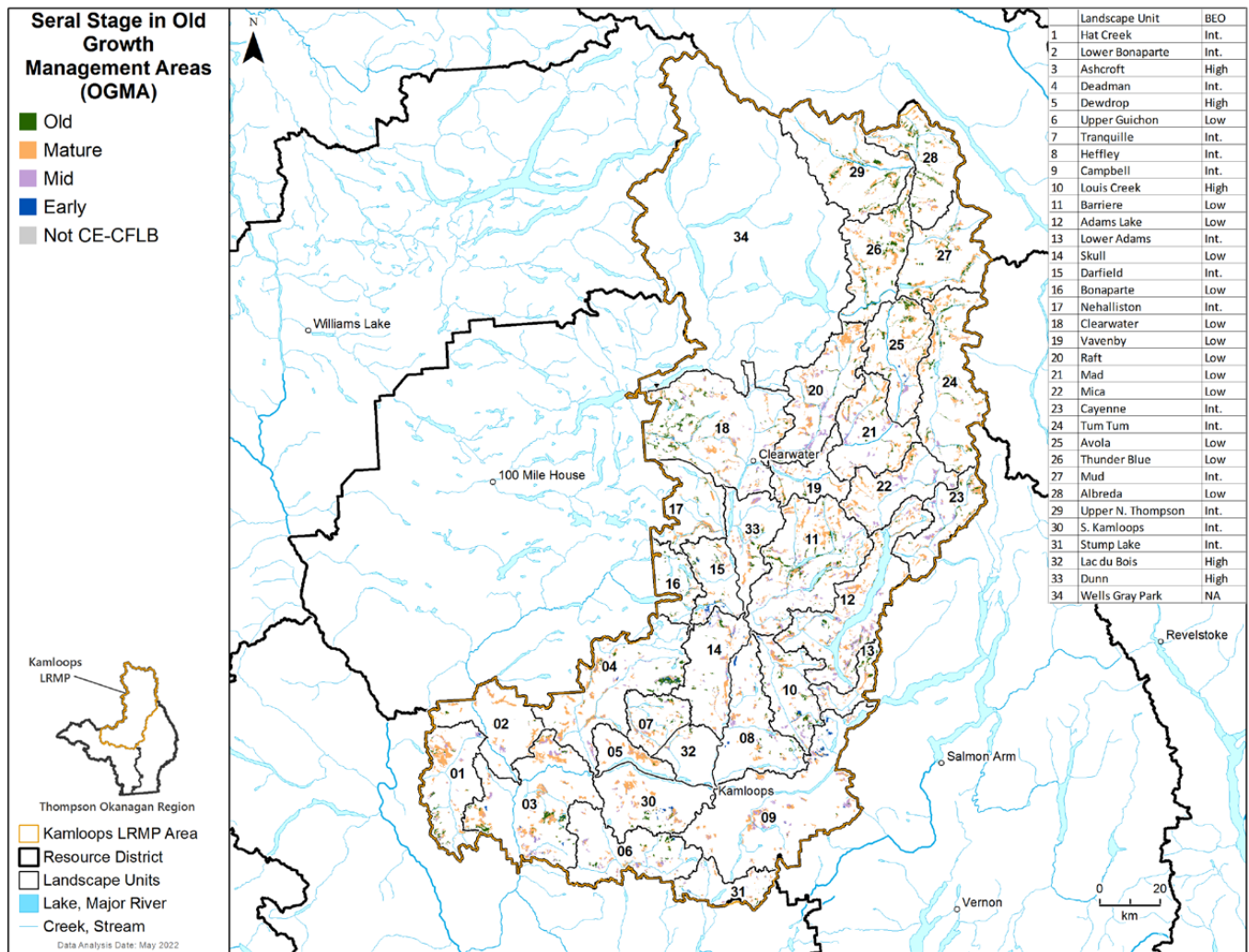
The LUPG provided a strict “rules-based” approach to designing OGMAs while mitigating impacts to timber supply. Old growth forest retention targets (i.e., spatial OGMAs) were to be met first in areas with harvesting restrictions (i.e., parks, wildlife habitat areas) before identifying areas in the timber harvesting landbase with the LU-BEC. If there was not enough old growth forest in the LU-BEC to meet the target, then the next oldest available forest (generally mature forest) could be recruited.

**While this assessment includes the amount of old growth forest within other protected areas as part of the overall old growth forest available in each AU, it does not specifically report on the amount of old growth forest co-located within these no-harvest designation areas (e.g., wildlife habitat areas, ungulate winter ranges, parks). Therefore, where the results indicate that the amount of old growth forest in OGMAs is not sufficient to meet targets, it may be because the remaining amount of old growth forest needed to meet those targets is captured in other protected areas, and further inquiry is required.**

The KLRMP old growth order interpretive guidance (2013) states that OGMAs are to be managed to the polygon (area) to meet the distribution of old growth forest for each LU-BEC. The guidance does not require the management of the seral stage within OGMAs. The intent of OGMAs was to meet the target amount of old growth forest under the BDG and the negotiated process at the KLRMP table. **This assessment is intended to provide a starting point for further analysis and inquiry to examine how OGMA designations are meeting policy targets for old growth forest retention.**

### 5.4.1 Overview of Old Growth Forest in Legal OGMAs

The seral stage in legal OGMAs shows a general pattern of mature seral stage forest in most OGMAs. Old seral forest in OGMAs is particularly in the northern half of the KLRMP area and at higher elevations. There is a higher presence of mid seral stage forest in the southern half of the KLRMP area and at lower elevations (Figure 15). There are 3,053 mapped legal OGMAs across all LUs with a total OGMA area of 201,199.3 ha and a CE-CFLB of 199,539.3 ha. Overall, more than half of OGMAs are mature seral stage forests (57.3% or 115,243.6 ha of total OGMA area) followed by mid (19.2% or 38,552.6 ha) and old (18.9% or 37,970.8 ha), with a small portion of early seral forests (3.7% or 7,349.8 ha).



**Figure 15.** Current Seral Stage of Forests in Legal Old Growth Management Areas (OGMAs) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

### 5.4.2 Amount of Old Growth Forest in Legal OGMAs

Appendix 4 Table 26 provides a summary of the entire KLRMP area with the current amount of old growth forest compared to the policy targets for all AUs (LU-BEC) with established legal OGMAs. The total OGMA area identified here differs from the OGMA incursion indicator by 422.5 ha because there is area within OGMAs that does not have old growth targets (e.g., BG BEC zone or NDT5).

Out of the total 237 AU's, there are only four AUs that are meeting the old growth forest targets within legal OGMAs (1.6%): the Campbell LU-ESSFxc2 (200% of the target met), South Kamloops LU-ESSFxc2 (169%), Vavenby LU-ESSFdcw (111%), and Upper Guichon LU-ESSFxc2 (103%). However, the total area associated with these four AUs is relatively small compared to the entire KLRMP area with targets, with a total (LU-BEC) CE-CFLB of 3,119.3 ha, of which 811.0 ha is CE-CFLB area within OGMAs.

In contrast, there are 233 AUs that do not meet the targets, of which 71 AUs have no old growth forest within legal OGMA boundaries. These 71 AUs with no old growth forest are predominately in the IDF BEC zone (36 AUs) followed by the ESSF (15 AUs), PP (10 AUs), ICH (7 AUs), and MS (3 AUs) BEC zones. In addition, there are 15 AUs that have no CE-CFLB area within the legal OGMA boundary, and 19 AUs with OGMAs that have CE-CFLB area but no old growth forest targets assigned (e.g., in NDT 4 and 5).

The general trend across the KLRMP area indicates on average there are more old growth forests available across the CE-CFLB (average 68% available old growth as compared to the target) than there are currently within legal OGMA (average 15% available old growth as compared to the target) (see Appendix 4, Table 26). **This suggests there are old growth forests available across the land base to contribute to the policy targets that are currently not within the legal OGMA boundaries.** However, even if all old growth forest is captured within OGMA there are currently not sufficient amounts of old growth forest to meet the targets across the KLRMP area, with variations by LU-BEC.

### 5.4.3 Limitations

While there are many AUs with a surplus of old and mature seral stage forests, these areas tend to be located outside of the existing legal OGMA. If these areas are not included in future OGMA designations, they will not be excluded from harvesting opportunities and therefore these areas are less likely to effectively contribute to biodiversity objectives in the near-term.

The provincial policy and guidance put limitations on OGMA to mitigate impacts to timber supply. For example, OGMA design and locations were prioritized in areas considered uneconomical for forest harvesting or in areas that were managed for other values such as wildlife habitat. This process may have resulted in a trade-off of old growth forest biodiversity for areas that didn't impact timber supply, causing the policies themselves to become a barrier to having old growth forest in OGMA. As a result, the application of the provincial policy and guidance may have resulted in or contributed to the targets not being met within OGMA.

### 5.4.4 Summary and Observations

There is a general pattern of mature and old forest in OGMA predominately in the northern half of the KLRMP area and at higher elevations, and a higher presence of mid seral stage forests in OGMA in the southern half of the KLRMP area and at lower elevations. Overall, the majority of the area in legal OGMA are mature seral stage forests (57.3%) followed by mid (19.2%), old (18.9%), and early (3.7%).

There are only four AUs that are meeting old growth forest targets within legal OGMA (i.e., total old growth in OGMA is enough to meet policy targets). However, the total area of these AUs is relatively small compared to the entire KLRMP area, with a total of 811.0 ha of CE-CFLB within these OGMA. There are 233 AUs not meeting the targets within OGMA. Of these, 71 AUs have no old growth forest within legal OGMA boundaries. Most of the AUs not meeting the old growth forest targets are in the IDF BEC zone, as well as the ESSF, PP, ICH, and MS BEC zones.

The general trend across the KLRMP area indicates there are old growth forests, however these generally do not occur within the legal OGMA (average 15% of the target being met). Old growth forest available in the CE-CFLB outside of established OGMA boundaries could contribute to these targets. The lack of old growth forest within OGMA in the majority of AUs suggests that current placement of legal OGMA is not fully capitalizing on the available old growth forest on the landscape. However, even if all old growth forest is captured within OGMA there are currently not sufficient amounts across the land base to meet the policy targets.

# 6 CONCLUSION

Approximately one tenth of the Cumulative Effects Crown Forested Land Base (CE-CFLB) (11.8% or 232,080.7 ha) has been identified as old growth forest across the Kamloops Land and Resource Management Plan (KLRMP) area, and 8.8% of the CE-CFLB (172,899.6 ha) with policy targets is old growth forest. The greatest representation of old and mature forests is in higher elevation forests in the north, in mid-elevation forests, and to the south along the North Thompson River valley. The higher elevation forests and the northern half of the KLRMP area is characterized by steeper ground and wetter ecosystems which tend to be more operationally challenging and less desirable for forestry activities due to stand conditions, species profiles, and higher harvesting costs.

Currently 31% of assessment units (AUs) meet the policy targets for old growth forest (73 AUs), while the remaining 164 AUs do not meet the old growth forest targets. The AUs that meet the targets are generally found along the western plateau and to the north in lower elevation valleys. There are 46 AUs that have no old growth forest identified to meet the targets. The dry, low elevation forests (typical of the Interior Douglas-fir and Ponderosa Pine ecosystems) are furthest from the targets. Bonaparte is the only landscape unit (LU) with all AUs meeting the targets. When including mature forest, 48.1% of the CE-CFLB has been identified as mature-plus-old forest that could contribute as recruitment forests in addition to meeting the mature-plus-old targets. Currently 85% of AUs meet the policy targets for mature-plus-old forest.

The KLRMP area has 3,053 legally established Old Growth Management Areas (OGMA) with a total OGMA area of 201,199.3 ha and 199,539.3 of CE-CFLB. There are 1,572 OGMAs (51% of all OGMAs) with some level of incursion, while 379 OGMAs (12%) have incursions that exceed the allowable limits. The total incurred OGMA area associated with these 379 OGMAs is relatively low (1,946.3 ha) compared to the total area of all OGMAs. Most incursions disturbed less than 5% of the OGMA and were primarily due to road development (75%) followed by forest harvesting (e.g., cutblocks) (9.5%). In addition, OGMAs have been impacted by wildfires across the land base, however this was not included in the assessment as a disturbance type.

In general, there appears to be more old growth forest available across the land base (average 68%) than within the legal OGMA boundaries (average 15%). This suggests that current OGMA placement may not be fully capitalizing on the available old growth forest on the landscape. Old growth forests identified outside of the current legal OGMA locations should be considered to meet policy targets and to account for natural disturbances over time.

Old growth forest, mature-plus-old forest, and OGMAs are subject to impacts from a range of resource development activities outside of forestry, as often those sectors are not legally required to mitigate or manage for old growth forest (e.g., mines, land conversion, oil and gas). This assessment provides the first attempt at reporting the cumulative disturbance from all sectors regardless of legal obligations. The results can be considered in context of how new permitting and authorization decisions may contribute to further cumulative impacts and can support the review of current condition of OGMAs to determine if additional management strategies (e.g., amendment, replacement) is required.

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# 8 APPENDICES

## Appendix 1 – Summary of Assessment Results

To understand the current condition of old growth forest, the following assessment questions were developed to identify the amount of old growth forest, amount of mature-plus-old forest, incursions into OGMAs, and the amount of old growth forest within OGMAs. Table 21 summarizes the results of the current condition assessment of old growth forest in the KLRMP area.

**Table 21. Summary of Current Condition Assessment Results by Cumulative Effects (CE) Indicator in the Kamloops Land and Resource Management Plan (KLRMP) Area.**

Assessment Questions
<b>Amount of Old Growth Forest</b>
<b><i>What is the current amount of old growth forest in the CE-CFLB? Where is the old growth forest located on the land base?</i></b>
<ul style="list-style-type: none"><li>• 11.8% of CE-CFLB is old growth forest, which covers 232,080.7 ha of total CE-CFLB. In the CE-CFLB with targets, 8.8% of CE-CFLB (172,899.6 ha) is old growth forest.</li><li>• Generally found in higher elevations in the north with some occurrence in the south and mid elevation forests along the North Thompson River valley.</li><li>• The highest percentages of old growth forest primarily exist in the Thunder Blue, Bonaparte, Albreda, Upper North Thompson, and Dunn LUs.</li></ul>
<b><i>Which AUs meet the targets for old growth forest?</i></b>
<ul style="list-style-type: none"><li>• 73 out of 237 AUs (31%) meet the policy targets. These AUs account for 29.2% (502,550.2 ha) of the total CE-CFLB. The majority of these AUs have more than 125% of the target being met.</li><li>• Generally found along the western plateau from Bonaparte Lake to Mahood Lake, around the Barriere Lakes south to Sun Peaks, and to the north in the lower elevation valleys.</li><li>• 6 BEC subzone/variants have all AUs meeting the targets covering 85,185.1 ha of CE-CFLB. These are mostly the ICH in the northern valleys, mid-elevation MS stands from Clearwater to Kamloops, and all AUs within the SPBS BEC zone.</li></ul>
<b><i>Which AUs are flagged for further consideration?</i></b>
<ul style="list-style-type: none"><li>• 164 of the 237 AUs (69%) do not meet old growth forest policy targets. These AUs cover a total of 1,220,990.7 ha of CE-CFLB.</li><li>• 46 AUs have no old growth forest to meet targets, covering 128,415.3 ha of total CE-CFLB.</li><li>• AUs furthest from targets occur across the KLRMP area in most LUs but are especially common in the dry, low elevation valley bottoms (IDF and PP BEC zones).</li><li>• The Bonaparte LU is the only LU with all AUs meeting the targets.</li></ul>
<b><i>What are some of the possible reasons for the current condition?</i></b>
<ul style="list-style-type: none"><li>• Natural disturbance – several large wildfires (Elephant Hill, 2017; McLure, 2003; McGillvray, 2003) that burnt extensive areas, leaving large areas without old growth forest stands.</li><li>• Land use history – forest harvesting, including salvage in response to natural disturbances, particularly in the warm and dry low elevation forests that are easily accessible for forest operations and land conversion. Generally, more old growth forest is found in higher elevations and in the northern portion of the KLRMP area because it consists of wetter ecosystems and steeper ground which is more operationally challenging and less desirable due to stand conditions, species profiles, and higher harvesting costs.</li><li>• Limitation – many LUs are occupied with multi-layered dry-belt fir forests which are difficult to assign a stand age in the VRI due to the varying stand complexity. This may have resulted in the VRI underestimating forest age and subsequently the amount of old growth forest currently in these landscapes.</li></ul>

## Assessment Questions

### Amount of Mature-plus-Old Forest

#### *What is the current amount of mature-plus-old forest in the CE-CFLB? Where is mature-plus-old forest located on the land base?*

- 48.1% of CE-CFLB is mature-plus-old growth forest, which covers 946,165.8 ha of total CE-CFLB.
- Generally found across the KLRMP area with higher proportions of mature-plus-old forest in higher elevations, along the western plateau, and to the southwest.

#### *Which AUs meet targets with mature-plus-old forest?*

- 201 out of 237 AUs (85%) meet policy targets. These AU account for 88.9% (1,532,345.1 ha) of the total CE-CFLB.
- These units are found throughout the KLRMP area with larger concentrations in the northern half and along the southwestern portion of the KLRMP area.
- Most AUs have more than 125% mature-plus-old forest compared to the targets.
- 17 out of 34 BEC subzones have all AUs meeting the targets.
- At the AU scale, including mature forest in the current condition assessment for old growth forest (mature-plus-old) increased the percentage of AUs meeting targets from 31% to 85% in the CE-CFLB.
- At the LU scale, including mature forest in the current condition assessment for old growth forest (mature-plus-old) increased the percentage of LUs meeting targets from 29.2% to 88.9% in the CE-CFLB.

#### *Which AUs are flagged for further consideration?*

- 36 out of 237 AUs (15%) do not meet policy targets. These AUs account for 191,195.9 ha of the total CE-CFLB.
- AUs furthest from the targets are mostly in the dry lower elevation ecosystems (IDF BEC zone). The ESSFdc2, ICHmk3, and MSdm2 have no AUs meeting the targets, however the total CE-CFLB associated with these AUs is relatively small (4,448.1 ha).
- The majority of these AUs are close to meeting the targets:
  - 19 AUs have 75-100% of the target met
  - 10 AUs have 50-75% of the target met
  - 3 AUs have 30-50% of the target met
  - 4 AUs have 0-30% of the target met

#### *What are some of the possible reasons for the current condition?*

- Similar to the old growth forest indicator, there is a long land use history from human (e.g., forestry, mining, farming, land conversion) and natural (e.g., pest, wildfire) disturbances.
- Human disturbances such as forest harvesting are more common in the south where the ground is easier to operate in (rolling terrain, existing road networks, etc.).
- Limitation – dry IDF ecosystems tend to be more open fir stands mixed with grasslands or multi-layered dry-belt fir forests. These tend to be difficult to assign a single stand age which may have resulted in the VRI underestimating the overall age of these forests.

### Incursions into OGMA

#### *Are there anthropogenic incursions in OGMA? What is the current amount of incursion into OGMA in the CE-CFLB?*

- There are 3,053 spatial legal OGMA in the KLRMP area with a total OGMA area of 201,199.3 ha of which 199,539.3 ha is CE-CFLB.
- 1,572 OGMA (51%) have some level of incursion (no incursion threshold applied), impacting a total OGMA incursion area of 2,501.6 ha (1.2% of the total OGMA area).
- 8 LUs have more than 100 ha of total incurred OGMA area: Louis Creek (211.2 ha), Barriere (144.6 ha), Campbell (128.0 ha), Ashcroft (124.4 ha), Deadman (124.1 ha), Adams Lake (116.1 ha), Upper Guichon (101.8 ha), and Clearwater (100.6 ha).

#### *Do incursions exceed the order threshold?*

- 379 OGMA (12%) have incursions exceeding the allowable incursion limits, impacting a total OGMA incursion area of 1,946.3 ha (2.2% of the total OGMA area).
- Barriere LU has the larger number of occurrences (33 OGMA with a total OGMA incurred area of 144.6 ha) and Louis Creek LU has the largest total OGMA incurred area (211.2 ha).
- Some of these incursions are historical and were known and considered acceptable at the time of OGMA establishment.



## Assessment Questions

### *What is the type of incursions into OGMA's?*

- Majority of incursions that exceed the allowable incursion limits were due to road development (75.0%) followed by forest harvesting (9.5%); however, roads may have already been present and known when the OGMA's were established.
- Incursions were also due to recreation (6.1%), rights-of-way (4.5%), oil and gas (2.3%), mining and extraction (1.8%), urban (0.6%), power (0.2%), and rail (0.04%).
- OGMA's have also been impacted by wildfires (outside scope of this assessment).

### *What is the magnitude (overall % impact) of incursions into OGMA's?*

- Most incursions disturb less than 5% of the total OGMA area.
- 1,481 OGMA's had no incursions.
- 1,289 OGMA's fall within the <5% magnitude category.
- 257 OGMA's fall within the 5-25% magnitude category.
- 17 OGMA's fall within the 25-50% magnitude category.
- 7 OGMA's fall within the 50-75% magnitude category.
- 2 OGMA's fall within the >75% magnitude category.

## Amount of Old Forest in OGMA's

### *What is the current amount of old growth forest in OGMA's in the CE-CFLB? What is the seral stage breakdown? Where is old growth forest located within OGMA's?*

- The majority of legal OGMA's are mature seral stage forests (57.3% or 115,243.6 ha of the total OGMA area) followed by mid (19.2% or 38,552.6 ha) and old (18.9% or 37,970.8 ha) with a small portion of early (3.7% or 7,349.8 ha).
- General pattern of mature forests in most OGMA's with old seral forests particularly in the northern half of the KLRMP area and at higher elevations.

### *Which OGMA's meet and do not meet targets by BEC subzone and/or variant within each LU?*

- 4 AUs are meeting the policy targets in legal OGMA's. These are Campbell LU-ESSFxc2 (200% of the target met), South Kamloops LU-ESSFxc2 (169%), Vavenby LU-ESSFdcw (111%), and Upper Guichon LU-ESSFxc2 (103%). The total area of these AUs is relatively small, with 3,119.3 ha of total CE-CFLB, of which 8110 ha is CE-CFLB area within OGMA's.
- 233 AUs are not meeting the policy targets in legal OGMA's. Of these, 71 AUs have no old growth forest within the legal OGMA boundaries. Most of these are in the IDF BEC zone (36 LU-BECs).
- 15 AUs have no CE-CFLB area within the legal OGMA boundary.
- 19 AUs with OGMA's have CE-CFLB area but no targets assigned (e.g., NDT 4 and 5).
- On average, there is more old growth forest available outside the legal OGMA boundaries that could contribute to these targets if incorporated into OGMA's.

## Appendix 2 – Denominator Table

For all CE indicators, the Cumulative Effects Crown Forested Land Base (CE-CFLB) is the denominator used for the assessment with the exception of indicator 3 (Incursions into Old Growth Management Areas (OGMAs)) that is based on the gross (total) area of OGMAs. The sub-totals are provided in Table 22 to show how areas contributed to the total CE-CFLB area and an area breakdown for legal OGMAs for CE indicators 3 and 4.

**Table 22.** Denominators used in the Current Condition Assessment by Cumulative Effects (CE) Indicator in the Kamloops Land and Resource Management Plan (KLRMP) Area.

CE Indicator	Results Section	Description	Sub-totals (ha)	Totals (ha)
			Total Gross Area in KLRMP	-
		Total CE-CFLB in KLRMP	-	<b>1,966,473.5</b>
Old Growth and Mature-plus-Old Forest (Indicator 1 & 2)	5.1 & 5.2	CE-CFLB with No BEO (Wells Gray Park)	208,756.7	-
		CE-CFLB with No Targets (NDT5 not in Wells Gray Park)	24,405.1	-
		CE-CFLB with No Targets (NDT4 not in Wells Gray Park)	9,770.7	-
		Total CE-CFLB with No Targets	-	242,932.6
		Total CE-CFLB with Legal Targets and/or Policy Targets	-	<b>1,723,540.9</b>
Incursions into OGMAs (Indicator 3)	5.3	Gross Area in Non-Legal OGMAs	-	-
		Gross Area in Legal OGMAs	201,199.3	-
		Total Gross Area in OGMAs (ALL)	-	<b>201,199.3</b>
Old Growth in OGMAs (Indicator 4)	5.4	CE-CFLB Area in Non-Legal OGMAs	-	-
		CE-CFLB Area in Legal OGMAs	199,539.3	-
		Total CE-CFLB Area in OGMAs (ALL)	-	<b>199,539.3</b>

## Appendix 3 – Indicator Tables

A gradient colour scale is used to illustrate the current condition of the old growth forest and mature-plus-old forest indicators (a duplicate of Table 8 is shown below for reference).

Gradient Scale for Old Growth and Mature-plus-Old Forest Indicators: Policy Targets	Indicator Condition Interpretation	Current Condition Status (% of Target Met with Old Growth or Mature-plus-Old Forest)	Analysis Definition (% of Target Met with Old Growth or Mature-plus-Old Forest)
	Below Target	0–30%	0–29.99%
	Below Target	30–50%	30–49.99%
	Below Target	50–75%	50–74.99%
	Below Target	75–100%	75–99.99%
	Target Met	100–110%	100–109.99%
	Above Target	110–125%	110–124.99%
	Above Target	125+%	125+%

In the old growth forest and the mature-plus-old forest indicators, an additional colour theme is presented in the assessment that illustrates the percent of old growth forest or mature-plus-old forest on the CE-CFLB by LU and BEC subzone or variant (a duplicate of the legend in Figure 6 is shown below for reference).

Gradient Scale for Existing Old Growth and Mature-plus-Old Forest	Current Amount of Old Growth or Mature-plus-Old Forest (% of CE-CFLB)
	0–10 %
	10–20 %
	20–30 %
	30–50 %
	50–70 %
	70–100 %

## Amount of Old Growth Forest

Table 23 compares the CE-CFLB area (column A), the old growth forest target (column C and column A\*C), and the amount of old growth forest (column B) relative to the targets for all AUs (LU, BEO, BEC). The amount of CE-CFLB that is old growth forest within that AU is shown as a percentage of the total CE-CFLB for that AU (column B/A) using the gradient scale shown from Figure 6 above. The current condition of that AU (column (B/A)/C), meaning the percentage of the old growth forest target that is currently being met in that AU, is then shown using the gradient scale shown above from Table 8.

**Table 23.** Assessment Units Compared to the Old Growth Forest Policy Targets by Assessment Unit (AU) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Old (ha)	Existing Old (ha)	Target Old (%)	Existing Old (%)	% of Target Met
Adams Lake	Low	ESSFdc3	6,444.2	902.2	1,863.2	14%	28.9%	206.5%
		ESSFdcw	1,505.7	135.5	13.1	9%	0.9%	9.7%
		ESSFwc2	14,165.8	2,691.5	174.3	19%	1.2%	6.5%
		ESSFwcw	597.8	113.6	0.0	19%	0.0%	0.0%
		ICHdw3	3,355.3	469.7	815.2	14%	24.3%	173.5%
		ICHmk2	10,438.1	1,461.3	1,198.6	14%	11.5%	82.0%
		ICHmw3	27,379.2	2,464.1	111.0	9%	0.4%	4.5%
		ICHwk1	5,569.1	724.0	208.3	13%	3.7%	28.8%
		IDFdk2	361.2	47.0	0.0	13%	0.0%	0.0%
		IDFmw2	15,437.8	2,006.9	0.0	13%	0.0%	0.0%
		IDFhx2	172.2	22.4	0.0	13%	0.0%	0.0%
MSdm3	6,317.3	884.4	1,071.6	14%	17.0%	121.2%		
Albreda	Low	ESSFmm1	1,044.6	94.0	93.2	9%	8.9%	99.2%
		ESSFmmw	559.9	50.4	16.8	9%	3.0%	33.4%
		ESSFwc2	13,301.4	2,527.3	2,872.3	19%	21.6%	113.7%
		ESSFwcw	8,133.7	1,545.4	499.3	19%	6.1%	32.3%
		ICHmm	1,213.7	109.2	103.8	9%	8.5%	95.0%
		ICHvk1	5,620.6	730.7	2,247.7	13%	40.0%	307.6%
		ICHwk1	7,726.2	1,004.4	2,883.6	13%	37.3%	287.1%
		SBSdh1	367.2	40.4	72.5	11%	19.7%	179.5%
Ashcroft	High	ESSFxc2	2,251.1	472.7	684.0	21%	30.4%	144.7%
		ESSFxcw	47.0	9.9	14.0	21%	29.8%	141.9%
		IDFdk1	26,212.4	4,980.4	563.2	19%	2.1%	11.3%
		IDFhx2	25,538.4	4,852.3	175.2	19%	0.7%	3.6%
		MSxk2	15,168.7	3,185.4	2,204.4	21%	14.5%	69.2%
		MSxk3	3,965.0	832.6	1,704.1	21%	43.0%	204.7%
		PPxh2	13,196.6	2,507.4	12.3	19%	0.1%	0.5%

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Old (ha)	Existing Old (ha)	Target Old (%)	Existing Old (%)	% of Target Met
Avola	Low	ESSFwc2	23,638.5	4,491.3	1,972.9	19%	8.3%	43.9%
		ESSFwcw	5,209.3	989.8	200.2	19%	3.8%	20.2%
		ICHdw3	3,315.5	464.2	77.5	14%	2.3%	16.7%
		ICHmw3	14,987.6	1,348.9	1,252.5	9%	8.4%	92.9%
		ICHvk1	1,303.3	169.4	338.8	13%	26.0%	200.0%
		ICHwk1	8,022.7	1,042.9	2,345.6	13%	29.2%	224.9%
Barriere	Low	ESSFdc3	4,758.5	666.2	1,033.6	14%	21.7%	155.2%
		ESSFdcw	533.8	48.0	0.0	9%	0.0%	0.0%
		ESSFwc2	27,385.6	5,203.3	462.7	19%	1.7%	8.9%
		ESSFwcw	4,676.7	888.6	98.4	19%	2.1%	11.1%
		ICHdw3	26,262.6	3,676.8	7,353.6	14%	28.0%	200.0%
		ICHmk2	13,363.2	1,870.8	2,067.9	14%	15.5%	110.5%
		ICHmw3	6,892.1	620.3	1.0	9%	0.0%	0.2%
		ICHwk1	8,044.8	1,045.8	489.1	13%	6.1%	46.8%
		IDFdk2	913.6	118.8	0.0	13%	0.0%	0.0%
		IDFmw2	7,322.1	951.9	0.0	13%	0.0%	0.0%
		IDFhx2	95.4	12.4	0.0	13%	0.0%	0.0%
MSdm3	4,403.5	616.5	315.1	14%	7.2%	51.1%		
Bonaparte	Low	ESSFdc3	9,916.2	1,388.3	2,571.9	14%	25.9%	185.3%
		MSdm3	6,203.0	868.4	1,338.0	14%	21.6%	154.1%
		MSxk2	6,551.9	917.3	1,248.2	14%	19.1%	136.1%
		SBPsmk	1,357.8	95.0	154.0	7%	11.3%	162.0%
		SBSdw1	1,718.0	189.0	506.1	11%	29.5%	267.8%
		SBSmm	3,090.7	340.0	404.0	11%	13.1%	118.8%
Campbell	Int.	ESSFdc2	516.6	72.3	38.4	14%	7.4%	53.0%
		ESSFdc3	1,050.1	147.0	156.5	14%	14.9%	106.4%
		ESSFxc2	182.4	25.5	60.3	14%	33.0%	236.0%
		ICHmk2	4,683.9	655.7	467.3	14%	10.0%	71.3%
		ICHmw3	1,235.7	111.2	0.0	9%	0.0%	0.0%
		IDFdk1	22,355.9	2,906.3	21.4	13%	0.1%	0.7%
		IDFdk2	2,821.5	366.8	0.0	13%	0.0%	0.0%
		IDFmw2	6,979.8	907.4	0.0	13%	0.0%	0.0%
		IDFhx2	18,626.9	2,421.5	13.3	13%	0.1%	0.6%
		MSdm2	3,592.8	503.0	223.3	14%	6.2%	44.4%
		MSdm3	5,022.2	703.1	413.1	14%	8.2%	58.8%
		MSxk2	5,170.2	723.8	283.8	14%	5.5%	39.2%
PPxh2	7,842.9	1,019.6	0.0	13%	0.0%	0.0%		

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Old (ha)	Existing Old (ha)	Target Old (%)	Existing Old (%)	% of Target Met
Cayenne	Int.	ESSFwc2	14,746.7	2,801.9	1,510.4	19%	10.2%	53.9%
		ESSFwcw	4,716.2	896.1	385.5	19%	8.2%	43.0%
		ICHdw3	154.3	21.6	35.4	14%	23.0%	164.0%
		ICHmw3	16,164.4	1,454.8	509.4	9%	3.2%	35.0%
		ICHwk1	7,341.4	954.4	321.6	13%	4.4%	33.7%
Clearwater	Low	ESSFdc3	14,605.0	2,044.7	3,509.8	14%	24.0%	171.7%
		ESSFdcw	244.4	22.0	0.0	9%	0.0%	0.0%
		ESSFwc2	33,175.4	6,303.3	2,711.6	19%	8.2%	43.0%
		ESSFwcw	3,884.2	738.0	1,012.1	19%	26.1%	137.1%
		ICHdw3	10,408.7	1,457.2	1,035.4	14%	9.9%	71.1%
		ICHmk2	13,700.4	1,918.0	1,182.1	14%	8.6%	61.6%
		ICHmk3	50.8	4.6	0.0	9%	0.0%	0.0%
		ICHmw3	16,101.2	1,449.1	996.3	9%	6.2%	68.8%
		IDFmw2	6,928.3	900.7	6.8	13%	0.1%	0.8%
SBSmm	25,666.1	2,823.3	4,460.0	11%	17.4%	158.0%		
Darfield	Int.	ESSFdc3	4,247.9	594.7	1,008.2	14%	23.7%	169.5%
		ICHmk2	7,121.8	997.1	632.3	14%	8.9%	63.4%
		IDFmw2	6,239.1	811.1	0.0	13%	0.0%	0.0%
		IDFhx2	172.7	22.4	0.0	13%	0.0%	0.0%
		MSdm3	8,607.4	1,205.0	756.7	14%	8.8%	62.8%
		SBSmm	4,407.5	484.8	301.8	11%	6.8%	62.3%
Deadman	Int.	ESSFdc3	157.4	22.0	40.4	14%	25.7%	183.3%
		ESSFxc2	10,632.2	1,488.5	3,615.8	14%	34.0%	242.9%
		IDFdk1	10,190.9	1,324.8	140.1	13%	1.4%	10.6%
		IDFdk3	22,261.7	2,894.0	155.1	13%	0.7%	5.4%
		IDFhx2	12,884.8	1,675.0	221.9	13%	1.7%	13.2%
		MSdm3	1,805.8	252.8	1,168.5	14%	64.7%	462.2%
		MSxk2	26,902.1	3,766.3	5,787.0	14%	21.5%	153.7%
		PPxh2	48.9	6.4	0.0	13%	0.0%	0.0%
		SBPSmk	10,080.5	705.6	1,243.2	7%	12.3%	176.2%
Dewdrop	High	IDFdk1	6,938.1	1,318.2	12.2	19%	0.2%	0.9%
		IDFhx2	7,320.8	1,390.9	45.2	19%	0.6%	3.3%
		PPxh2	2,888.1	548.7	3.5	19%	0.1%	0.6%

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Old (ha)	Existing Old (ha)	Target Old (%)	Existing Old (%)	% of Target Met
Dunn	High	ESSFdc3	9,821.7	2,062.6	4,556.0	21%	46.4%	220.9%
		ESSFdcw	4,234.3	550.5	101.5	13%	2.4%	18.4%
		ESSFwc2	2.7	0.8	0.0	28%	0.0%	0.0%
		ESSFwcw	16.3	4.6	0.2	28%	1.4%	5.1%
		ICHmk2	847.6	178.0	177.4	21%	20.9%	99.6%
		IDFmw2	10,686.3	2,030.4	0.0	19%	0.0%	0.0%
		IDFhx2	1,219.3	231.7	0.0	19%	0.0%	0.0%
		MSdm3	4,716.0	990.4	1,063.3	21%	22.5%	107.4%
Hat Creek	Int.	ESSFxc2	1,411.6	197.6	755.2	14%	53.5%	382.1%
		ESSFxc3	3,606.0	504.8	867.2	14%	24.0%	171.8%
		ESSFxcw	1,439.0	201.5	629.6	14%	43.8%	312.5%
		IDFdk1	16,427.9	2,135.6	334.4	13%	2.0%	15.7%
		IDFhx2	19,074.9	2,479.7	198.9	13%	1.0%	8.0%
		MSxk3	15,458.4	2,164.2	3,887.4	14%	25.1%	179.6%
		PPxh2	944.4	122.8	0.0	13%	0.0%	0.0%
Heffley	Int.	ESSFdc3	228.0	31.9	18.1	14%	7.9%	56.7%
		ESSFxc2	98.3	13.8	7.9	14%	8.0%	57.1%
		ICHmk2	657.6	92.1	57.6	14%	8.8%	62.6%
		IDFdk1	4,879.9	634.4	19.4	13%	0.4%	3.1%
		IDFdk2	5,109.8	664.3	0.0	13%	0.0%	0.0%
		IDFmw2	608.2	79.1	0.0	13%	0.0%	0.0%
		IDFhx2	12,474.9	1,621.7	1.9	13%	0.0%	0.1%
		MSdm3	10,425.5	1,459.6	2,036.3	14%	19.5%	139.5%
		MSxk2	3,396.3	475.5	746.4	14%	22.0%	157.0%
		PPxh2	2,782.4	361.7	0.0	13%	0.0%	0.0%
Lac du Bois	High	IDFdk1	1,968.2	374.0	6.7	19%	0.3%	1.8%
		IDFdk2	2,927.8	556.3	0.0	19%	0.0%	0.0%
		IDFhx2	6,988.8	1,327.9	7.4	19%	0.1%	0.6%
		MSdm3	854.9	179.5	220.7	21%	25.8%	123.0%
		PPxh2	2,226.4	423.0	2.1	19%	0.1%	0.5%
Louis Creek	High	ESSFdc3	11,183.8	2,348.6	1,773.7	21%	15.9%	75.5%
		ESSFdcw	545.4	70.9	0.0	13%	0.0%	0.0%
		ICHmk2	4,495.1	944.0	747.5	21%	16.6%	79.2%
		IDFdk2	9,859.3	1,873.3	0.0	19%	0.0%	0.0%
		IDFmw2	6,635.7	1,260.8	0.0	19%	0.0%	0.0%
		IDFhx2	10.6	2.0	0.0	19%	0.0%	0.0%
		MSdm3	12,436.1	2,611.6	2,429.0	21%	19.5%	93.0%

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Old (ha)	Existing Old (ha)	Target Old (%)	Existing Old (%)	% of Target Met
Lower Adams	Int.	ESSFdc3	7,502.3	1,050.3	1,860.5	14%	24.8%	177.1%
		ESSFdcw	789.8	71.1	0.0	9%	0.0%	0.0%
		ICHmk2	2,336.8	327.2	638.5	14%	27.3%	195.2%
		ICHmw3	4,777.8	430.0	0.0	9%	0.0%	0.0%
		IDFmw2	4,759.0	618.7	8.1	13%	0.2%	1.3%
		IDFhx2	488.5	63.5	0.0	13%	0.0%	0.0%
Lower Bonaparte	Int.	ESSFxc2	227.8	31.9	27.4	14%	12.0%	86.0%
		ESSFxc3	106.7	14.9	74.4	14%	69.7%	497.7%
		IDFdk1	13,216.4	1,718.1	315.6	13%	2.4%	18.4%
		IDFdk3	6,103.9	793.5	52.4	13%	0.9%	6.6%
		IDFhx2	11,106.9	1,443.9	193.9	13%	1.7%	13.4%
		IDFwx	4,707.1	611.9	0.0	13%	0.0%	0.0%
		MSxk2	8,871.4	1,242.0	1,343.6	14%	15.1%	108.2%
		MSxk3	3,004.0	420.6	700.8	14%	23.3%	166.6%
PPhx2	3,543.5	496.1	6.3	14%	0.2%	1.3%		
Mad	Low	ESSFwc2	23,217.6	3,250.5	1,151.3	14%	5.0%	35.4%
		ESSFwcw	1,828.3	256.0	0.0	14%	0.0%	0.0%
		ICHdw3	15,037.2	2,105.2	900.1	14%	6.0%	42.8%
		ICHmw3	14,171.7	1,984.0	318.3	14%	2.2%	16.0%
		ICHwk1	3,629.7	508.2	280.3	14%	7.7%	55.2%
		IDFmw2	1,330.4	186.3	0.0	14%	0.0%	0.0%
Mica	Low	ESSFwc2	15,533.9	2,174.7	354.3	14%	2.3%	16.3%
		ESSFwcw	1,616.1	226.2	13.6	14%	0.8%	6.0%
		ICHdw3	12,475.5	1,746.6	511.3	14%	4.1%	29.3%
		ICHmw3	12,805.2	1,792.7	117.8	14%	0.9%	6.6%
		ICHwk1	8,409.3	1,177.3	623.8	14%	7.4%	53.0%
Mud	Int.	ESSFwc2	10,879.9	1,523.2	1,604.1	14%	14.7%	105.3%
		ESSFwcw	7,588.7	1,062.4	407.6	14%	5.4%	38.4%
		ICHmw3	871.8	122.1	256.9	14%	29.5%	210.5%
		ICHvk1	3,922.1	549.1	1,331.2	14%	33.9%	242.4%
		ICHwk1	11,679.8	1,635.2	2,328.3	14%	19.9%	142.4%
Nehalliston	Int.	ESSFdc3	7,468.8	1,045.6	1,598.1	14%	21.4%	152.8%
		ICHmk2	6,172.0	864.1	693.9	14%	11.2%	80.3%
		IDFmw2	5,465.2	765.1	34.1	14%	0.6%	4.5%
		SBSdw1	3,844.6	538.2	399.3	14%	10.4%	74.2%
		SBSmm	19,630.6	2,748.3	3,777.9	14%	19.2%	137.5%



COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Old (ha)	Existing Old (ha)	Target Old (%)	Existing Old (%)	% of Target Met
Raft	Low	ESSFwc2	36,958.6	5,174.2	3,000.6	14%	8.1%	<b>58.0%</b>
		ESSFwcw	2,244.5	314.2	253.4	14%	11.3%	<b>80.6%</b>
		ICHdw3	10,440.9	1,461.7	665.1	14%	6.4%	<b>45.5%</b>
		ICHmk2	3,010.5	421.5	402.2	14%	13.4%	<b>95.4%</b>
		ICHmw3	10,095.7	1,413.4	202.0	14%	2.0%	<b>14.3%</b>
		ICHvk1	555.0	77.7	170.2	14%	30.7%	<b>219.0%</b>
		ICHwk1	3,764.9	527.1	193.0	14%	5.1%	<b>36.6%</b>
		IDFmw2	1,027.2	143.8	0.0	14%	0.0%	<b>0.0%</b>
SBSmm	2,556.8	358.0	318.3	14%	12.5%	<b>88.9%</b>		
S. Kamloops	Int.	ESSFxc2	543.6	76.1	263.9	14%	48.5%	<b>346.7%</b>
		IDFdk1	14,459.9	1,879.8	78.8	13%	0.5%	<b>4.2%</b>
		IDFhx2	12,553.8	1,632.0	43.6	13%	0.3%	<b>2.7%</b>
		MSxk2	7,278.2	1,018.9	1,380.1	14%	19.0%	<b>135.4%</b>
		PPxh2	5,171.3	672.3	5.2	13%	0.1%	<b>0.8%</b>
Skull	Low	ESSFdc3	8,507.2	1,191.0	931.3	14%	10.9%	<b>78.2%</b>
		ESSFxc2	3,137.5	439.2	412.0	14%	13.1%	<b>93.8%</b>
		ICHmk2	2,236.6	313.1	236.7	14%	10.6%	<b>75.6%</b>
		IDFdk2	4,231.9	550.2	0.0	13%	0.0%	<b>0.0%</b>
		IDFmw2	4,904.8	637.6	0.0	13%	0.0%	<b>0.0%</b>
		IDFhx2	6,218.9	808.5	0.0	13%	0.0%	<b>0.0%</b>
		MSdm3	24,689.4	3,456.5	3,567.0	14%	14.4%	<b>103.2%</b>
		MSxk2	22.0	3.1	10.7	14%	48.6%	<b>347.4%</b>
PPxh2	1,277.9	166.1	0.0	13%	0.0%	<b>0.0%</b>		
Stump Lake	Int.	ESSFxc2	117.9	16.5	30.8	14%	26.1%	<b>186.3%</b>
		IDFdk1	9,805.7	1,274.7	5.9	13%	0.1%	<b>0.5%</b>
		IDFhx2	868.0	112.8	0.0	13%	0.0%	<b>0.0%</b>
		MSdm2	287.9	40.3	6.6	14%	2.3%	<b>16.3%</b>
		MSxk2	10,289.4	1,440.5	955.5	14%	9.3%	<b>66.3%</b>
		PPxh2	202.2	26.3	0.0	13%	0.0%	<b>0.0%</b>
Thunder Blue	Low	ESSFwc2	16,892.1	3,209.5	2,724.2	19%	16.1%	<b>84.9%</b>
		ESSFwcw	7,044.6	1,338.5	158.2	19%	2.2%	<b>11.8%</b>
		ICHmw3	1,778.2	160.0	264.0	9%	14.8%	<b>165.0%</b>
		ICHvk1	7,193.8	935.2	2,714.8	13%	37.7%	<b>290.3%</b>
		ICHwk1	15,748.4	2,047.3	5,867.6	13%	37.3%	<b>286.6%</b>

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Old (ha)	Existing Old (ha)	Target Old (%)	Existing Old (%)	% of Target Met
Tranquille	Int.	ESSFdc3	2,443.8	342.1	158.5	14%	6.5%	46.3%
		ESSFxc2	2,523.2	353.2	743.0	14%	29.4%	210.3%
		IDFdk1	9,978.0	1,297.1	6.5	13%	0.1%	0.5%
		IDFdk2	1,521.0	197.7	0.0	13%	0.0%	0.0%
		IDFdk3	1,077.2	140.0	0.0	13%	0.0%	0.0%
		IDFhx2	753.6	98.0	0.0	13%	0.0%	0.0%
		MSdm3	3,514.7	492.1	379.8	14%	10.8%	77.2%
		MSxk2	9,677.0	1,354.8	558.1	14%	5.8%	41.2%
Tum Tum	Int.	ESSFvc	1,887.6	358.7	188.2	19%	10.0%	52.5%
		ESSFvcw	1,652.1	313.9	67.7	19%	4.1%	21.6%
		ESSFwc2	17,011.2	3,232.1	901.0	19%	5.3%	27.9%
		ESSFwcw	9,006.5	1,711.2	263.9	19%	2.9%	15.4%
		ICHdw3	11.1	1.6	4.0	14%	36.0%	257.3%
		ICHmw3	3,714.0	334.3	89.5	9%	2.4%	26.8%
		ICHvk1	17,983.4	2,337.8	4,817.7	13%	26.8%	206.1%
		ICHwk1	16,554.1	2,152.0	1,268.9	13%	7.7%	59.0%
Upper Guichon	Low	ESSFxc2	2,310.0	323.4	802.9	14%	34.8%	248.3%
		IDFdk1	32,118.9	4,175.5	195.1	13%	0.6%	4.7%
		IDFhx2	8.8	1.1	0.0	13%	0.0%	0.0%
		MSxk2	28,115.9	3,936.2	4,011.1	14%	14.3%	101.9%
Upper N. Thompson	Int.	ESSFwc2	26,702.9	5,073.6	5,675.7	19%	21.3%	111.9%
		ESSFwcw	13,151.6	2,498.8	351.8	19%	2.7%	14.1%
		ICHvk1	9,175.2	1,192.8	3,591.8	13%	39.1%	301.1%
		ICHwk1	4,889.1	635.6	1,312.5	13%	26.8%	206.5%
Vavenby	Low	ESSFdc3	147.5	20.7	14.2	14%	9.6%	68.6%
		ESSFdcw	83.3	7.5	14.6	9%	17.6%	195.3%
		ESSFwc2	7,673.4	1,457.9	287.3	19%	3.7%	19.7%
		ESSFwcw	527.3	100.2	58.6	19%	11.1%	58.5%
		ICHdw3	4,913.8	687.9	678.8	14%	13.8%	98.7%
		ICHmk2	491.7	68.8	154.5	14%	31.4%	224.5%
		ICHmw3	4,635.4	417.2	285.3	9%	6.2%	68.4%
		IDFmw2	4,473.7	581.6	19.4	13%	0.4%	3.3%
		SBSmm	1,946.0	214.1	249.8	11%	12.8%	116.7%
		<b>Total</b>	<b>1,723,540.9</b>	<b>253,053.0</b>	<b>172,899.6</b>			

## Amount of Mature-plus-Old Forest

Table 24 compares the CE-CFLB area (column A), the mature-plus-old forest target (column B), and the amount of mature-plus-old forest (column C) relative to the targets for all AUs (LU, BEO, BEC). The amount of CE-CFLB that is mature-plus-old forest within that AU is shown as a percentage of the total CE-CFLB for that AU (column C/A), using the gradient scale shown from Figure 6 above. The current condition of that AU (column C/B), meaning the percentage of the mature-plus-old forest target that is currently being met in that AU, is then shown using the gradient scale shown above from Table 8.

**Table 24.** Assessment Units Compared to the Mature-plus-Old Growth Forest Policy Targets by Assessment Unit (AU) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

COLUMN CALCULATIONS:			A	B	C	-	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Mat+Old (ha)	Existing Mat+Old (ha)	Target Mat+Old (%)	Existing Mat+Old (%)	% of Target Met
Adams Lake	Low	ESSFdc3	6,444.2	902.2	2,492.6	14%	38.7%	276.3%
		ESSFdcw	1,505.7	210.8	550.5	14%	36.6%	261.2%
		ESSFwc2	14,165.8	2,691.5	5,024.4	19%	35.5%	186.7%
		ESSFwcw	597.8	113.6	515.6	19%	86.2%	453.9%
		ICHdw3	3,355.3	469.7	1,601.7	14%	47.7%	341.0%
		ICHmk2	10,438.1	1,461.3	3,317.0	14%	31.8%	227.0%
		ICHmw3	27,379.2	4,106.9	10,032.5	15%	36.6%	244.3%
		ICHwk1	5,569.1	946.7	1,977.2	17%	35.5%	208.8%
		IDFdk2	361.2	61.4	290.1	17%	80.3%	472.4%
		IDFmw2	15,437.8	2,624.4	7,645.7	17%	49.5%	291.3%
		IDFhx2	172.2	29.3	156.8	17%	91.0%	535.6%
MSdm3	6,317.3	884.4	2,375.5	14%	37.6%	268.6%		
Albreda	Low	ESSFmm1	1,044.6	146.2	662.6	14%	63.4%	453.1%
		ESSFmmw	559.9	78.4	422.2	14%	75.4%	538.6%
		ESSFwc2	13,301.4	2,527.3	7,962.7	19%	59.9%	315.1%
		ESSFwcw	8,133.7	1,545.4	4,457.6	19%	54.8%	288.4%
		ICHmm	1,213.7	182.1	683.7	15%	56.3%	375.6%
		ICHvk1	5,620.6	955.5	3,416.4	17%	60.8%	357.5%
		ICHwk1	7,726.2	1,313.5	4,605.0	17%	59.6%	350.6%
SBSdh1	367.2	40.4	111.6	11%	30.4%	276.3%		
Ashcroft	High	ESSFxc2	2,251.1	765.4	1,282.2	34%	57.0%	167.5%
		ESSFxcw	47.0	16.0	43.5	34%	92.5%	272.0%
		IDFdk1	26,212.4	13,368.3	11,751.2	51%	44.8%	87.9%
		IDFhx2	25,538.4	13,024.6	15,244.2	51%	59.7%	117.0%
		MSxk2	15,168.7	5,915.8	4,762.8	39%	31.4%	80.5%
		MSxk3	3,965.0	1,546.3	2,545.0	39%	64.2%	164.6%
		PPxh2	13,196.6	6,730.3	7,350.5	51%	55.7%	109.2%

COLUMN CALCULATIONS:			A	B	C	-	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Mat+Old (ha)	Existing Mat+Old (ha)	Target Mat+Old (%)	Existing Mat+Old (%)	% of Target Met
Avola	Low	ESSFwc2	23,638.5	4,491.3	12,765.5	19%	54.0%	284.2%
		ESSFwcw	5,209.3	989.8	4,764.5	19%	91.5%	481.4%
		ICHdw3	3,315.5	464.2	673.6	14%	20.3%	145.1%
		ICHmw3	14,987.6	2,248.1	6,697.4	15%	44.7%	297.9%
		ICHvk1	1,303.3	221.6	737.1	17%	56.6%	332.7%
		ICHwk1	8,022.7	1,363.9	4,730.4	17%	59.0%	346.8%
Barriere	Low	ESSFdc3	4,758.5	666.2	1,575.1	14%	33.1%	236.4%
		ESSFdcw	533.8	74.7	289.9	14%	54.3%	387.9%
		ESSFwc2	27,385.6	5,203.3	14,106.0	19%	51.5%	271.1%
		ESSFwcw	4,676.7	888.6	3,576.2	19%	76.5%	402.5%
		ICHdw3	26,262.6	3,676.8	10,626.3	14%	40.5%	289.0%
		ICHmk2	13,363.2	1,870.8	5,033.9	14%	37.7%	269.1%
		ICHmw3	6,892.1	1,033.8	2,330.4	15%	33.8%	225.4%
		ICHwk1	8,044.8	1,367.6	4,279.8	17%	53.2%	312.9%
		IDFdk2	913.6	155.3	549.0	17%	60.1%	353.5%
		IDFmw2	7,322.1	1,244.8	2,472.5	17%	33.8%	198.6%
		IDFhx2	95.4	16.2	3.3	17%	3.5%	20.3%
MSdm3	4,403.5	616.5	1,202.9	14%	27.3%	195.1%		
Bonaparte	Low	ESSFdc3	9,916.2	1,388.3	3,881.3	14%	39.1%	279.6%
		MSdm3	6,203.0	868.4	2,511.7	14%	40.5%	289.2%
		MSxk2	6,551.9	917.3	2,252.0	14%	34.4%	245.5%
		SBPsmk	1,357.8	108.6	364.6	8%	26.9%	335.7%
		SBSdw1	1,718.0	189.0	949.3	11%	55.3%	502.3%
		SBSmm	3,090.7	340.0	1,134.2	11%	36.7%	333.6%
Campbell	Int.	ESSFdc2	516.6	118.8	82.4	23%	16.0%	69.4%
		ESSFdc3	1,050.1	241.5	168.6	23%	16.1%	69.8%
		ESSFxc2	182.4	41.9	68.4	23%	37.5%	163.1%
		ICHmk2	4,683.9	1,077.3	625.7	23%	13.4%	58.1%
		ICHmw3	1,235.7	383.1	341.3	31%	27.6%	89.1%
		IDFdk1	22,355.9	7,601.0	9,080.1	34%	40.6%	119.5%
		IDFdk2	2,821.5	959.3	1,330.1	34%	47.1%	138.7%
		IDFmw2	6,979.8	2,373.1	2,772.7	34%	39.7%	116.8%
		IDFhx2	18,626.9	6,333.2	10,848.4	34%	58.2%	171.3%
		MSdm2	3,592.8	934.1	576.0	26%	16.0%	61.7%
		MSdm3	5,022.2	1,305.8	1,223.8	26%	24.4%	93.7%
		MSxk2	5,170.2	1,344.3	795.2	26%	15.4%	59.2%
PPxh2	7,842.9	2,666.6	3,538.5	34%	45.1%	132.7%		

COLUMN CALCULATIONS:			A	B	C	-	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Mat+Old (ha)	Existing Mat+Old (ha)	Target Mat+Old (%)	Existing Mat+Old (%)	% of Target Met
Cayenne	Int.	ESSFwc2	14,746.7	5,308.8	5,648.4	36%	38.3%	106.4%
		ESSFwcw	4,716.2	1,697.8	3,544.7	36%	75.2%	208.8%
		ICHdw3	154.3	35.5	48.1	23%	31.2%	135.7%
		ICHmw3	16,164.4	5,011.0	5,228.5	31%	32.3%	104.3%
		ICHwk1	7,341.4	2,496.1	1,985.1	34%	27.0%	79.5%
Clearwater	Low	ESSFdc3	14,605.0	2,044.7	5,225.7	14%	35.8%	255.6%
		ESSFdcw	244.4	34.2	85.3	14%	34.9%	249.4%
		ESSFwc2	33,175.4	6,303.3	11,158.2	19%	33.6%	177.0%
		ESSFwcw	3,884.2	738.0	2,919.3	19%	75.2%	395.6%
		ICHdw3	10,408.7	1,457.2	2,765.8	14%	26.6%	189.8%
		ICHmk2	13,700.4	1,918.0	4,558.1	14%	33.3%	237.6%
		ICHmk3	50.8	7.6	3.3	15%	6.5%	43.5%
		ICHmw3	16,101.2	2,415.2	7,199.9	15%	44.7%	298.1%
		IDFmw2	6,928.3	1,177.8	1,914.4	17%	27.6%	162.5%
SBSmm	25,666.1	2,823.3	7,224.9	11%	28.1%	255.9%		
Darfield	Int.	ESSFdc3	4,247.9	977.0	1,721.2	23%	40.5%	176.2%
		ICHmk2	7,121.8	1,638.0	1,805.0	23%	25.3%	110.2%
		IDFmw2	6,239.1	2,121.3	2,274.7	34%	36.5%	107.2%
		IDFhx2	172.7	58.7	62.4	34%	36.1%	106.3%
		MSdm3	8,607.4	2,237.9	2,114.4	26%	24.6%	94.5%
		SBSmm	4,407.5	1,013.7	1,406.3	23%	31.9%	138.7%
Deadman	Int.	ESSFdc3	157.4	36.2	51.3	23%	32.6%	141.7%
		ESSFxc2	10,632.2	2,445.4	4,611.2	23%	43.4%	188.6%
		IDFdk1	10,190.9	3,464.9	5,331.2	34%	52.3%	153.9%
		IDFdk3	22,261.7	7,569.0	7,764.0	34%	34.9%	102.6%
		IDFhx2	12,884.8	4,380.8	9,059.5	34%	70.3%	206.8%
		MSdm3	1,805.8	469.5	1,590.4	26%	88.1%	338.7%
		MSxk2	26,902.1	6,994.6	10,785.4	26%	40.1%	154.2%
		PPxh2	48.9	16.6	0.2	34%	0.3%	1.0%
		SBPSmk	10,080.5	1,713.7	2,857.5	17%	28.3%	166.7%
Dewdrop	High	IDFdk1	6,938.1	3,538.4	4,357.2	51%	62.8%	123.1%
		IDFhx2	7,320.8	3,733.6	5,341.5	51%	73.0%	143.1%
		PPxh2	2,888.1	1,472.9	2,316.8	51%	80.2%	157.3%

COLUMN CALCULATIONS:			A	B	C	-	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Mat+Old (ha)	Existing Mat+Old (ha)	Target Mat+Old (%)	Existing Mat+Old (%)	% of Target Met
Dunn	High	ESSFdc3	9,821.7	3,339.4	5,575.2	34%	56.8%	167.0%
		ESSFdcw	4,234.3	1,778.4	3,467.7	42%	81.9%	195.0%
		ESSFwc2	2.7	1.5	2.7	54%	100.0%	185.2%
		ESSFwcw	16.3	8.8	0.7	54%	4.6%	8.5%
		ICHmk2	847.6	288.2	458.6	34%	54.1%	159.1%
		IDFmw2	10,686.3	5,450.0	6,067.3	51%	56.8%	111.3%
		IDFhx2	1,219.3	621.9	846.5	51%	69.4%	136.1%
		MSdm3	4,716.0	1,839.2	2,388.4	39%	50.6%	129.9%
Hat Creek	Int.	ESSFxc2	1,411.6	324.7	910.8	23%	64.5%	280.5%
		ESSFxc3	3,606.0	829.4	2,048.4	23%	56.8%	247.0%
		ESSFxcw	1,439.0	331.0	823.6	23%	57.2%	248.9%
		IDFdk1	16,427.9	5,585.5	10,632.3	34%	64.7%	190.4%
		IDFhx2	19,074.9	6,485.5	11,191.3	34%	58.7%	172.6%
		MSxk3	15,458.4	4,019.2	10,570.4	26%	68.4%	263.0%
		PPxh2	944.4	321.1	403.3	34%	42.7%	125.6%
Heffley	Int.	ESSFdc3	228.0	52.4	91.5	23%	40.1%	174.5%
		ESSFxc2	98.3	22.6	24.0	23%	24.4%	105.9%
		ICHmk2	657.6	151.2	115.9	23%	17.6%	76.6%
		IDFdk1	4,879.9	1,659.2	2,618.6	34%	53.7%	157.8%
		IDFdk2	5,109.8	1,737.3	1,970.0	34%	38.6%	113.4%
		IDFmw2	608.2	206.8	110.1	34%	18.1%	53.3%
		IDFhx2	12,474.9	4,241.5	5,551.1	34%	44.5%	130.9%
		MSdm3	10,425.5	2,710.6	2,823.1	26%	27.1%	104.1%
		MSxk2	3,396.3	883.0	1,185.3	26%	34.9%	134.2%
		PPxh2	2,782.4	946.0	1,128.3	34%	40.6%	119.3%
Lac du Bois	High	IDFdk1	1,968.2	1,003.8	991.9	51%	50.4%	98.8%
		IDFdk2	2,927.8	1,493.2	1,709.2	51%	58.4%	114.5%
		IDFhx2	6,988.8	3,564.3	4,975.8	51%	71.2%	139.6%
		MSdm3	854.9	333.4	330.4	39%	38.7%	99.1%
		PPxh2	2,226.4	1,135.5	1,378.6	51%	61.9%	121.4%
Louis Creek	High	ESSFdc3	11,183.8	3,802.5	2,869.3	34%	25.7%	75.5%
		ESSFdcw	545.4	229.1	239.2	42%	43.9%	104.4%
		ICHmk2	4,495.1	1,528.3	1,685.6	34%	37.5%	110.3%
		IDFdk2	9,859.3	5,028.3	4,535.1	51%	46.0%	90.2%
		IDFmw2	6,635.7	3,384.2	2,447.0	51%	36.9%	72.3%
		IDFhx2	10.6	5.4	2.3	51%	21.5%	42.2%
		MSdm3	12,436.1	4,850.1	4,015.9	39%	32.3%	82.8%

COLUMN CALCULATIONS:			A	B	C	-	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Mat+Old (ha)	Existing Mat+Old (ha)	Target Mat+Old (%)	Existing Mat+Old (%)	% of Target Met
Lower Adams	Int.	ESSFdc3	7,502.3	1,725.5	2,688.2	23%	35.8%	155.8%
		ESSFdcw	789.8	221.1	499.4	28%	63.2%	225.8%
		ICHmk2	2,336.8	537.5	1,436.1	23%	61.5%	267.2%
		ICHmw3	4,777.8	1,481.1	2,048.1	31%	42.9%	138.3%
		IDFmw2	4,759.0	1,618.0	1,874.3	34%	39.4%	115.8%
		IDFhx2	488.5	166.1	361.8	34%	74.1%	217.9%
Lower Bonaparte	Int.	ESSFxc2	227.8	52.4	61.2	23%	26.9%	116.8%
		ESSFxc3	106.7	24.5	92.1	23%	86.3%	375.2%
		IDFdk1	13,216.4	4,493.6	8,689.1	34%	65.7%	193.4%
		IDFdk3	6,103.9	2,075.3	3,026.3	34%	49.6%	145.8%
		IDFhx2	11,106.9	3,776.4	8,116.1	34%	73.1%	214.9%
		IDFwx	4,707.1	1,600.4	3,757.0	34%	79.8%	234.8%
		MSxk2	8,871.4	2,306.6	3,952.4	26%	44.6%	171.4%
		MSxk3	3,004.0	781.0	2,094.5	26%	69.7%	268.2%
PPxh2	3,543.5	1,204.8	2,243.4	34%	63.3%	186.2%		
Mad	Low	ESSFwc2	23,217.6	4,411.3	11,863.0	19%	51.1%	268.9%
		ESSFwcw	1,828.3	347.4	1,763.2	19%	96.4%	507.6%
		ICHdw3	15,037.2	2,105.2	3,280.9	14%	21.8%	155.8%
		ICHmw3	14,171.7	2,125.8	4,558.5	15%	32.2%	214.4%
		ICHwk1	3,629.7	617.0	2,443.6	17%	67.3%	396.0%
		IDFmw2	1,330.4	226.2	192.3	17%	14.5%	85.0%
Mica	Low	ESSFwc2	15,533.9	2,951.4	5,615.2	19%	36.1%	190.3%
		ESSFwcw	1,616.1	307.1	1,554.5	19%	96.2%	506.3%
		ICHdw3	12,475.5	1,746.6	5,046.7	14%	40.5%	288.9%
		ICHmw3	12,805.2	1,920.8	4,831.7	15%	37.7%	251.5%
		ICHwk1	8,409.3	1,429.6	3,827.3	17%	45.5%	267.7%
Mud	Int.	ESSFwc2	10,879.9	3,916.8	6,804.3	36%	62.5%	173.7%
		ESSFwcw	7,588.7	2,731.9	4,642.9	36%	61.2%	169.9%
		ICHmw3	871.8	270.3	555.2	31%	63.7%	205.4%
		ICHvk1	3,922.1	1,333.5	2,610.8	34%	66.6%	195.8%
		ICHwk1	11,679.8	3,971.1	6,637.3	34%	56.8%	167.1%
Nehalliston	Int.	ESSFdc3	7,468.8	1,717.8	3,528.0	23%	47.2%	205.4%
		ICHmk2	6,172.0	1,419.6	3,037.1	23%	49.2%	213.9%
		IDFmw2	5,465.2	1,858.2	2,868.1	34%	52.5%	154.4%
		SBSdw1	3,844.6	884.3	2,473.5	23%	64.3%	279.7%
		SBSmm	19,630.6	4,515.0	10,232.3	23%	52.1%	226.6%

COLUMN CALCULATIONS:			A	B	C	-	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Mat+Old (ha)	Existing Mat+Old (ha)	Target Mat+Old (%)	Existing Mat+Old (%)	% of Target Met
Raft	Low	ESSFwc2	36,958.6	7,022.1	19,821.2	19%	53.6%	282.3%
		ESSFwcw	2,244.5	426.4	1,776.9	19%	79.2%	416.7%
		ICHdw3	10,440.9	1,461.7	1,324.7	14%	12.7%	90.6%
		ICHmk2	3,010.5	421.5	695.0	14%	23.1%	164.9%
		ICHmw3	10,095.7	1,514.3	2,058.7	15%	20.4%	135.9%
		ICHvk1	555.0	94.4	407.9	17%	73.5%	432.3%
		ICHwk1	3,764.9	640.0	1,501.5	17%	39.9%	234.6%
		IDFmw2	1,027.2	174.6	166.5	17%	16.2%	95.3%
SBSmm	2,556.8	281.3	847.1	11%	33.1%	301.2%		
S. Kamloops	Int.	ESSFxc2	543.6	125.0	328.7	23%	60.5%	262.9%
		IDFdk1	14,459.9	4,916.4	6,174.7	34%	42.7%	125.6%
		IDFhx2	12,553.8	4,268.3	8,359.5	34%	66.6%	195.9%
		MSxk2	7,278.2	1,892.3	1,963.5	26%	27.0%	103.8%
		PPxh2	5,171.3	1,758.2	3,838.8	34%	74.2%	218.3%
Skull	Low	ESSFdc3	8,507.2	1,191.0	1,413.8	14%	16.6%	118.7%
		ESSFxc2	3,137.5	439.2	786.7	14%	25.1%	179.1%
		ICHmk2	2,236.6	313.1	382.0	14%	17.1%	122.0%
		IDFdk2	4,231.9	719.4	2,284.1	17%	54.0%	317.5%
		IDFmw2	4,904.8	833.8	1,429.6	17%	29.1%	171.5%
		IDFhx2	6,218.9	1,057.2	3,526.8	17%	56.7%	333.6%
		MSdm3	24,689.4	3,456.5	5,996.5	14%	24.3%	173.5%
		MSxk2	22.0	3.1	22.0	14%	100.0%	714.3%
		PPxh2	1,277.9	217.2	600.0	17%	47.0%	276.2%
Stump Lake	Int.	ESSFxc2	117.9	27.1	31.6	23%	26.8%	116.6%
		IDFdk1	9,805.7	3,333.9	3,177.3	34%	32.4%	95.3%
		IDFhx2	868.0	295.1	422.1	34%	48.6%	143.0%
		MSdm2	287.9	74.8	26.8	26%	9.3%	35.8%
		MSxk2	10,289.4	2,675.2	2,258.2	26%	21.9%	84.4%
		PPxh2	202.2	68.8	192.8	34%	95.4%	280.4%
Thunder Blue	Low	ESSFwc2	16,892.1	3,209.5	11,736.1	19%	69.5%	365.7%
		ESSFwcw	7,044.6	1,338.5	5,135.5	19%	72.9%	383.7%
		ICHmw3	1,778.2	266.7	1,036.1	15%	58.3%	388.5%
		ICHvk1	7,193.8	1,222.9	5,129.5	17%	71.3%	419.4%
		ICHwk1	15,748.4	2,677.2	10,163.5	17%	64.5%	379.6%



COLUMN CALCULATIONS:			A	B	C	-	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Target Mat+Old (ha)	Existing Mat+Old (ha)	Target Mat+Old (%)	Existing Mat+Old (%)	% of Target Met
Tranquille	Int.	ESSFdc3	2,443.8	562.1	394.4	23%	16.1%	70.2%
		ESSFxc2	2,523.2	580.3	1,074.0	23%	42.6%	185.1%
		IDFdk1	9,978.0	3,392.5	4,010.4	34%	40.2%	118.2%
		IDFdk2	1,521.0	517.2	515.9	34%	33.9%	99.8%
		IDFdk3	1,077.2	366.3	88.4	34%	8.2%	24.1%
		IDFhx2	753.6	256.2	553.1	34%	73.4%	215.9%
		MSdm3	3,514.7	913.8	1,187.0	26%	33.8%	129.9%
		MSxk2	9,677.0	2,516.0	2,456.4	26%	25.4%	97.6%
Tum Tum	Int.	ESSFvc	1,887.6	679.6	1,273.2	36%	67.4%	187.4%
		ESSFvcw	1,652.1	594.8	728.0	36%	44.1%	122.4%
		ESSFwc2	17,011.2	6,124.0	9,995.5	36%	58.8%	163.2%
		ESSFwcw	9,006.5	3,242.3	7,043.8	36%	78.2%	217.2%
		ICHdw3	11.1	2.6	10.5	23%	94.2%	409.5%
		ICHmw3	3,714.0	1,151.3	682.1	31%	18.4%	59.2%
		ICHvk1	17,983.4	6,114.4	10,677.6	34%	59.4%	174.6%
		ICHwk1	16,554.1	5,628.4	4,146.8	34%	25.0%	73.7%
Upper Guichon	Low	ESSFxc2	2,310.0	323.4	1,073.4	14%	46.5%	331.9%
		IDFdk1	32,118.9	5,460.2	10,616.3	17%	33.1%	194.4%
		IDFhx2	8.8	1.5	8.8	17%	100.0%	588.2%
		MSxk2	28,115.9	3,936.2	7,682.8	14%	27.3%	195.2%
Upper N. Thompson	Int.	ESSFwc2	26,702.9	9,613.0	20,546.2	36%	76.9%	213.7%
		ESSFwcw	13,151.6	4,734.6	8,560.3	36%	65.1%	180.8%
		ICHvk1	9,175.2	3,119.6	6,384.4	34%	69.6%	204.7%
		ICHwk1	4,889.1	1,662.3	3,071.6	34%	62.8%	184.8%
Vavenby	Low	ESSFdc3	147.5	20.7	22.8	14%	15.4%	110.3%
		ESSFdcw	83.3	11.7	60.2	14%	72.3%	516.4%
		ESSFwc2	7,673.4	1,457.9	2,428.1	19%	31.6%	166.5%
		ESSFwcw	527.3	100.2	182.6	19%	34.6%	182.3%
		ICHdw3	4,913.8	687.9	2,127.5	14%	43.3%	309.3%
		ICHmk2	491.7	68.8	256.4	14%	52.1%	372.4%
		ICHmw3	4,635.4	695.3	2,230.4	15%	48.1%	320.8%
		IDFmw2	4,473.7	760.5	2,040.9	17%	45.6%	268.4%
		SBSmm	1,946.0	214.1	509.5	11%	26.2%	238.0%
<b>Total</b>			<b>1,723,540.9</b>	<b>442,783.8</b>	<b>786,346.0</b>			

## Incursions into Legal OGMAs

Table 25 is provided as additional detail for the OGMA indicator to show a summary of incursions into legal OGMAs that exceed the allowable incursion threshold by disturbance type. OGMAs may have multiple incursions reported within them; these are represented in the table below with multiple records and a “total disturbance” row that summarizes all incursions for that individual OGMA. For example, the OGMA “KAM\_TKA\_2629” has two recorded instances of incursions: 6.0 ha of incurred area due to forest harvesting, and 1.5 ha of incurred area due to roads.

**Table 25. Detailed Breakdown of Incursions in Legal Old Growth Management Areas (OGMAs) that Exceed the Allowable Incursion Threshold by Disturbance Type in the Kamloops Land and Resource Management Plan (KLRMP) Area.**

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type
Adams Lake	KAM_TKA_2170	59.9	59.9	2.1	3%	2.1	3%	Roads
	KAM_TKA_2229	2.3	2.3	0.7	31%	0.7	31%	Roads
	KAM_TKA_2312	102.9	102.9	3.9	4%	3.9	4%	Roads
	KAM_TKA_2510	50.1	50.1	2.6	5%	2.6	5%	Roads
	KAM_TKA_2571	1334.1	1333.7	8.8	1%	8.8	1%	Roads
	KAM_TKA_2627	23.1	23.1	2.1	9%	2.1	9%	Roads
	KAM_TKA_2629	108.0	108.0	6.0	6%	6.0	6%	Forest Harvesting
				1.5	1%	1.5	1%	Roads
				7.5	7%	7.5	7%	Total Disturbance
	KAM_TKA_2631	3.3	3.3	0.9	26%	0.9	26%	Forest Harvesting
				0.8	25%	0.8	25%	Roads
				1.7	51%	1.7	51%	Total Disturbance
	KAM_TKA_2654	129.8	129.8	8.3	6%	8.3	6%	Forest Harvesting
				6.0	5%	6.0	5%	Roads
				14.3	11%	14.3	11%	Total Disturbance
	KAM_TKA_2665	122.4	122.4	0.2	0%	0.2	0%	Forest Harvesting
				8.3	7%	8.3	7%	Roads
				8.5	7%	8.5	7%	Total Disturbance
	KAM_TKA_2730	17.4	17.3	1.9	11%	1.9	11%	Forest Harvesting
				0.4	2%	0.4	2%	Roads
				2.3	13%	2.3	13%	Total Disturbance
	KAM_TKA_2736	48.2	48.2	22.7	47%	22.7	47%	Forest Harvesting
				1.7	3%	1.7	3%	Roads
				24.3	51%	24.3	51%	Total Disturbance
	KAM_TKA_2753	38.4	38.4	2.2	6%	2.2	6%	Roads
	KAM_TKA_2828	162.3	162.2	9.7	6%	9.7	6%	Roads
	KAM_TKA_2864	2.9	2.9	0.4	12%	0.4	12%	Roads
	KAM_TKA_2874	18.4	18.3	1.8	10%	1.8	10%	Forest Harvesting
				0.6	3%	0.6	3%	Roads
				2.4	13%	2.4	13%	Total Disturbance

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type	
	KAM_TKA_2906	2.7	2.7	0.3	12%	0.3	12%	Roads	
	KAM_TKA_3003	75.2	75.2	2.3	3%	2.3	3%	Roads	
				1.5	0%	1.5	0%	Forest Harvesting	
	KAM_TKA_3030	1027.8	1027.6	2.8	0%	2.8	0%	Roads	
				4.4	0%	4.4	0%	Total Disturbance	
	KAM_TKA_3102	76.6	76.6	4.0	5%	4.0	5%	Roads	
	KAM_TKA_3530	64.9	64.9	2.4	4%	2.4	4%	Forest Harvesting	
				1.0	1%	1.0	1%	Roads	
				3.3	5%	3.3	5%	Total Disturbance	
	KAM_TKA_3714	337.7	337.4	0.1	0%	0.1	0%	Forest Harvesting	
				0.1	0%	0.1	0%	Mining and Extraction	
				6.6	2%	6.6	2%	Roads	
				6.8	2%	6.8	2%	Total Disturbance	
	Albreda	KAM_TKA_6873	2.5	2.5	0.4	16%	0.4	16%	Power
					0.1	6%	0.1	6%	Roads
					0.8	30%	0.8	30%	Rights of Way
1.3					52%	1.3	52%	Total Disturbance	
KAM_TKA_6908		42.5	42.5	2.4	6%	2.4	6%	Roads	
KAM_TKA_7036		3.0	3.0	0.4	12%	0.4	12%	Oil and Gas	
KAM_TKA_7041		13.7	13.7	0.9	7%	0.9	7%	Oil and Gas	
				0.2	2%	0.2	2%	Roads	
				0.8	6%	0.8	6%	Rights of Way	
				1.9	14%	1.9	14%	Total Disturbance	
KAM_TKA_7068		18.1	18.1	0.7	4%	0.7	4%	Oil and Gas	
				1.4	8%	1.4	8%	Roads	
				0.9	5%	0.9	5%	Rights of Way	
				3.0	17%	3.0	17%	Total Disturbance	
KAM_TKA_7073		22.9	22.9	1.3	6%	1.3	6%	Oil and Gas	
				0.9	4%	0.9	4%	Roads	
				2.2	9%	2.2	9%	Total Disturbance	
KAM_TKA_7213		42.7	42.4	1.9	4%	1.9	4%	Oil and Gas	
				0.2	0%	0.1	0%	Roads	
				2.4	6%	2.4	6%	Rights of Way	
				4.4	10%	4.4	10%	Total Disturbance	
KAM_TKA_7231		2.5	2.5	0.3	12%	0.3	12%	Oil and Gas	
				0.5	21%	0.5	21%	Rights of Way	
KAM_TKA_7284		638.1	578.6	0.9	34%	0.9	34%	Total Disturbance	
	9.8			2%	9.8	2%	Roads		

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type	
	KAM_TKA_7298	14.0	13.5	1.0	7%	1.0	8%	Oil and Gas	
				0.2	2%	0.2	2%	Roads	
				2.1	15%	2.1	16%	Rights of Way	
				3.3	24%	3.3	25%	Total Disturbance	
	KAM_TKA_7375	3.4	3.4	0.3	7%	0.3	7%	Oil and Gas	
				0.0	1%	0.0	1%	Roads	
				0.3	9%	0.3	9%	Rights of Way	
				0.6	18%	0.6	18%	Total Disturbance	
	KAM_TKA_7380	8.4	8.4	0.1	1%	0.1	1%	Oil and Gas	
				0.1	1%	0.1	1%	Roads	
				0.5	6%	0.5	6%	Rail	
				0.8	9%	0.8	9%	Rights of Way	
				1.5	18%	1.5	18%	Total Disturbance	
Ashcroft	KAM_TKA_235	569.0	569.0	11.1	2%	11.1	2%	Roads	
	KAM_TKA_258	243.9	243.9	3.0	1%	3.0	1%	Roads	
	KAM_TKA_376	82.5	82.5	0.1	0%	0.1	0%	Forest Harvesting	
				4.3	5%	4.3	5%	Roads	
					4.4	5%	4.4	5%	Total Disturbance
	KAM_TKA_383	91.6	90.7	10.3	11%	10.1	11%	Mining and Extraction	
				0.1	0%	0.0	0%	Power	
				3.8	4%	3.7	4%	Roads	
					14.1	15%	13.8	15%	Total Disturbance
	KAM_TKA_471	3.9	3.9	0.2	5%	0.2	5%	Roads	
				0.3	8%	0.3	8%	Rights of Way	
				0.5	14%	0.5	14%	Total Disturbance	
	KAM_TKA_479	289.1	289.1	2.2	1%	2.2	1%	Roads	
				1.2	0%	1.2	0%	Rights of Way	
				3.4	1%	3.4	1%	Total Disturbance	
	KAM_TKA_490	82.1	82.1	0.1	0%	0.1	0%	Forest Harvesting	
				2.5	3%	2.5	3%	Roads	
					2.6	3%	2.6	3%	Total Disturbance
	KAM_TKA_518	41.4	41.4	3.2	8%	3.2	8%	Roads	
	KAM_TKA_547	90.0	89.9	5.8	6%	5.8	6%	Roads	
KAM_TKA_551	585.3	585.0	8.3	1%	8.1	1%	Roads		
			0.1	0%	0.1	0%	Rights of Way		
			0.4	0%	0.4	0%	Urban		
				8.7	1%	8.5	1%	Total Disturbance	
KAM_TKA_570	41.2	41.1	3.3	8%	3.3	8%	Mining and Extraction		
			0.3	1%	0.3	1%	Roads		
			3.5	9%	3.5	9%	Total Disturbance		

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type
	KAM_TKA_578	967.7	967.2	3.1	0%	3.1	0%	Roads
	KAM_TKA_914	363.4	363.4	8.7	2%	8.7	2%	Roads
				0.2	0%	0.2	0%	Roads
	KAM_TKA_1034	47.0	46.4	4.0	9%	3.5	8%	Rights of Way
				4.2	9%	3.7	8%	Total Disturbance
	KAM_TKA_1177	892.3	889.6	6.9	0%	6.8	1%	Roads
				14.3	5%	14.1	2%	Rights of Way
				21.1	2%	20.9	2%	Total Disturbance
	KAM_TKA_1280	126.6	126.6	6.1	5%	6.1	5%	Roads
	KAM_TKA_1378	895.6	894.8	3.4	0%	3.4	0%	Roads
				0.6	0%	0.6	0%	Forest Harvesting
	KAM_TKA_1603	970.9	970.9	8.9	1%	8.9	1%	Roads
				9.5	1%	9.5	1%	Total Disturbance
	Avola	KAM_TKA_5218	9.3	9.0	1.7	18%	1.5	16%
1.6					17%	1.6	18%	Rights of Way
3.3					35%	3.0	34%	Total Disturbance
KAM_TKA_5294		23.7	23.7	2.3	10%	2.3	10%	Roads
KAM_TKA_5337		53.4	53.2	0.8	2%	0.8	2%	Forest Harvesting
				2.8	5%	2.8	5%	Roads
				3.6	7%	3.6	7%	Total Disturbance
KAM_TKA_5481		370.6	370.0	0.3	0%	0.3	0%	Forest Harvesting
				2.1	1%	2.0	1%	Oil and Gas
				0.8	0%	0.7	0%	Roads
				3.1	1%	2.9	1%	Rights of Way
				6.2	2%	5.8	2%	Total Disturbance
KAM_TKA_5693		154.4	154.4	2.1	1%	2.1	1%	Roads
KAM_TKA_5811		96.7	96.7	3.1	3%	3.1	3%	Roads
KAM_TKA_5832		238.3	238.3	0.1	0%	0.1	0%	Mining and Extraction
				2.1	1%	2.1	1%	Roads
				2.2	1%	2.2	1%	Total Disturbance
KAM_TKA_5884		78.4	78.1	2.1	3%	2.1	3%	Roads
KAM_TKA_5958		11.2	11.2	1.3	12%	1.3	12%	Roads
KAM_TKA_6073		8.1	8.1	1.0	12%	1.0	12%	Oil and Gas
				0.02	0%	0.02	0%	Rights of Way
	1.0			12%	1.0	13%	Total Disturbance	
KAM_TKA_6215	5.5	5.4	0.6	11%	0.6	11%	Oil and Gas	
			0.5	9%	0.5	9%	Rights of Way	
			1.1	20%	1.1	20%	Total Disturbance	
KAM_TKA_6286	223.4	222.6	2.1	1%	2.1	1%	Roads	

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type
Barriere	KAM_TKA_2723	292.1	292.1	7.2	2%	7.2	2%	Roads
	KAM_TKA_2805	148.3	148.3	0.03	0%	0.03	0%	Forest Harvesting
				4.1	3%	4.1	3%	Roads
	KAM_TKA_2805	148.3	148.3	4.1	3%	4.1	3%	Total Disturbance
				KAM_TKA_2859	4.6	4.6	2.0	43%
	KAM_TKA_2890	15.4	15.4	2.4	15%	2.4	15%	Forest Harvesting
	KAM_TKA_2988	14.3	14.3	0.1	1%	0.1	1%	Forest Harvesting
				2.0	14%	2.0	14%	Roads
				2.1	15%	2.1	15%	Total Disturbance
	KAM_TKA_2995	140.5	140.5	2.1	2%	2.1	2%	Forest Harvesting
				6.0	4%	6.0	4%	Roads
				8.1	6%	8.1	6%	Total Disturbance
	KAM_TKA_2998	86.4	82.7	0.2	0%	0.2	0%	Forest Harvesting
				2.7	3%	2.7	3%	Roads
				2.1	2%	2.1	3%	Total Disturbance
	KAM_TKA_3096	321.4	321.2	17.8	6%	17.8	6%	Roads
	KAM_TKA_3101	7.6	7.6	1.0	13%	1.0	13%	Forest Harvesting
				0.1	1%	0.1	1%	Roads
				1.1	14%	1.1	14%	Total Disturbance
	KAM_TKA_3147	158.0	158.0	0.05	0%	0.05	0%	Forest Harvesting
				6.5	4%	6.5	4%	Roads
				6.6	4%	6.6	4%	Total Disturbance
	KAM_TKA_3153	403.4	403.4	6.2	2%	6.2	2%	Roads
	KAM_TKA_3172	113.1	113.1	3.3	3%	3.3	3%	Roads
	KAM_TKA_3173	987.6	986.4	16.1	2%	16.1	2%	Roads
	KAM_TKA_3178	17.5	17.5	2.4	14%	2.4	14%	Roads
	KAM_TKA_3194	159.6	159.6	5.8	4%	5.8	4%	Roads
	KAM_TKA_3200	3.0	3.0	0.7	22%	0.7	22%	Roads
	KAM_TKA_3212	22.9	22.9	2.3	10%	2.3	10%	Roads
	KAM_TKA_3242	52.5	52.5	0.3	1%	0.3	1%	Forest Harvesting
				2.0	4%	2.0	4%	Roads
				2.3	4%	2.3	4%	Total Disturbance
	KAM_TKA_3244	80.4	80.4	0.04	0%	0.04	0%	Forest Harvesting
				3.8	5%	3.8	5%	Roads
				3.8	5%	3.8	5%	Total Disturbance
	KAM_TKA_3262	2.8	2.8	0.3	11%	0.3	11%	Roads
	KAM_TKA_3269	3.6	3.6	0.5	14%	0.5	14%	Roads
	KAM_TKA_3284	717.8	717.3	1.1	0%	1.1	0%	Forest Harvesting
				11.4	2%	11.4	2%	Roads
				12.5	2%	12.5	2%	Total Disturbance

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type
	KAM_TKA_3320	60.1	60.0	3.7	6%	3.7	6%	Roads
	KAM_TKA_3321	47.2	47.1	2.2	5%	2.2	5%	Roads
	KAM_TKA_3356	13.1	13.0	1.8	14%	1.8	14%	Roads
	KAM_TKA_3362	3.6	3.6	0.4	10%	0.4	10%	Roads
	KAM_TKA_3386	15.6	15.6	2.1	13%	2.1	13%	Roads
	KAM_TKA_3559	106.6	104.1	8.4	8%	8.4	8%	Roads
	KAM_TKA_3776	461.7	461.7	5.1	1%	5.1	1%	Roads
	KAM_TKA_3903	321.9	321.6	2.1	1%	2.1	1%	Forest Harvesting
				2.0	1%	2.0	1%	Roads
				4.1	1%	4.1	1%	Total Disturbance
KAM_TKA_4269	2.9	2.9	0.5	16%	0.5	16%	Roads	
Bonaparte	KAM_TKA_3105	368.8	368.2	14.8	4%	14.8	4%	Forest Harvesting
				8.0	2%	8.0	2%	Roads
				22.7	6%	22.7	6%	Total Disturbance
KAM_TKA_3477	162.0	161.9	4.4	3%	4.4	3%	Roads	
Campbell	KAM_TKA_234	74.9	74.9	3.6	5%	3.6	5%	Roads
	KAM_TKA_450	51.7	51.7	3.3	6%	3.3	6%	Roads
	KAM_TKA_564	111.0	111.0	2.6	2%	2.6	2%	Roads
	KAM_TKA_638	1325.6	1323.0	17.1	1%	17.0	1%	Roads
	KAM_TKA_664	353.3	353.3	11.5	3%	11.5	3%	Roads
	KAM_TKA_703	97.2	96.3	2.9	3%	2.8	3%	Roads
				0.01	0%	0.01	0%	Forest Harvesting
	KAM_TKA_728	48.6	48.6	5.1	10%	5.1	10%	Roads
				5.1	10%	5.1	10%	Total Disturbance
	KAM_TKA_776	59.7	59.7	3.5	6%	3.5	6%	Roads
	KAM_TKA_816	239.1	239.1	2.9	1%	2.9	1%	Roads
	KAM_TKA_1077	338.0	337.5	11.8	3%	11.8	3%	Roads
	KAM_TKA_1089	476.9	476.6	2.4	1%	2.4	1%	Roads
	KAM_TKA_1163	121.8	121.1	7.6	6%	7.6	6%	Forest Harvesting
				6.2	5%	5.8	5%	Roads
				13.7	11%	13.4	11%	Total Disturbance
	KAM_TKA_1268	720.0	717.9	2.6	0%	2.6	0%	Recreation
				8.5	1%	8.5	1%	Roads
				0.5	0%	0.5	0%	Rights of Way
				11.6	2%	11.6	2%	Total Disturbance
KAM_TKA_1269	81.4	81.4	1.1	1%	1.1	1%	Oil and Gas	
			1.8	2%	1.8	2%	Roads	
			0.3	0%	0.3	0%	Rights of Way	
			3.2	4%	3.2	4%	Total Disturbance	

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type
	KAM_TKA_1290	498.9	498.7	0.4	0%	0.4	0%	Oil and Gas
				1.4	0%	1.4	0%	Roads
				1.1	0%	1.1	0%	Rights of Way
				2.9	1%	2.9	1%	Total Disturbance
	KAM_TKA_1372	236.3	235.9	0.1	0%	0.1	0%	Power
				5.6	2%	5.6	2%	Roads
				5.7	2%	5.7	2%	Total Disturbance
	KAM_TKA_1393	145.4	145.4	5.1	4%	5.1	4%	Roads
	KAM_TKA_1463	720.2	679.2	0.5	0%	0.5	0%	Power
				7.1	1%	7.1	1%	Roads
0.6				0%	0.6	0%	Rights of Way	
			8.2	1%	8.2	1%	Total Disturbance	
KAM_TKA_1821	107.5	107.5	3.2	3%	3.2	3%	Roads	
KAM_TKA_1970	8.8	1.5	1.0	12%	0.0	0%	Roads	
Cayenne	KAM_TKA_3430	0.6	0.6	0.4	69%	0.4	69%	Roads
	KAM_TKA_3616	67.2	67.1	2.2	3%	2.2	3%	Roads
	KAM_TKA_4030	558.0	557.9	6.9	1%	6.9	1%	Roads
	KAM_TKA_4076	78.6	78.6	0.2	0%	0.2	0%	Forest Harvesting
				2.0	2%	2.0	2%	Roads
				2.1	3%	2.1	3%	Total Disturbance
	KAM_TKA_4194	44.2	44.2	4.1	9%	4.1	9%	Roads
KAM_TKA_7452	27.3	27.3	2.0	7%	2.0	7%	Roads	
Clearwater	KAM_TKA_4438	112.8	112.8	3.1	3%	3.1	3%	Forest Harvesting
				1.5	1%	1.5	1%	Roads
				4.6	4%	4.6	4%	Total Disturbance
	KAM_TKA_4567	188.7	188.7	3.9	2%	3.9	2%	Roads
	KAM_TKA_4576	26.7	26.7	2.3	9%	2.3	9%	Roads
	KAM_TKA_4589	162.3	162.3	0.3	0%	0.3	0%	Power
				5.2	3%	5.2	3%	Roads
				5.5	3%	5.4	3%	Total Disturbance
	KAM_TKA_4617	89.2	89.2	1.3	1%	1.3	1%	Forest Harvesting
				4.5	5%	4.5	5%	Roads
				5.8	7%	5.8	7%	Total Disturbance
	KAM_TKA_4632	2.0	2.0	0.7	35%	0.7	35%	Rail and Infrastructure
KAM_TKA_4644	19.2	19.2	2.2	11%	2.2	11%	Roads	
KAM_TKA_4710	162.7	161.7	2.1	1%	2.1	1%	Forest Harvesting	
			0.1	0%	0.1	0%	Power	
			3.6	2%	3.3	2%	Roads	
			5.7	4%	5.4	3%	Total Disturbance	



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KAM_TKA_4727	3.4	3.4	3.4	0.1	3%	0.1	3%	Roads
				0.9	27%	0.9	27%	Urban
				1.0	30%	1.0	30%	Total Disturbance
KAM_TKA_4737	538.9	538.8	538.8	0.6	0%	0.6	0%	Forest Harvesting
				8.1	1%	8.1	1%	Roads
				8.7	2%	8.7	2%	Total Disturbance
KAM_TKA_4832	404.4	404.4	404.4	0.5	0%	0.5	0%	Forest Harvesting
				5.6	1%	5.6	1%	Roads
				6.2	2%	6.2	2%	Total Disturbance
KAM_TKA_4836	9.6	9.6	9.6	0.02	0%	0.02	0%	Forest Harvesting
				1.6	16%	1.6	16%	Roads
				1.6	17%	1.6	17%	Total Disturbance
KAM_TKA_4886	149.6	149.6	149.6	0.1	0%	0.1	0%	Forest Harvesting
				2.5	2%	2.5	2%	Roads
				2.6	2%	2.6	2%	Total Disturbance
KAM_TKA_4920	90.7	90.7	90.7	0.4	0%	0.4	0%	Mining and Extraction
				3.3	4%	3.3	4%	Roads
				3.7	4%	3.7	4%	Total Disturbance
KAM_TKA_4969	1046.3	1046.3	1046.3	0.2	0%	0.2	0%	Forest Harvesting
				8.0	1%	8.0	1%	Roads
				8.2	1%	8.2	1%	Total Disturbance
KAM_TKA_4970	75.8	75.8	75.8	2.2	3%	2.2	3%	Roads
KAM_TKA_5010	109.4	109.4	109.4	3.5	3%	3.5	3%	Roads
KAM_TKA_5069	0.3	0.3	0.3	0.3	99%	0.3	99%	Roads
KAM_TKA_5076	0.6	0.6	0.6	0.2	27%	0.2	27%	Roads
KAM_TKA_5181	298.9	298.9	298.9	2.8	1%	2.8	1%	Roads
KAM_TKA_5432	898.1	895.8	895.8	15.7	2%	15.4	2%	Roads
				1.7	0%	1.7	0%	Urban
				17.4	2%	17.1	2%	Total Disturbance
KAM_TKA_5604	370.9	370.9	370.9	0.1	0%	0.1	0%	Forest Harvesting
				2.0	1%	2.0	1%	Roads
				0.3	0%	0.3	0%	Urban
				2.4	1%	2.4	1%	Total Disturbance
KAM_TKA_5610	11.0	11.0	11.0	5.0	46%	5.0	46%	Forest Harvesting
				0.7	7%	0.7	7%	Roads
				5.7	52%	5.7	52%	Total Disturbance
KAM_TKA_5617	3.1	3.1	3.1	0.5	16%	0.5	16%	Roads

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Darfield	KAM_TKA_2769	47.4	47.4	2.7	6%	2.7	6%	Roads
	KAM_TKA_2845	151.0	151.0	1.6	1%	1.6	1%	Oil and Gas
				3.6	2%	3.6	2%	Roads
				0.3	0%	0.3	0%	Rights of Way
				5.6	4%	5.6	4%	Total Disturbance
	KAM_TKA_2987	3.4	0.0	0.9	26%	0.0	-	Roads
	KAM_TKA_3270	274.5	265.3	3.9	1%	3.9	1%	Roads
	KAM_TKA_3382	116.5	116.5	6.9	6%	6.9	6%	Forest Harvesting
				0.1	0%	0.1	0%	Roads
				7.0	6%	7.0	6%	Total Disturbance
	KAM_TKA_3394	490.3	478.2	0.4	0%	0.4	0%	Forest Harvesting
				5.1	1%	5.1	1%	Roads
				5.5	1%	5.5	1%	Total Disturbance
	KAM_TKA_7470	84.2	83.2	6.3	7%	6.3	8%	Forest Harvesting
				1.5	2%	1.5	2%	Roads
				7.8	9%	7.8	9%	Total Disturbance
Deadman	KAM_TKA_1607	529.2	529.2	1.8	0%	1.8	0%	Oil and Gas
				0.5	0%	0.5	0%	Roads
				2.2	0%	2.2	0%	Total Disturbance
	KAM_TKA_1777	84.9	84.9	4.1	5%	4.1	5%	Roads
	KAM_TKA_1817	497.0	493.3	9.3	2%	9.3	2%	Roads
	KAM_TKA_1978	144.5	144.5	3.5	2%	3.5	2%	Roads
	KAM_TKA_2010	18.0	18.0	0.1	0%	0.1	0%	Oil and Gas
				2.1	12%	2.1	12%	Roads
				2.2	12%	2.2	12%	Total Disturbance
	KAM_TKA_2109	234.4	234.3	6.8	3%	6.8	3%	Roads
	KAM_TKA_2134	606.6	606.4	0.02	0%	0.02	0%	Power
				19.5	3%	19.5	3%	Roads
				19.5	3%	19.5	3%	Total Disturbance
	KAM_TKA_2141	139.9	139.9	2.8	2%	2.8	2%	Roads
	KAM_TKA_2257	1446.1	1314.3	0.2	0%	0.2	0%	Forest Harvesting
				19.0	1%	18.9	1%	Roads
				19.2	1%	19.1	1%	Total Disturbance
	KAM_TKA_2374	782.2	782.2	20.2	3%	20.2	3%	Mining and Extraction
				16.6	2%	16.6	2%	Roads
36.8				5%	36.8	5%	Total Disturbance	
KAM_TKA_2395	112.2	112.2	2.9	3%	2.9	3%	Roads	
KAM_TKA_2412	78.4	78.4	3.2	4%	3.2	4%	Roads	
KAM_TKA_2439	29.8	29.8	2.2	7%	2.2	7%	Roads	
KAM_TKA_2476	137.4	137.4	2.3	2%	2.3	2%	Roads	

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Dewdrop	KAM_TKA_1302	2182.6	2157.4	4.6	0%	4.6	0%	Roads
Dunn	KAM_TKA_3672	54.3	54.3	2.4	4%	2.4	4%	Roads
	KAM_TKA_3715	386.4	386.4	2.5	1%	2.5	1%	Roads
	KAM_TKA_3981	9.3	3.2	2.9	32%	0.0	0%	Roads
Hat Creek	KAM_TKA_1354	3205.1	3202.8	3.4	0%	3.4	0%	Roads
	KAM_TKA_1659	9.2	9.2	0.6	7%	0.6	7%	Power
				1.6	18%	1.6	18%	Rights of Way
				2.2	24%	2.2	24%	Total Disturbance
	KAM_TKA_1675	56.9	56.1	0.1	0%	0.1	0%	Power
				1.8	3%	1.5	3%	Roads
				8.3	15%	7.9	14%	Rights of Way
				10.1	18%	9.5	17%	Total Disturbance
KAM_TKA_1689	8.7	8.7	1.5	17%	1.5		Roads	
Heffley	KAM_TKA_1231	7.7	7.4	2.7	35%	2.7	36%	Urban
	KAM_TKA_1334	9.5	9.4	1.5	16%	1.5	16%	Roads
	KAM_TKA_1336	74.7	74.7	2.5	3%	2.5	3%	Roads
				0.02	0%	0.02	0%	Rights of Way
				0.02	0%	0.02	0%	Urban
				2.6	3%	2.6	3%	Total Disturbance
	KAM_TKA_1414	198.8	198.8	3.0	1%	3.0	1%	Roads
	KAM_TKA_1438	262.1	262.1	5.2	2%	5.2	2%	Roads
	KAM_TKA_1454	7.9	7.9	0.9	11%	0.9	11%	Roads
	KAM_TKA_1458	114.8	114.8	4.3	4%	4.3	4%	Roads
	KAM_TKA_1547	230.6	230.6	1.9	1%	1.9	1%	Forest Harvesting
				0.4	0%	0.4	0%	Roads
				2.0	1%	2.0	1%	Rights of Way
				4.4	2%	4.4	2%	Total Disturbance
	KAM_TKA_1685	65.6	65.6	0.04	0%	0.04	0%	Forest Harvesting
				2.4	4%	2.4	4%	Roads
				2.4	4%	2.4	4%	Total Disturbance
	KAM_TKA_1731	57.1	57.1	4.1	7%	4.1	7%	Roads
	KAM_TKA_1779	492.3	492.3	0.1	0%	0.1	0%	Power
				4.6	1%	4.6	1%	Roads
4.7				1%	4.7	1%	Total Disturbance	
KAM_TKA_1998	113.6	113.6	2.1	2%	2.1	2%	Roads	
KAM_TKA_2087	190.0	189.4	0.1	0%	0.1	0%	Forest Harvesting	
			3.9	2%	3.9	2%	Roads	
			4.0	2%	4.0	2%	Total Disturbance	
KAM_TKA_2156	120.1	120.1	5.3	4%	5.3	4%	Roads	
KAM_TKA_2474	39.4	37.3	2.8	7%	2.7	7%	Roads	

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Lac du Bois	KAM_TKA_1648	22.9	22.9	2.4	11%	2.4	11%	Roads
	KAM_TKA_1717	152.9	152.8	2.6	2%	2.6	2%	Roads
Louis Creek	KAM_TKA_1556	120.8	120.4	6.9	6%	6.9	6%	Roads
	KAM_TKA_1766	69.8	69.8	2.5	4%	2.5	4%	Roads
	KAM_TKA_1801	479.7	479.5	12.6	3%	12.5	3%	Roads
				0.9	0%	0.9	0%	Rights of Way
				0.4	0%	0.4	0%	Urban
				13.9	3%	13.7	3%	Total Disturbance
	KAM_TKA_1804	173.1	173.1	4.3	3%	4.3	3%	Roads
	KAM_TKA_1832	10.3	10.3	1.1	11%	1.1	11%	Roads
	KAM_TKA_1891	443.7	443.6	3.6	1%	3.6	1%	Forest Harvesting
				107.9	24%	107.9	0%	Recreation
				18.8	4%	18.8	4%	Roads
				0.6	0%	0.6	0%	Rights of Way
				0.5	0%	0.5	0%	Urban
				131.4	30%	131.4	30%	Total Disturbance
	KAM_TKA_1979	42.1	42.1	7.8	19%	7.8	19%	Recreation
				0.4	1%	0.4	1%	Roads
				8.3	20%	8.3	20%	Total Disturbance
	KAM_TKA_2072	234.6	234.6	2.8	1%	2.8	1%	Roads
	KAM_TKA_2337	3.6	3.6	0.1	2%	0.1	2%	Forest Harvesting
				0.3	9%	0.3	9%	Roads
				0.4	10%	0.4	10%	Total Disturbance
	KAM_TKA_2354	294.9	294.9	6.2	2%	6.2	2%	Roads
	KAM_TKA_2450	783.1	783.1	0.1	0%	0.1	0%	Forest Harvesting
2.4				0%	2.4	0%	Roads	
2.5				0%	2.5	0%	Total Disturbance	
KAM_TKA_2638	6.3	5.8	1.4	23%	1.1	19%	Roads	
KAM_TKA_2657	166.5	165.9	5.0	3%	5.0	3%	Roads	
Lower Adams	KAM_TKA_1954	4.1	4.1	0.4	10%	0.4	10%	Roads
	KAM_TKA_2121	188.2	188.2	0.6	0%	0.6	0%	Forest Harvesting
				5.6	3%	5.6	3%	Roads
				6.2	3%	6.2	3%	Total Disturbance
	KAM_TKA_2125	67.1	67.1	0.01	0%	0.01	0%	Forest Harvesting
				2.7	4%	2.7	4%	Roads
				2.7	4%	2.7	4%	Total Disturbance
	KAM_TKA_2145	952.3	952.1	1.2	0%	1.2	0%	Forest Harvesting
4.4				0%	4.4	0%	Roads	
			5.6	1%	5.6	1%	Total Disturbance	

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type
	KAM_TKA_2383	106.7	106.7	6.1	6%	6.1	6%	Forest Harvesting
				5.0	5%	5.0	5%	Roads
				11.1	10%	11.1	10%	Total Disturbance
	KAM_TKA_2402	31.1	31.1	14.9	48%	14.9	48%	Forest Harvesting
				0.9	3%	0.9	3%	Roads
				15.8	51%	15.8	51%	Total Disturbance
	KAM_TKA_2498	2.7	2.7	0.3	12%	0.3	12%	Roads
	KAM_TKA_2550	73.3	73.3	2.8	4%	2.8	4%	Forest Harvesting
				0.5	1%	0.5	1%	Roads
3.3				5%	3.3	5%	Total Disturbance	
Lower Bonaparte	KAM_TKA_1489	227.6	226.9	2.7	1%	2.6	1%	Roads
				10.7	5%	10.7	5%	Rights of Way
				13.4	6%	13.3	6%	Total Disturbance
	KAM_TKA_1861	47.4	47.4	9.4	20%	9.4	20%	Forest Harvesting
				1.0	2%	1.0	2%	Roads
				10.4	22%	10.4	22%	Total Disturbance
	KAM_TKA_1881	3.9	3.9	2.6	67%	2.6	67%	Roads
	KAM_TKA_2000	235.2	235.2	5.4	2%	5.4	2%	Roads
	KAM_TKA_2011	602.9	602.7	6.0	1%	5.9	1%	Roads
KAM_TKA_2044	99.6	99.6	3.2	3%	3.2	3%	Roads	
KAM_TKA_2073	365.6	365.6	2.5	1%	2.5	1%	Roads	
Mad	KAM_TKA_4787	72.5	72.5	3.0	4%	3.0	4%	Roads
	KAM_TKA_4850	305.6	305.6	3.1	1%	3.1	1%	Roads
	KAM_TKA_4879	2.8	2.8	0.4	15%	0.4	15%	Oil and Gas
				0.2	6%	0.2	6%	Rights of Way
				0.6	21%	0.6	21%	Total Disturbance
	KAM_TKA_5152	305.2	305.1	8.8	3%	8.8	3%	Roads
	KAM_TKA_5233	33.9	33.9	2.0	6%	2.0	6%	Roads
KAM_TKA_5366	530.2	530.2	8.8	2%	8.8	2%	Roads	
Mica	KAM_TKA_3816	124.3	124.3	0.5	0%	0.5	0%	Forest Harvesting
				3.9	3%	3.9	3%	Roads
				4.4	4%	4.4	4%	Total Disturbance
	KAM_TKA_3999	270.2	270.2	3.8	1%	3.8	1%	Forest Harvesting
				5.2	2%	5.2	2%	Roads
				9.0	3%	9.0	3%	Total Disturbance
	KAM_TKA_4142	17.1	17.1	2.2	13%	2.2	13%	Forest Harvesting
				0.2	1%	0.2	1%	Roads
				2.4	14%	2.4	14%	Total Disturbance
KAM_TKA_4290	258.0	258.0	3.1	1%	3.1	1%	Roads	

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	KAM_TKA_4295	358.1	358.1	0.01	0%	0.01	0%	Forest Harvesting	
				6.9	2%	6.9	2%	Roads	
				6.9	2%	6.9	2%	Total Disturbance	
	KAM_TKA_4428	454.3	452.2	0.01	0%	0.01	0%	Forest Harvesting	
				3.5	1%	3.5	1%	Roads	
				3.5	1%	3.5	1%	Total Disturbance	
	KAM_TKA_4764	0.2	0.2	0.1	43%	0.1	43%	Roads	
	Mud	KAM_TKA_6611	117.1	117.1	3.2	3%	3.2	3%	Roads
					0.01	0%	0.01	0%	Rights of Way
3.3					3%	3.3	3%	Total Disturbance	
KAM_TKA_6706		575.8	567.7	3.1	1%	2.5	0%	Roads	
				1.1	1%	0.5	1%	Roads	
KAM_TKA_6724		78.0	51.6	2.2	3%	1.5	3%	Rights of Way	
	3.3			4%	1.9	4%	Total Disturbance		
KAM_TKA_6806	452.5	446.9	2.5	1%	2.5	1%	Roads		
Nehalliston	KAM_TKA_3761	1121.8	1121.4	0.02	0%	0.02	0%	Forest Harvesting	
				14.3	1%	14.3	1%	Roads	
				14.4	1%	14.4	1%	Total Disturbance	
Raft	KAM_TKA_4745	210.9	210.2	8.8	4%	8.8	4%	Forest Harvesting	
				9.9	5%	9.9	5%	Roads	
				18.7	9%	18.7	9%	Total Disturbance	
	KAM_TKA_4810	473.0	472.8	2.2	0%	2.2	0%	Forest Harvesting	
				0.4	0%	0.4	0%	Power	
				7.1	1%	7.1	1%	Roads	
				9.7	2%	9.7	2%	Total Disturbance	
	KAM_TKA_4855	149.8	149.1	2.6	2%	2.6	2%	Roads	
	KAM_TKA_4999	509.1	509.1	6.0	1%	6.0	1%	Roads	
	KAM_TKA_5003	159.6	159.3	0.01	0%	0.01	0%	Forest Harvesting	
				2.2	1%	2.2	1%	Roads	
				2.2	1%	2.2	1%	Total Disturbance	
	KAM_TKA_5148	524.1	523.5	8.1	2%	8.1	2%	Roads	
	KAM_TKA_5344	858.3	852.4	0.3	0%	0.3	0%	Forest Harvesting	
				4.3	1%	4.3	1%	Roads	
				4.6	1%	4.6	1%	Total Disturbance	
	KAM_TKA_5500	597.4	563.4	0.01	0%	0.01	0%	Forest Harvesting	
				7.9	1%	7.9	1%	Roads	
7.9				1%	7.9	1%	Total Disturbance		
KAM_TKA_5755	181.6	180.6	2.8	2%	2.8	2%	Roads		
KAM_TKA_6032	171.8	171.8	5.6	3%	5.6	3%	Roads		

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	KAM_TKA_6036	57.8	57.8	2.1	4%	2.1	4%	Roads
	KAM_TKA_6066	2.2	2.2	0.7	33%	0.7	33%	Roads
	KAM_TKA_6106	1242.0	1214.7	2.8	0%	2.8	0%	Roads
S. Kamloops	KAM_TKA_823	295.6	293.6	3.9	1%	3.9	1%	Roads
	KAM_TKA_850	625.3	625.3	0.01	0%	0.01	0%	Forest Harvesting
				13.9	2%	13.9	2%	Roads
				13.9	2%	13.9	2%	Total Disturbance
	KAM_TKA_933	132.3	132.3	2.5	2%	2.5	2%	Roads
	KAM_TKA_952	120.3	119.9	0.2	0%	0.2	0%	Power
				4.9	4%	4.9	4%	Roads
	KAM_TKA_1121	50.3	50.3	5.0	4%	5.0	4%	Total Disturbance
				3.0	6%	3.0	6%	Roads
	KAM_TKA_1150	64.1	64.1	0.3	0%	0.3	0%	Power
				1.7	3%	1.7	3%	Roads
	KAM_TKA_1233	771.3	770.1	2.0	3%	2.0	3%	Total Disturbance
				12.0	2%	12.0	2%	Forest Harvesting
	KAM_TKA_1283	197.3	196.9	11.3	1%	11.3	1%	Roads
				23.3	3%	23.3	3%	Total Disturbance
1.6				1%	1.6	1%	Oil and Gas	
KAM_TKA_1283	197.3	196.9	0.1	0%	3.6	2%	Rights of Way	
			3.6	2%	0.0	0%	Roads	
			5.2	3%	5.2	3%	Total Disturbance	
Skull	KAM_TKA_1947	225.8	224.2	5.3	2%	4.3	2%	Roads
	KAM_TKA_2057	860.1	858.0	3.3	0%	3.3	0%	Oil and Gas
				7.7	1%	7.7	1%	Roads
				0.4	0%	0.4	0%	Rights of Way
				11.4	1%	11.4	1%	Total Disturbance
	KAM_TKA_2151	70.9	70.9	2.4	3%	2.4	3%	Roads
	KAM_TKA_2250	44.1	44.1	2.5	6%	2.5	6%	Roads
KAM_TKA_2748	201.8	201.8	10.0	5%	10.0	5%	Oil and Gas	
			5.4	3%	5.4	3%	Roads	
			15.4	8%	15.4	8%	Total Disturbance	
Stump Lake	KAM_TKA_1	220.4	218.5	2.3	1%	2.3	1%	Roads
	KAM_TKA_5	64.6	64.6	2.5	4%	2.5	4%	Roads
	KAM_TKA_9	22.2	22.2	0.1	0%	0.1	0%	Forest Harvesting
				1.8	8%	1.8	8%	Roads
				0.9	4%	0.9	4%	Rights of Way
				2.8	12%	2.8	12%	Total Disturbance
KAM_TKA_24	4.1	4.1	0.7	16%	0.7	16%	Roads	

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	KAM_TKA_25	65.5	65.5	2.4	4%	2.4	4%	Roads
	KAM_TKA_28	62.8	62.8	2.9	5%	2.9	5%	Roads
				0.02	0%	0.02	0%	Forest Harvesting
	KAM_TKA_77	40.7	40.6	2.5	6%	2.5	6%	Roads
				2.5	6%	2.5	6%	Total Disturbance
	KAM_TKA_96	29.4	29.4	2.1	7%	2.1	7%	Roads
	KAM_TKA_97	14.4	14.4	1.9	13%	1.9	13%	Roads
	KAM_TKA_108	92.9	92.9	4.0	4%	4.0	4%	Roads
	KAM_TKA_128	103.4	103.4	4.0	4%	4.0	4%	Roads
	KAM_TKA_226	57.8	57.8	3.2	6%	3.2	6%	Oil and Gas
0.4				1%	0.4	1%	Roads	
			3.6	6%	3.6	6%	Total Disturbance	
KAM_TKA_7429	55.5	54.7	2.2	4%	2.2	4%	Roads	
Thunder Blue	KAM_TKA_6367	3.3	3.3	0.3	10%	0.3	10%	Roads
	KAM_TKA_6368	75.6	74.9	1.0	1%	1.0	1%	Forest Harvesting
				1.9	2%	1.9	3%	Roads
				2.9	4%	2.9	4%	Total Disturbance
	KAM_TKA_6387	453.2	445.5	21.1	5%	17.1	4%	Roads
	KAM_TKA_6513	216.5	216.5	3.0	1%	3.0	1%	Roads
	KAM_TKA_6621	179.1	178.5	3.9	2%	3.9	2%	Roads
	KAM_TKA_6681	195.0	195.0	8.1	4%	8.1	4%	Roads
	KAM_TKA_6712	356.6	356.6	3.4	1%	3.4	1%	Roads
	KAM_TKA_6726	849.8	848.5	2.4	0%	2.4	0%	Roads
	KAM_TKA_6773	143.0	143.0	0.3	0%	0.3	0%	Oil and Gas
				3.1	2%	3.1	2%	Roads
				0.2	0%	0.2	0%	Rights of Way
			3.6	3%	3.6	3%	Total Disturbance	
KAM_TKA_6807	256.8	256.8	2.1	1%	2.1	1%	Roads	
KAM_TKA_6815	638.0	591.3	4.7	1%	4.7	1%	Roads	
KAM_TKA_6855	515.5	510.4	4.3	1%	4.3	1%	Roads	
Tranquille	KAM_TKA_1723	323.9	323.9	8.9	3%	8.9	3%	Roads
	KAM_TKA_1786	92.8	92.8	2.3	2%	2.3	2%	Roads
				0.03	0%	0.03	0%	Forest Harvesting
	KAM_TKA_1973	12.7	12.7	1.6	13%	1.6	13%	Roads
1.6				13%	1.6	13%	Total Disturbance	
Tum Tum	KAM_TKA_4908	30.1	30.1	2.0	7%	2.0	7%	Roads
	KAM_TKA_5045	411.8	411.8	11.6	3%	11.6	3%	Roads
	KAM_TKA_5301	0.1	0.1	0.05	34%	0.05	34%	Roads



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	KAM_TKA_5445	186.7	182.5	2.2	1%	2.2	1%	Roads
				1.9	1%	0.0	0%	Urban
				4.2	2%	2.2	1%	Total Disturbance
	KAM_TKA_5680	3.0	3.0	1.2	39%	1.2	39%	Roads
	KAM_TKA_5748	10.7	10.7	3.3	31%	3.3	31%	Roads
	KAM_TKA_5993	1.9	1.9	0.5	24%	0.5	24%	Roads
	KAM_TKA_6063	10.1	10.1	2.1	21%	2.1	21%	Roads
	KAM_TKA_6114	3.2	2.7	0.7	22%	0.5	18%	Roads
	KAM_TKA_6298	2.4	2.4	0.3	11%	0.3	11%	Roads
KAM_TKA_6374	249.7	246.8	2.4	1%	2.4	1%	Roads	
Upper Guichon	KAM_TKA_118	13.8	13.8	0.04	0%	0.04	0%	Power
				1.1	8%	1.1	8%	Roads
				1.0	8%	1.0	8%	Rights of Way
				2.2	16%	2.2	16%	Total Disturbance
	KAM_TKA_127	36.9	36.8	2.0	6%	2.0	6%	Roads
				1.3	4%	1.2	3%	Rights of Way
				3.4	9%	3.3	9%	Total Disturbance
	KAM_TKA_131	27.4	27.4	2.4	9%	2.4	9%	Roads
				0.04	0%	0.0	0%	Power
	KAM_TKA_137	301.4	297.3	3.2	1%	3.2	1%	Roads
				0.2	0%	0.2	0%	Rights of Way
				3.5	1%	3.4	1%	Total Disturbance
	KAM_TKA_169	105.6	105.6	0.1	0%	0.1	0%	Forest Harvesting
				0.4	0%	0.4	0%	Oil and Gas
				7.4	7%	7.4	7%	Roads
				7.9	7%	7.9	7%	Total Disturbance
	KAM_TKA_177	322.6	322.6	0.1	0%	0.1	0%	Mining and Extraction
				12.7	4%	12.7	4%	Roads
				12.8	4%	12.8	4%	Total Disturbance
	KAM_TKA_180	85.1	81.3	7.7	9%	7.5	9%	Roads
				0.2	0%	0.2	0%	Rights of Way
				7.9	9%	7.7	9%	Total Disturbance
	KAM_TKA_182	65.7	65.5	0.01	0%	0.01	0%	Forest Harvesting
				0.3	0%	0.2	0%	Mining and Extraction
2.0				3%	2.0	3%	Roads	
2.4				4%	2.2	3%	Total Disturbance	

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KAM_TKA_184	186.5	185.0	0.1	0%	0.1	0%	Forest Harvesting	
			6.1	3%	6.0	3%	Roads	
			5.2	3%	4.8	3%	Rights of Way	
			11.4	6%	10.9	6%	Total Disturbance	
KAM_TKA_193	75.7	75.4	0.8	1%	0.8	1%	Oil and Gas	
			2.7	4%	2.7	4%	Roads	
			3.5	5%	3.5	5%	Total Disturbance	
KAM_TKA_252	117.8	117.7	0.2	0%	0.2	0%	Forest Harvesting	
			1.7	1%	1.7	1%	Oil and Gas	
			0.3	0%	0.3	0%	Rights of Way	
			2.2	2%	2.2	2%	Total Disturbance	
KAM_TKA_269	0.3	0.3	0.04	16%	0.0	13%	Roads	
KAM_TKA_281	5.7	5.7	0.9	16%	0.9	16%	Roads	
KAM_TKA_285	0.4	0.3	0.1	13%	0.05	16%	Roads	
			0.1	25%	0.0	0%	Urban	
			0.1	38%	0.05	16%	Total Disturbance	
KAM_TKA_288	0.6	0.6	0.1	17%	0.1	17%	Roads	
KAM_TKA_297	21.1	21.1	3.0	14%	3.0	14%	Roads	
KAM_TKA_301	1.9	1.9	0.1	6%	0.1	6%	Recreation	
			0.1	7%	0.1	7%	Roads	
			0.2	12%	0.2	12%	Total Disturbance	
KAM_TKA_307	9.7	9.7	1.1	12%	1.1	12%	Roads	
KAM_TKA_315	54.9	54.9	3.0	6%	3.0	6%	Roads	
KAM_TKA_318	15.5	15.5	2.2	14%	2.2	14%	Roads	
KAM_TKA_408	127.5	127.4	0.5	0%	0.5	0%	Power	
			2.9	2%	2.9	2%	Roads	
			4.7	4%	4.6	4%	Rights of Way	
			8.1	6%	8.0	6%	Total Disturbance	
KAM_TKA_485	12.0	10.6	1.2	10%	0.2	2%	Roads	
			0.1	1%	0.1	1%	Urban	
			1.2	10%	0.3	3%	Total Disturbance	
KAM_TKA_488	3.9	3.9	1.1	29%	1.1	29%	Roads	
			2.7	71%	2.7	71%	Urban	
			3.9	100%	3.9	100%	Total Disturbance	
KAM_TKA_502	173.1	172.6	2.5	1%	2.5	1%	Roads	
KAM_TKA_520	208.2	208.2	0.2	0%	0.2	0%	Forest Harvesting	
			5.5	3%	5.5	3%	Roads	
			5.8	3%	5.8	3%	Total Disturbance	
KAM_TKA_95	88.0	88.0	3.7	4%	3.7	4%	Roads	

Landscape Unit	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Total OGMA Incurred Area (ha)	Total OGMA Incurred %	Incurred OGMA CE-CFLB Area (ha)	Incurred OGMA CE-CFLB %	Disturbance Type
Upper N. Thompson	KAM_TKA_7033	456.6	452.9	3.3	1%	3.3	1%	Roads
	KAM_TKA_7160	2.1	2.1	0.2	12%	0.2	12%	Roads
	KAM_TKA_7164	389.0	389.0	21.7	6%	21.7	6%	Roads
	KAM_TKA_7167	357.2	356.8	6.4	2%	6.4	2%	Roads
	KAM_TKA_7200	105.4	105.1	2.5	2%	2.5	2%	Roads
	KAM_TKA_7270	90.5	90.4	2.5	3%	2.5	3%	Roads
Vavenby	KAM_TKA_4226	612.3	612.3	21.0	3%	21.0	3%	Roads
	KAM_TKA_4354	203.3	203.3	4.5	2%	4.5	2%	Roads
	KAM_TKA_4469	50.1	48.2	2.6	5%	2.6	5%	Roads
	KAM_TKA_4549	166.0	166.0	0.04	0%	0.04	0%	Power
				7.2	4%	7.2	4%	Roads
	KAM_TKA_4553	15.2	15.2	7.2	4%	7.2	4%	Total Disturbance
				1.0	6%	1.0	6%	Oil and Gas
				1.0	7%	1.0	7%	Roads
				1.0	7%	1.0	7%	Rights of Way
				3.0	20%	3.0	20%	Total Disturbance

The following OGMA's span multiple LUs and are reported below to demonstrate the total incursion within that OGMA, rather than individually by LU as shown above. These OGMA's are not reported in the table above.

Landscape Units	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Incurred OGMA Area (ha)	Incurred OGMA %	Incurred CFLB Area (ha)	Incurred CFLB %	Disturbance Type
Adams Lake / Lower Adams	KAM_TKA_2147	19.6	19.6	2.1	10%	2.1	10%	Roads
Ashcroft / Hat Creek	KAM_TKA_604	298.4	298.4	0.1	0%	0.1	0%	Forest Harvesting
				2.6	1%	2.6	1%	Roads
				2.7	1%	2.7	1%	Total Disturbance
Ashcroft / Lower Bonaparte	KAM_TKA_1451	893.8	893.7	4.5	0%	4.5	0%	Roads
	KAM_TKA_1532	792.6	792.1	2.9	0%	2.9	0%	Oil and Gas
				7.0	1%	6.8	1%	Roads
				9.9	1%	9.7	1%	Total Disturbance
Avola / Mad	KAM_TKA_5545	661.7	641.2	0.8	0%	0.8	0%	Power
				9.5	1%	8.4	1%	Roads
				0.4	0%	0.4	0%	Rights of Way
				10.7	2%	9.6	1%	Total Disturbance
	KAM_TKA_5798	154.3	154.3	0.1	0%	0.1	0%	Mining and Extraction
				1.9	1%	1.9	1%	Roads
				2.0	1%	2.0	1%	Total Disturbance
Avola / Raft	KAM_TKA_6030	599.3	599.3	3.7	1%	3.7	1%	Roads
Avola / Thunder Blue	KAM_TKA_6392	72.5	72.4	2.3	3%	2.3	3%	Oil and Gas
				1.1	1%	1.1	1%	Roads
				3.9	5%	3.9	5%	Rights of Way
				7.3	10%	7.3	10%	Total Disturbance
Avola / Tum Tum	KAM_TKA_5991	1530.8	1523.5	5.2	0%	3.1	0%	Roads
Barriere / Dunn	KAM_TKA_3186	82.4	81.9	5.3	6%	5.3	6%	Roads
Barriere / Vavanby	KAM_TKA_4287	309.3	309.3	2.0	1%	2.0	1%	Roads
Bonaparte / Darfield / Nehalliston	KAM_TKA_3375	424.5	424.4	1.4	0%	1.4	0%	Forest Harvesting
				1.5	0%	1.5	0%	Roads
				2.8	1%	2.8	1%	Total Disturbance
Bonaparte / Darfield	KAM_TKA_2746	143.2	143.2	0.3	0%	0.3	0%	Forest Harvesting
				2.2	2%	2.2	2%	Roads
				2.5	2%	2.5	2%	Total Disturbance
Campbell / Louis Creek	KAM_TKA_1807	553.0	552.4	19.4	4%	19.4	4%	Roads

Landscape Units	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Incurred OGMA Area (ha)	Incurred OGMA %	Incurred CFLB Area (ha)	Incurred CFLB %	Disturbance Type
Campbell / Lower Adams	KAM_TKA_1870	120.6	120.6	0.02	0%	0.02	0%	Forest Harvesting
				4.2	3%	4.2	3%	Roads
				4.2	4%	4.2	4%	Total Disturbance
Campbell / S. Kamloops / Upper Guichon	KAM_TKA_528	743.2	732.5	0.01	0%	0.01	0%	Oil and Gas
				6.8	1%	6.5	1%	Roads
				6.8	1%	6.5	1%	Total Disturbance
Cayenne / Mica	KAM_TKA_4426	812.7	810.7	0.1	0%	0.1	0%	Forest Harvesting
				5.2	1%	5.2	1%	Roads
				5.4	1%	5.4	1%	Total Disturbance
Clearwater / Raft	KAM_TKA_4789	353.2	351.5	0.4	0%	0.4	0%	Forest Harvesting
				2.7	1%	2.7	1%	Roads
				3.1	1%	3.1	1%	Total Disturbance
Darfield / Skull	KAM_TKA_2662	1006.7	999.5	6.3	1%	6.3	1%	Roads
Deadman / Dewdrop	KAM_TKA_1417	568.4	547.9	0.2	0%	0.2	0%	Forest Harvesting
				7.4	1%	7.4	1%	Roads
				6.8	1%	6.5	1%	Total Disturbance
Dewdrop / Lac du Bois	KAM_TKA_1302	2182.6	2157.4	5.5	0%	5.5	0%	Roads
Heffley / Louis Creek	KAM_TKA_1701	83.9	83.9	0.4	1%	0.4	1%	Rights of Way
				5.0	6%	5.0	6%	Roads
				5.4	6%	5.4	6%	Total Disturbance
	KAM_TKA_2129	90.3	90.3	2.0	2%	2.0	2%	Roads
KAM_TKA_2422	112.5	112.5	2.7	2%	2.7	2%	Roads	
Lac du Bois / Tranquille	KAM_TKA_1504	321.9	321.9	2.2	1%	2.2	1%	Roads
Louis Creek / Lower Adams	KAM_TKA_1966	165.3	165.3	5.7	3%	5.7	3%	Roads
Mad / Mica	KAM_TKA_4499	276.4	276.4	5.9	2%	5.9	2%	Roads
	KAM_TKA_4505	185.9	185.9	4.1	2%	4.1	2%	Roads
	KAM_TKA_4661	1868.2	1865.7	6.2	0%	6.2	0%	Roads
Mica / Raft	KAM_TKA_5749	370.5	369.0	4.7	1%	4.7	1%	Roads
Mad / Raft / Vavenby	KAM_TKA_5182	469.7	466.7	0.7	0%	0.7	0%	Forest Harvesting
				2.9	1%	1.5	0%	Roads
				3.6	1%	2.2	0%	Total Disturbance

Landscape Units	OGMA ID	Total OGMA Area (ha)	Total OGMA CE-CFLB Area (ha)	Incurred OGMA Area (ha)	Incurred OGMA %	Incurred CFLB Area (ha)	Incurred CFLB %	Disturbance Type
Mad / Vavenby	KAM_TKA_4447	109.8	109.8	3.1	3%	3.1	3%	Roads
	KAM_TKA_4874	440.2	439.5	5.1	1%	5.0	1%	Roads
				0.1	0%	0.1	0%	Rights of Way
				5.2	1%	5.2	1%	Total Disturbance
Mica / Vavenby	KAM_TKA_4450	40.0	40.0	3.1	8%	3.1	8%	Roads
Raft / Thunder Blue	KAM_TKA_6226	690.0	688.6	3.5	1%	3.5	1%	Roads
Skull / Tranquille	KAM_TKA_1926	66.3	66.3	2.1	3%	2.1	3%	Roads
Thunder Blue / Upper N. Thompson	KAM_TKA_6944	146.4	146.4	2.1	1%	2.1	1%	Roads
	KAM_TKA_7018	90.2	89.8	3.9	4%	3.9	4%	Roads
	KAM_TKA_7026	234.9	234.9	2.6	1%	2.6	1%	Roads

## Appendix 4 – Amount of Old Growth Forest in OGMA

The following section presents the current condition of CE-CFLB (ha) within legal OGMA at the landscape (by LU and BEC) and OGMA (old growth forest within OGMA boundaries) level. The reporting is demonstrating how the OGMA is meeting the policy targets, not whether the AU is meeting the targets. Table 26 compares the amount of old growth forest (column D), the total CE-CFLB area of legal OGMA (column E), and the amount of old growth forest within OGMA (column F) relative to the target for old growth forest (column B) for all AUs with targets and established OGMA. LU-BECs with either no old growth targets or without OGMA are not included in this reporting.

The landscape level (column D and D/C) provides the amount of old growth forest within the CE-CFLB portion of each AU that contains OGMA and indicates how much old growth forest is currently available as compared to the target. This provides context for the amount of old growth forest within and outside of OGMA in the same BEC subzone/variant and represents the future potential of that LU-BEC to improve old growth forest retention, conservation, distribution, and management on the landscape.

For example: in the Adams Lake LU-ICHdw3 AU, there is currently 815.2 ha of old growth forest in the CE-CFLB which equates to 174% of old growth forest compared to the targets. This translates to this AU having 1.74 times more old growth forest available than required by policy.

The OGMA polygon level (column E and E/C) provides the total amount of CE-CFLB within the OGMA and compares that CE-CFLB area to the target. This explores the original intent of OGMA to contain old growth forest and provides an indication of how OGMA are meeting or exceeding targets if total CE-CFLB area is assumed to all be old growth forest. Although the order is to manage the total area of the OGMA polygon (which could include non-forested area), the amount of CE-CFLB (ha) in the OGMA reflects the current amount of forest within that OGMA available to meet targets. This provides the context for evaluating if OGMA delineation captured enough area to meet the targets, regardless of age of the forest.

For example: in the Adams Lake LU-ICHdw3 AU, there is currently 308.0 ha of CE-CFLB in OGMA which equates to 66% of old growth forest compared to targets. This means if all the CE-CFLB in OGMA was old growth forest, it would account for 66% of the target being met.

The old growth forest within OGMA (column F and F/C) provides the actual amount of old growth forest within the OGMA and compares that CE-CFLB area to the target. It is important to note that if column F/C is 0% but there is CE-CFLB area in the OGMA, this means that there is currently no old growth forest within the OGMA. As a result, these OGMA with 0% are not contributing to the old growth forest targets.

For example: in the Adams Lake LU-ICHdw3 AU, there is 97.5 ha of old growth forest in the CE-CFLB within OGMA which equates to 21% of the target met with old growth forest. This means that only 21% of the target is being met within the OGMA with old growth forest.

By reporting on both the CE-CFLB area in OGMA (column E and E/C) and the amount of old in OGMA (column F and F/C), the results provide a clearer depiction of current condition and old growth management in LU-BECs with OGMA and where there are opportunities for improvements in the future at the landscape level (column D and D/C).

**Table 26.** Total Area of Old Growth Forest in the Cumulative Effectives Crown Forested Land Base (CE-CFLB) within Legal Old Growth Management Areas (OGMAs) Compared to Policy Targets by Assessment Unit (AU) in the Kamloops Land and Resource Management Plan (KLRMP) Area.

COLUMN CALCULATIONS:		Old Targets			Current Amount and Percents of Old Growth Forest					
		A	B	A*B=C	D	D/C	E	E/C	F	F/C
Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Target Old (%)	Target Old CE-CFLB Area (ha)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Target)
Adams Lake, Low	ESSFdc3	6,444.2	14%	902.2	1,863.2	207%	1,185.6	131%	452.7	50%
	ESSFdcw	1,505.7	9%	135.5	13.1	10%	342.4	253%	8.3	6%
	ESSFwc2	14,165.8	19%	2,691.5	174.3	6%	1,640.2	61%	14.0	1%
	ESSFwcw	597.8	19%	113.6	-	0%	325.1	286%	-	0%
	ICHdw3	3,355.3	14%	469.7	815.2	174%	308.0	66%	97.5	21%
	ICHmk2	10,438.1	14%	1,461.3	1,198.6	82%	818.3	56%	229.6	16%
	ICHmw3	27,379.2	9%	2,464.1	111.0	5%	3,509.4	142%	23.6	1%
	ICHwk1	5,569.1	13%	724.0	208.3	29%	742.6	103%	30.6	4%
	IDFdk2	361.2	13%	47.0	-	0%	176.7	376%	-	0%
	IDFmw2	15,437.8	13%	2,006.9	-	0%	2,179.5	109%	-	0%
	IDFhx2	172.2	13%	22.4	-	0%	49.0	219%	-	0%
MSdm3	6,317.3	14%	884.4	1,071.6	121%	469.3	53%	164.8	19%	
Albreda, Low	ESSFmm1	1,044.6	9%	94.0	93.2	99%	243.5	259%	43.4	46%
	ESSFmmw	559.9	9%	50.4	16.8	33%	69.7	138%	-	0%
	ESSFwc2	13,301.4	19%	2,527.3	2,872.3	114%	1,897.5	75%	721.0	29%
	ESSFwcw	8,133.7	19%	1,545.4	499.3	32%	1,312.6	85%	107.9	7%
	ICHmm	1,213.7	9%	109.2	103.8	95%	88.0	81%	28.3	26%
	ICHvk1	5,620.6	13%	730.7	2,247.7	308%	743.4	102%	583.6	80%
	ICHwk1	7,726.2	13%	1,004.4	2,883.6	287%	713.4	71%	484.6	48%
	SBSdh1	367.2	11%	40.4	72.5	180%	15.2	38%	10.5	26%
Ashcroft, High	ESSFxc2	2,251.1	21%	472.7	684.0	145%	679.1	144%	396.0	84%
	ESSFxcw	47.0	21%	9.9	14.0	142%	-	0%	-	0%
	IDFdk1	26,212.4	19%	4,980.4	563.2	11%	4,622.0	93%	291.6	6%
	IDFhx2	25,538.4	19%	4,852.3	175.2	4%	4,274.1	88%	3.2	0.1%
	MSxk2	15,168.7	21%	3,185.4	2,204.4	69%	1,702.8	53%	635.5	20%
	MSxk3	3,965.0	21%	832.6	1704.1	205%	896.4	108%	669.8	80%
	PPxh2	13,196.6	19%	2,507.4	12.3	0%	1164.7	46%	-	0%



COLUMN CALCULATIONS:		Old Targets			Current Amount and Percents of Old Growth Forest					
		A	B	A*B=C	D	D/C	E	E/C	F	F/C
Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Target Old (%)	Target Old CE-CFLB Area (ha)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Target)
Avola, Low	ESSFwc2	23,638.5	19%	4,491.3	1972.9	44%	3479.3	77%	576.8	13%
	ESSFwcw	5,209.3	19%	989.8	200.2	20%	1880.8	190%	127.9	13%
	ICHdw3	3,315.5	14%	464.2	77.5	17%	463.4	100%	54.3	12%
	ICHmw3	14,987.6	9%	1,348.9	1,252.5	93%	1,270.8	94%	298.2	22%
	ICHvk1	1,303.3	13%	169.4	338.8	200%	244.6	144%	99.8	59%
	ICHwk1	8,022.7	13%	1,042.9	2345.6	225%	1224.3	117%	742.9	71%
Barriere, Low	ESSFdc3	4,758.5	14%	666.2	1,033.6	155%	593.3	89%	204.1	31%
	ESSFdcw	533.8	9%	48.0	0.0	0%	200.4	417%	-	0%
	ESSFwc2	27,385.6	19%	5,203.3	462.7	9%	3,681.6	71%	57.4	1%
	ESSFwcw	4,676.7	19%	888.6	98.4	11%	602.3	68%	3.7	0.4%
	ICHdw3	26,262.6	14%	3,676.8	7,353.6	200%	4,084.9	111%	1,942.7	53%
	ICHmk2	13,363.2	14%	1,870.8	2,067.9	111%	1,590.3	85%	393.9	21%
	ICHmw3	6,892.1	9%	620.3	1.0	0%	681.5	110%	-	0%
	ICHwk1	8,044.8	13%	1,045.8	489.1	47%	1,135.2	109%	59.2	6%
	IDFdk2	913.6	13%	118.8	0.0	0%	292.0	246%	-	0%
	IDFmw2	7,322.1	13%	951.9	0.0	0%	850.8	89%	-	0%
	IDFvh2	95.4	13%	12.4	0.0	0%	-	0%	-	0%
MSdm3	4,403.5	14%	616.5	315.1	51%	193.5	31%	27.1	4%	
Bonaparte, Low	ESSFdc3	9,916.2	14%	1,388.3	2,571.9	185%	398.8	29%	282.8	20%
	MSdm3	6,203.0	14%	868.4	1,338.0	154%	443.1	51%	145.0	17%
	MSxk2	6,551.9	14%	917.3	1,248.2	136%	281.8	31%	128.8	14%
	SBPSmk	1,357.8	7%	95.0	154.0	162%	5.9	6%	4.1	4%
	SBSdw1	1,718.0	11%	189.0	506.1	268%	217.4	115%	149.8	79%
	SBSmm	3,090.7	11%	340.0	404.0	119%	220.6	65%	77.9	23%

		Old Targets			Current Amount and Percents of Old Growth Forest					
COLUMN CALCULATIONS:		A	B	A*B=C	D	D/C	E	E/C	F	F/C
Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Target Old (%)	Target Old CE-CFLB Area (ha)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Target)
Campbell, Int.	ESSFdc2	516.6	14%	72.3	38.4	53%	55.9	77%	15.6	22%
	ESSFdc3	1,050.1	14%	147.0	156.5	106%	354.7	241%	67.7	46%
	ESSFxc2	182.4	14%	25.5	60.3	236%	84.5	331%	51.0	200%
	ICHmk2	4,683.9	14%	655.7	467.3	71%	423.5	65%	43.7	7%
	ICHmw3	1,235.7	9%	111.2	0.0	0%	103.5	93%	-	0%
	IDFdk1	22,355.9	13%	2,906.3	21.4	1%	1,393.3	48%	7.7	0.3%
	IDFdk2	2,821.5	13%	366.8	0.0	0%	203.3	55%	-	0%
	IDFmw2	6,979.8	13%	907.4	0.0	0%	1,328.7	146%	-	0%
	IDFhx2	18,626.9	13%	2,421.5	13.3	1%	2,288.4	95%	-	0%
	MSdm2	3,592.8	14%	503.0	223.3	44%	6.3	1%	0.8	0.2%
	MSdm3	5,022.2	14%	703.1	413.1	59%	405.4	58%	25.4	4%
	MSxk2	5,170.2	14%	723.8	283.8	39%	118.6	16%	34.4	5%
PPxh2	7,842.9	13%	1,019.6	0.0	0%	1,113.6	109%	-	0%	
Cayenne, Int.	ESSFwc2	14,746.7	19%	2,801.9	1,510.4	54%	1,417.5	51%	565.2	20%
	ESSFwcw	4,716.2	19%	896.1	385.5	43%	1,547.3	173%	256.8	29%
	ICHdw3	154.3	14%	21.6	35.4	164%	-	0%	-	0%
	ICHmw3	16,164.4	9%	1,454.8	509.4	35%	1,935.1	133%	179.0	12%
	ICHwk1	7,341.4	13%	954.4	321.6	34%	580.1	61%	91.0	10%
Clearwater, Low	ESSFdc3	14,605.0	14%	2,044.7	3,509.8	172%	1,760.2	86%	1,073.2	52%
	ESSFdcw	244.4	9%	22.0	0.0	0%	-	0%	-	0%
	ESSFwc2	33,175.4	19%	6,303.3	2,711.6	43%	3,358.7	53%	539.4	9%
	ESSFwcw	3,884.2	19%	738.0	1,012.1	137%	917.0	124%	93.8	13%
	ICHdw3	10,408.7	14%	1,457.2	1,035.4	71%	405.5	28%	69.8	5%
	ICHmk2	13,700.4	14%	1,918.0	1,182.1	62%	1,183.7	62%	229.6	12%
	ICHmk3	50.8	9%	4.6	0.0	0%	-	0%	-	0%
	ICHmw3	16,101.2	9%	1,449.1	996.3	69%	1,536.0	106%	194.7	13%
	IDFmw2	6,928.3	13%	900.7	6.8	1%	692.5	77%	6.7	1%
SBSmm	25,666.1	11%	2,823.3	4,460.0	158%	2,802.3	99%	1,753.9	62%	
Darfield, Int.	ESSFdc3	4,247.9	14%	594.7	1,008.2	170%	698.9	118%	322.3	54%
	ICHmk2	7,121.8	14%	997.1	632.3	63%	626.9	63%	264.8	27%
	IDFmw2	6,239.1	13%	811.1	0.0	0%	782.1	96%	-	0%
	IDFhx2	172.7	13%	22.4	0.0	0%	13.4	60%	-	0%
	MSdm3	8,607.4	14%	1,205.0	756.7	63%	971.3	81%	136.1	11%
	SBSmm	4,407.5	11%	484.8	301.8	62%	178.5	37%	22.3	5%

		Old Targets			Current Amount and Percents of Old Growth Forest					
COLUMN CALCULATIONS:		A	B	A*B=C	D	D/C	E	E/C	F	F/C
Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Target Old (%)	Target Old CE-CFLB Area (ha)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Target)
Deadman, Int.	ESSFdc3	157.4	14%	22.0	40.4	183%	-	0%	-	0%
	ESSFxc2	10,632.2	14%	1,488.5	3,615.8	243%	1,987.2	134%	1,291.2	87%
	IDFdk1	10,190.9	13%	1,324.8	140.1	11%	847.9	64%	7.0	1%
	IDFdk3	22,261.7	13%	2,894.0	155.1	5%	1,952.6	67%	76.6	3%
	IDFhx2	12,884.8	13%	1,675.0	221.9	13%	2,813.1	168%	80.3	5%
	MSdm3	1,805.8	14%	252.8	1,168.5	462%	-	0%	-	0%
	MSxk2	26,902.1	14%	3,766.3	5,787.0	154%	193.6	5%	84.3	2%
	PPxh2	48.9	13%	6.4	0.0	0%	1.1	18%	-	0%
	SBPSmk	10,080.5	7%	705.6	1,243.2	176%	333.0	47%	120.4	17%
Dewdrop, High	IDFdk1	6,938.1	19%	1,318.2	12.2	1%	781.9	59%	0.6	0.05%
	IDFhx2	7,320.8	19%	1,390.9	45.2	3%	1,533.5	110%	41.6	3%
	PPxh2	2,888.1	19%	548.7	3.5	1%	253.3	46%	3.5	1%
Dunn, High	ESSFdc3	9,821.7	21%	2,062.6	4,556.0	221%	683.6	33%	342.8	17%
	ESSFdcw	4,234.3	13%	550.5	101.5	18%	188.1	34%	2.1	0.4%
	ESSFwc2	2.7	28%	0.8	0.0	0%	0.1	7%	-	0%
	ESSFwcw	16.3	28%	4.6	0.2	5%	-	0%	-	0%
	ICHmk2	847.6	21%	178.0	177.4	100%	0.7	0%	0.6	0.3%
	IDFmw2	10,686.3	19%	2,030.4	0.0	0%	1,356.6	67%	-	0%
	IDFhx2	1,219.3	19%	231.7	0.0	0%	153.1	66%	-	0%
	MSdm3	4,716.0	21%	990.4	1,063.3	107%	921.9	93%	389.7	39%
Hat Creek, Int.	ESSFxc2	1,411.6	14%	197.6	755.2	382%	63.2	32%	49.1	25%
	ESSFxc3	3,606.0	14%	504.8	867.2	172%	423.7	84%	171.2	34%
	ESSFxcw	1,439.0	14%	201.5	629.6	313%	369.1	183%	183.1	91%
	IDFdk1	16,427.9	13%	2,135.6	334.4	16%	2,095.6	98%	88.2	4%
	IDFhx2	19,074.9	13%	2,479.7	198.9	8%	1,661.3	67%	34.6	1%
	MSxk3	15,458.4	14%	2,164.2	3,887.4	180%	1,484.8	69%	501.7	23%
	PPxh2	944.4	13%	122.8	0.0	0%	238.4	194%	-	0%

COLUMN CALCULATIONS:		Old Targets			Current Amount and Percents of Old Growth Forest					
		A	B	A*B=C	D	D/C	E	E/C	F	F/C
Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Target Old (%)	Target Old CE-CFLB Area (ha)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Target)
Heffley, Int.	ESSFdc3	228.0	14%	31.9	18.1	57%	-	0%	-	0%
	ESSFxc2	98.3	14%	13.8	7.9	57%	12.9	93%	-	0%
	ICHmk2	657.6	14%	92.1	57.6	63%	126.8	138%	16.7	18%
	IDFdk1	4,879.9	13%	634.4	19.4	3%	684.2	108%	1.2	0.2%
	IDFdk2	5,109.8	13%	664.3	0.0	0%	572.6	86%	-	0%
	IDFmw2	608.2	13%	79.1	0.0	0%	84.7	107%	-	0%
	IDFhx2	12,474.9	13%	1,621.7	1.9	0%	1,359.4	84%	-	0%
	MSdm3	10,425.5	14%	1,459.6	2,036.3	140%	811.6	56%	491.0	34%
	MSxk2	3,396.3	14%	475.5	746.4	157%	332.0	70%	148.8	31%
	PPxh2	2,782.4	13%	361.7	0.0	0%	519.0	143%	-	0%
Lac du Bois, High	IDFdk1	1,968.2	19%	374.0	6.7	2%	49.4	13%	-	0%
	IDFdk2	2,927.8	19%	556.3	0.0	0%	168.7	30%	-	0%
	IDFhx2	6,988.8	19%	1,327.9	7.4	1%	251.0	19%	-	0%
	MSdm3	854.9	21%	179.5	220.7	123%	155.3	86%	70.5	39%
	PPxh2	2,226.4	19%	423.0	2.1	1%	-	0%	-	0%
Louis Creek, High	ESSFdc3	11,183.8	21%	2,348.6	1,773.7	76%	1,448.8	62%	545.7	23%
	ESSFdcw	545.4	13%	70.9	0.0	0%	125.7	177%	-	0%
	ICHmk2	4,495.1	21%	944.0	747.5	79%	381.5	40%	101.2	11%
	IDFdk2	9,859.3	19%	1,873.3	0.0	0%	1,997.5	107%	-	0%
	IDFmw2	6,635.7	19%	1,260.8	0.0	0%	647.4	51%	-	0%
	IDFhx2	10.6	19%	2.0	0.0	0%	3.2	157%	-	0%
	MSdm3	12,436.1	21%	2,611.6	2,429.0	93%	1,357.1	52%	727.7	28%
Lower Adams, Int.	ESSFdc3	7,502.3	14%	1,050.3	1,860.5	177%	1,441.4	137%	669.9	64%
	ESSFdcw	789.8	9%	71.1	0.0	0%	176.6	248%	-	0%
	ICHmk2	2,336.8	14%	327.2	638.5	195%	452.8	138%	239.2	73%
	ICHmw3	4,777.8	9%	430.0	0.0	0%	636.4	148%	-	0%
	IDFmw2	4,759.0	13%	618.7	8.1	1%	509.0	82%	-	0%
	IDFhx2	488.5	13%	63.5	0.0	0%	50.7	80%	-	0%

COLUMN CALCULATIONS:		Old Targets			Current Amount and Percents of Old Growth Forest					
		A	B	A*B=C	D	D/C	E	E/C	F	F/C
Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Target Old (%)	Target Old CE-CFLB Area (ha)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Target)
Lower Bonaparte, Int.	ESSFxc2	227.8	14%	31.9	27.4	86%	41.7	131%	18.3	57%
	ESSFxc3	106.7	14%	14.9	74.4	498%	12.0	80%	11.8	79%
	IDFdk1	13,216.4	13%	1,718.1	315.6	18%	758.1	44%	10.4	1%
	IDFdk3	6,103.9	13%	793.5	52.4	7%	359.7	45%	-	0%
	IDFhx2	11,106.9	13%	1,443.9	193.9	13%	1,095.7	76%	3.5	0.2%
	IDFwx	4,707.1	13%	611.9	0.0	0%	688.5	113%	-	0%
	MSxk2	8,871.4	14%	1,242.0	1,343.6	108%	49.2	4%	19.0	2%
	MSxk3	3,004.0	14%	420.6	700.8	167%	294.8	70%	125.6	30%
PPxh2	3,543.5	14%	496.1	6.3	1%	200.9	40%	-	0%	
Mad, Low	ESSFwc2	23,217.6	14%	3,250.5	1,151.3	35%	3,314.3	102%	425.9	13%
	ESSFwcv	1,828.3	14%	256.0	0.0	0%	234.4	92%	-	0%
	ICHdw3	15,037.2	14%	2,105.2	900.1	43%	1,661.6	79%	164.8	8%
	ICHmw3	14,171.7	14%	1,984.0	318.3	16%	1,511.1	76%	158.0	8%
	ICHwk1	3,629.7	14%	508.2	280.3	55%	881.6	174%	158.3	31%
	IDFmw2	1,330.4	14%	186.3	0.0	0%	166.8	90%	-	0%
Mica, Low	ESSFwc2	15,533.9	14%	2,174.7	354.3	16%	2,218.0	102%	137.5	6%
	ESSFwcv	1,616.1	14%	226.2	13.6	6%	368.9	163%	9.6	4%
	ICHdw3	12,475.5	14%	1,746.6	511.3	29%	708.2	41%	85.6	5%
	ICHmw3	12,805.2	14%	1,792.7	117.8	7%	1,491.0	83%	41.6	2%
	ICHwk1	8,409.3	14%	1,177.3	623.8	53%	1,122.7	95%	179.0	15%
Mud, Int.	ESSFwc2	10,879.9	14%	1,523.2	1,604.1	105%	2,366.5	155%	656.0	43%
	ESSFwcv	7,588.7	14%	1,062.4	407.6	38%	1,166.2	110%	162.2	15%
	ICHmw3	871.8	14%	122.1	256.9	211%	168.9	138%	84.1	69%
	ICHvk1	3,922.1	14%	549.1	1,331.2	242%	837.7	153%	430.3	78%
	ICHwk1	11,679.8	14%	1,635.2	2,328.3	142%	1,177.6	72%	272.0	17%
Nehalliston, Int.	ESSFdc3	7,468.8	14%	1,045.6	1,598.1	153%	576.4	55%	320.5	31%
	ICHmk2	6,172.0	14%	864.1	693.9	80%	791.2	92%	173.1	20%
	IDFmw2	5,465.2	14%	765.1	34.1	4%	902.0	118%	9.0	1%
	SBSdw1	3,844.6	14%	538.2	399.3	74%	465.0	86%	78.8	15%
	SBSmm	19,630.6	14%	2,748.3	3,777.9	137%	339.4	12%	124.0	5%

		Old Targets			Current Amount and Percents of Old Growth Forest					
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Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Target Old (%)	Target Old CE-CFLB Area (ha)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Target)
Raft, Low	ESSFwc2	36,958.6	14%	5,174.2	3,000.6	58%	6,085.1	118%	294.2	6%
	ESSFwcw	2,244.5	14%	314.2	253.4	81%	583.0	186%	-	0%
	ICHdw3	10,440.9	14%	1,461.7	665.1	45%	1,932.8	132%	290.2	20%
	ICHmk2	3,010.5	14%	421.5	402.2	95%	193.4	46%	88.4	21%
	ICHmw3	10,095.7	14%	1,413.4	202.0	14%	860.7	61%	82.8	6%
	ICHvk1	555.0	14%	77.7	170.2	219%	70.4	91%	-	0%
	ICHwk1	3,764.9	14%	527.1	193.0	37%	581.5	110%	99.7	19%
	IDFmw2	1,027.2	14%	143.8	0.0	0%	156.1	109%	-	0%
SBSmm	2,556.8	14%	358.0	318.3	89%	169.0	47%	87.8	25%	
S. Kamloops, Int.	ESSFxc2	543.6	14%	76.1	263.9	347%	189.6	249%	128.9	169%
	IDFdk1	14,459.9	13%	1,879.8	78.8	4%	1,516.5	81%	65.6	3%
	IDFhx2	12,553.8	13%	1,632.0	43.6	3%	1,583.1	97%	36.4	2%
	MSxk2	7,278.2	14%	1,018.9	1,380.1	135%	676.9	66%	415.5	41%
	PPxh2	5,171.3	13%	672.3	5.2	1%	535.2	80%	-	0%
Skull, Low	ESSFdc3	8,507.2	14%	1,191.0	931.3	78%	149.0	13%	76.3	6%
	ESSFxc2	3,137.5	14%	439.2	412.0	94%	144.6	33%	45.1	10%
	ICHmk2	2,236.6	14%	313.1	236.7	76%	318.4	102%	121.7	39%
	IDFdk2	4,231.9	13%	550.2	0.0	0%	355.5	65%	-	0%
	IDFmw2	4,904.8	13%	637.6	0.0	0%	834.1	131%	-	0%
	IDFhx2	6,218.9	13%	808.5	0.0	0%	1,227.3	152%	-	0%
	MSdm3	24,689.4	14%	3,456.5	3,567.0	103%	848.2	25%	246.7	7%
	MSxk2	22.0	14%	3.1	10.7	347%	-	0%	-	0%
PPxh2	1,277.9	13%	166.1	0.0	0%	484.0	291%	-	0%	
Stump Lake, Int.	ESSFxc2	117.9	14%	16.5	30.8	186%	0.8	5%	0.8	5%
	IDFdk1	9,805.7	13%	1,274.7	5.9	0%	855.4	67%	1.1	0.1%
	IDFhx2	868.0	13%	112.8	0.0	0%	257.9	229%	-	0%
	MSdm2	287.9	14%	40.3	6.6	16%	-	0%	-	0%
	MSxk2	10,289.4	14%	1,440.5	955.5	66%	842.0	58%	298.0	21%
	PPxh2	202.2	13%	26.3	0.0	0%	-	0%	-	0%
Thunder Blue, Low	ESSFwc2	16,892.1	19%	3,209.5	2,724.2	85%	4,388.0	137%	862.2	27%
	ESSFwcw	7,044.6	19%	1,338.5	158.2	12%	1,377.1	103%	44.4	3%
	ICHmw3	1,778.2	9%	160.0	264.0	165%	248.1	155%	120.9	76%
	ICHvk1	7,193.8	13%	935.2	2,714.8	290%	1,377.6	147%	655.5	70%
	ICHwk1	15,748.4	13%	2,047.3	5,867.6	287%	1,976.0	97%	1,171.1	57%

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Tranquille, Int.	ESSFdc3	2,443.8	14%	342.1	158.5	46%	189.5	55%	7.3	2%
	ESSFxc2	2,523.2	14%	353.2	743.0	210%	382.3	108%	219.7	62%
	IDFdk1	9,978.0	13%	1,297.1	6.5	1%	1,411.8	109%	4.4	0.3%
	IDFdk2	1,521.0	13%	197.7	0.0	0%	164.7	83%	-	0%
	IDFdk3	1,077.2	13%	140.0	0.0	0%	78.1	56%	-	0%
	IDFhx2	753.6	13%	98.0	0.0	0%	208.0	212%	-	0%
	MSdm3	3,514.7	14%	492.1	379.8	77%	373.0	76%	148.2	30%
	MSxk2	9,677.0	14%	1,354.8	558.1	41%	328.3	24%	94.8	7%
Tum Tum, Int.	ESSFvc	1,887.6	19%	358.7	188.2	52%	270.6	75%	28.2	8%
	ESSFvcw	1,652.1	19%	313.9	67.7	22%	116.0	37%	32.0	10%
	ESSFwc2	17,011.2	19%	3,232.1	901.0	28%	2,723.6	84%	212.0	7%
	ESSFwcw	9,006.5	19%	1,711.2	263.9	15%	1,146.2	67%	137.2	8%
	ICHdw3	11.1	14%	1.6	4.0	257%	-	0%	-	0%
	ICHmw3	3,714.0	9%	334.3	89.5	27%	281.9	84%	48.8	15%
	ICHvk1	17,983.4	13%	2,337.8	4,817.7	206%	2,557.8	109%	1,252.6	54%
	ICHwk1	16,554.1	13%	2,152.0	1,268.9	59%	912.2	42%	397.2	18%
Upper Guichon, Low	ESSFxc2	2,310.0	14%	323.4	802.9	248%	506.0	156%	334.4	103%
	IDFdk1	32,118.9	13%	4,175.5	195.1	5%	2,419.2	58%	114.7	3%
	IDFhx2	8.8	13%	1.1	0.0	0%	6.9	607%	-	0%
	MSxk2	28,115.9	14%	3,936.2	4,011.1	102%	1,004.8	26%	366.0	9%
Upper N. Thompson, Int.	ESSFwc2	26,702.9	19%	5,073.6	5,675.7	112%	3,001.0	59%	1,093.0	22%
	ESSFwcw	13,151.6	19%	2,498.8	351.8	14%	1,236.6	49%	71.9	3%
	ICHvk1	9,175.2	13%	1,192.8	3,591.8	301%	1,203.6	101%	672.8	56%
	ICHwk1	4,889.1	13%	635.6	1,312.5	207%	599.9	94%	300.8	47%
Vavenby, Low	ESSFdc3	147.5	14%	20.7	14.2	69%	-	0%	-	0%
	ESSFdcw	83.3	9%	7.5	14.6	195%	30.9	412%	8.3	111%
	ESSFwc2	7,673.4	19%	1,457.9	287.3	20%	896.9	62%	148.7	10%
	ESSFwcw	527.3	19%	100.2	58.6	59%	106.6	106%	25.5	25%
	ICHdw3	4,913.8	14%	687.9	678.8	99%	515.6	75%	174.5	25%
	ICHmk2	491.7	14%	68.8	154.5	224%	43.5	63%	6.8	10%
	ICHmw3	4,635.4	9%	417.2	285.3	68%	514.8	123%	77.0	18%
	IDFmw2	4,473.7	13%	581.6	19.4	3%	898.3	154%	2.3	0.4%
	SBSmm	1,946.0	11%	214.1	249.8	117%	16.4	8%	1.2	1%
<b>TOTAL</b>		<b>1,723,541</b>		<b>253,053</b>	<b>172,900</b>	<b>68%</b>	<b>199,117</b>	<b>79%</b>	<b>37,971</b>	<b>15%</b>



Ministry of  
Water, Land and  
Resource Stewardship

**CEF** Cumulative  
Effects  
Framework